• Oral Presentations •

A-001 Lenguaje, ideología y poder: discurso dirigido a maestros en torno al VIH/SIDA

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Background and Objectives: La teoría del discurso combina la investigación en salud pública con la lingüística, la psicología y la sociología. Esto permite entender cómo el discurso comunica unas ideas que son la expresión de un orden social. El propósito de esta investigación fue denunciar el discurso hegemónico dirigido a los maestros del Departamento de Educación de Puerto Rico en torno a la educación en salud sobre el VIH/SIDA, durante el periodo de 1988 a 2010. Las preguntas de investigación indagaban sobre los actores, los estereotipos ideológicos, las metáforas, las formas de exclusión, el control discursivo por parte de los grupos de poder, el control de la acción de los grupos menos poderosos y las consecuencias sociales del discurso. Estas preguntas se formularon a partir de las siguientes bases teóricas: la teoría del discurso según van Dijk (2011), y las teorías de poder, ideología y hegemonía según Althusser (1977), Gramsci (1998) y Young (2004) y la aplicación de lo anterior al aparato educativo según Apple (2008). Methods: Esta investigación revisó una muestra de documentos institucionales sobre VIH/SIDA dirigidos a formar los maestros y estudiantes en este tema. Se procedió a desarrollar un marco temático, codificar los datos, organizar los datos y resumir e interpretar los hallazgos. Results: Se encontró el uso de metáforas de guerra, invasión y contaminación. También la reproducción de estereotipos ideológicos que reproducen opresiones de género, orientación sexual. Conclusion: Se propone reconstruir el discurso presente en estos documentos en términos liberadores y democráticos.

A-002 Experiences of discrimination in a sample of LGBTT people in Puerto Rico

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Background & Objectives: Lesbian, gay, bisexual, transsexual and transgender (LGBTT) people are disproportionally affected by health disparities due in part to discrimination based on sexual identity and orientation. The objective of this presentation is to explore the experiences of discrimination as reported by a sample of LGBTT individuals in Puerto Rico (PR). Methods: Data was collected during the 2013 LGBTT Pride Parade in San Juan, using a brief self-administered survey that included questions on healthcare priorities and needs, disclosure of sexual orientation, and experience of discrimination. A secondary database analysis was conducted using descriptive and bivariate statistics. Results: In the sample (n=160), experiences of discrimination was commonly reported. This was consistent across age group, area of residence and sexual orientation/identity as no statistical differences were found. Across the sample, discrimination due to sexual orientation/identity was more frequently reported in school settings (49.7%). At least a quarter of the sample reported regular or bad experiences based on their sexual orientation/identity when receiving services in governmental offices and when looking for support from relatives. Conclusion: Findings suggest that the experience of discrimination is consistent across age groups, area of residence, and sexual orientation. Therefore, policies and interventions to protect LGBTT individuals in different settings are necessary. Future research should address the feasibility of developing interventions to reduce the experience of discrimination in this group, including training to service providers and to establish and strengthen support networks for LGBTT people in PR. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): We extend our gratitude to the participants, the volunteers who collaborated in data collection, and to Coaí, Inc. for their support to the study.

A-003 More than HIV: Healthcare Priorities and Needs from a Sample of LGBTT People in Puerto Rico

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Background and Objectives: Lesbian, gay, bisexual, transsexual and transgender (LGBTT) people are disproportionally affected by health disparities. HIV/AIDS has been consistently reported as an important issue in these groups, yet there is a lack of scientific data about their healthcare priorities and needs. The objective of this presentation is to describe healthcare needs and priorities as reported by a sample of LGBTT individuals in Puerto Rico. Methods: Data was collected during the 2013 LGBTT Pride Parade in San Juan, using a brief self-administered survey that included questions on healthcare priorities and needs, disclosure of sexual orientation, and experience of discrimination. A secondary database analysis was conducted using descriptive and bivariate statistics. Results: Among LGBTT participants (n=160) HIV/AIDS (81.3%), mental health (79.4%) and sexual health (71.3%) were identified as leading healthcare priorities. Chi-square analyses were performed using age groups organized by human generations (Baby boomers, X, and Y generations). A statistically significant difference was found for mental health (17-32years=72.4%; 33-48years=82.7%; 49+years=100.0%; p-value=0.018). Although

aging as health issue wasn't reported as a top priority across groups, the bivariate analysis showed a statistically significant difference when stratified by age group (17-32years=25.3%; 33-48years=55.8%; 49+years=75.0%; p-value<0.001). Conclusion: Findings suggest the need to continue prioritizing the response to the HIV epidemic in these groups and to address mental and sexual health needs. Results also show differences in healthcare priorities based on age which suggest the needs for targeted intervention and health planning. Further research should focus on the specific needs within the prioritized areas and according generations. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): We extend our gratitude to the participants, the volunteers who collaborated in data collection, and to Coaí, Inc. for their support to the study.

A-004 Stigma as a social determinant of health among HIV-positive gay men and other MSM in Puerto Rico

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Background and Objectives: Gay men and other men who have sex with men (MSM) are disproportionally affected by different health issues. Although in Puerto Rico (PR) most of the HIV cases are reported among injection drug users, during the last 4 years incidence rates has been more rapidly increasing among MSM. While risky practices increase the likelihood of HIV infection, anecdotal data suggest that there are other social determinants that frame the risks of this population. Stigma based on HIV status and sexual orientation/identity may play a role in the access and retention in health care of HIV-positive gay men and MSM. Methods: To further understand how stigma and access to health care play a role in the health status of these groups, a qualitative research approach was implemented using semi-structured interviews with eight key informants. Data analysis included content and discourse analyses. Results: Health care providers reported a lack of targeted and culturally-appropriate interventions for gay men and MSM in PR. HIV-related stigma and stigma related to sexual orientation/identity in the form of discrimination was consistently described as part of the experiences of HIV-positive MSM when accessing health services. Gay men/MSM reported interrupting treatment to avoid negative interactions with healthcare providers. Conclusion: Findings support the need for the development of culturally and linguistically appropriate prevention and treatment interventions for gay men and MSM in PR. These interventions must address the interconnection of HIV-stigma and gay-stigma among MSM as well as the capacity building on LGBT health among healthcare providers. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This analysis was partially supported by the US Centers for Disease Control and Prevention grant 1U01PS003310. The contents are solely the responsibility of the authors and do not necessarily represent the official view of the sponsor. Sponsor of this study had no part in the analysis and did not take part in the writing of or decision to publish this presentation.

A-005 Stigma, mental health, and quality of life of HIV-positive gay men and other MSM in Puerto Rico

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Background and Objectives: Gay men and other men that have sex with men (MSM) are disproportionally affected by the HIV epidemic. In Puerto Rico (PR), this is the only group in which an incidence increase has been reported during the last 4 years. Nonetheless, there is very limited research on their experiences of stigma and its implications for their mental health and quality of life. Methods: We examined data from an ongoing behavioral study being conducted in a community-based organization that offers HIV-related services in PR. The study, enclosed to HIV-positive gay men and other MSM, encompass the participation in a survey interview that includes domains such as socio-demographic characteristics and measures of stigma, depression, anxiety, and quality-of-life. Results: 75 HIV-positive MSM have participated in the study. Two thirds of the sample (68.0%) identified themselves as homosexual. Across the sample high rates of gay-related stigma (Severe=23.3%; Moderate=35.6%; Mild=34.2%; None=6.8%) and HIV-related stigma (Severe=14.7%; Moderate=37.3%; Mild=40.0%; None=8.0%) were observed. A strong relationship between HIV-related stigma and gay-related stigma was found (p-value=0.002). Likewise, association was observed between HIV-related stigma and some aspects of quality-of-life (HIV mastery: p-value=0.011; Disclosure worries: p-value=0.006). Gay-related stigma was strongly associated with depression (p-value=0.017) and the overall function (p-value=0.011) and life satisfaction (p-value=0.012) aspects of quality-of-life. Conclusion: HIV and gay-related stigma are major social determinants of health among study participants. Future research and interventions should address the inclusion of stigma management and stigma reduction strategies as part of mental health and social support services targeted to HIV-positive MSM in PR. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This analysis was partially supported by the US Centers for Disease Control and Prevention grant 1U01PS003310. The contents are solely the responsibility of the authors and do not necessarily represent the official view of the sponsor. Sponsor of this study had no part in the analysis and did not take part in the writing of or decision to publish this presentation. We extend our gratitude to the participants, the students collaborating in the data collection for this study and the organizations that have provided access to recruit participants.

A-006 Marcado de por vida: Experiences of Stigma among HIV-positive Gay Men and other MSM in Puerto Rico

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Background & Objectives: Gay men and other men who have sex with men (MSM) continue to be disproportionately affected by the HIV epidemic. There is limited assessment of social determinants of HIV-risk and relatively limited targeted HIV related programming for this group, particularly HIV+MSM. Evidence suggests the need to describe the social complexities of both HIV and gay-related stigma among this group in PR, and the consequences of the experiences of stigma for increased health disparities. Methods: A qualitative study was conducted using semi-structured interviews as proposed by the life history method. From March 2013 to October 2013, we interviewed 18 HIV+MSM. Interviews were transcribed and content analysis was completed informed by grounded theory. Results: Experiences and perceptions of stigma reported by participants were organized into four main themes: social isolation, social support, engagement in healthcare, and disclosure of sexual identity/practices and HIV diagnosis. Both HIV and gay-related stigma were identified in the form of rejection and violence from family and community members, discrimination by healthcare providers, delays in engagement/retention in care, difficulties in disclosing HIV-status and sexual identity, and the perception of HIV-diagnosis as a death sentence. Conclusion: Findings suggest that the experience of stigma is a major contribution to health disparities among HIV+ gay men and other MSM. Therefore, there is a need to develop interventions and policies to address stigma in this group. Future research should consider the feasibility of developing interventions to reduce the experience of stigma, including training to service providers, and establish and strengthen support networks for this group. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This analysis was partially supported by the US Centers for Disease Control and Prevention grant 1U01PS003310. The contents are solely the responsibility of the authors and do not necessarily represent the official view of the sponsor. Sponsor of this study had no part in the analysis and did not take part in the writing of or decision to publish this presentation. We extend our gratitude to the participants, the students collaborating in the data collection for this study and the organizations that have provided access to recruit participants.

A-007 Relative Survival of Oral Cavity and Pharynx Cancer by Socioeconomic Status in Puerto Rico

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Background & Objectives: Cancer is the second leading cause of death in Puerto Rico (PR) after cardiovascular diseases. Oral cavity and pharynx cancer (OCP) is one of the most common cancers in the population, especially in men. According to the Puerto Rico Central Cancer Registry (PRCCR), during the period between 1993-2004 a total of 3,989 cases of OCP cancer were diagnosed in PR. During the period 2000-04, OCP cancer among men represented 4.6% of all cancers, while among women represented 1.7% of all cancers. The aim of this ecological study is to describe the relative survival (RS) of OCP in PR by socioeconomic position. Methods: Data for cases diagnosed between 2001 and 2003 and followed up until 2008 were provided by the PRCCR. A total of 844 cases were available for this analysis. Socioeconomic status was operationalized with a socioeconomic position index (SEP) at municipality level, using the statistical technique of Principal Components. Relative Survival was analyzed for the first and fifth year after diagnosis, stratifying by cancer stage, sex, age and socioeconomic position in quintiles. Results: Results showed that residents in municipalities with higher SEP show better survival in the fifth years after diagnosed among the following strata: men (RSR:1.19, 95% CI=0.61,2.35), cases older than 50 years (RSR:1.23, 95% CI=0.58,2.60), cases with localized stage (RS:1.27, 95% CI=0.55,2.96) and cases with regional stage (RSR:1.76, 95% CI=0.65,4.74). Conclusion: These results are consistent with those published by the National Cancer Institute in 2008.

A-008 Assessment of Occlusal Vertical Dimension Using Two Clinical Methods

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Background & Objectives: The aims of this cross sectional study were to: 1. determine if facial proportion and craniometric methods predict occlusal vertical dimension (OVD) in subjects with normal vertical development, 2. determine explanatory variables related to OVD measurements. Methods: From a population of 836 active orthodontic patients (2013) a study group of 99 subjects aged 14 to 66 y/o that met the inclusion criteria were recruited for this study. Inclusion criteria included: recent cephalometric x-ray (<6mos from the start of study), normodivergent growth pattern (SN-GoGn 27-37o), skeletally mature (≥CVMS IV) and consent to participate. Individuals with craniofacial alterations were not included. Patients were evaluated clinically by a calibrated dentist that measured the following distances: ear-eye (EE), glabella-subnasale (GSn) and subnasale-menton (SnMe). Outcome measure was the coeficient for the proportion between EE/SnMe (craniometric method) and GSn/SnMe. Outcome measures of this study were compared with established literature measures. Statistical analysis was performed using descriptive statistics and Inferential (test of collinearity for variables EE distance and GSn, generalized lineal model multiple lineal regression). Results: Mean age of subjects was 24± 11.46 and 71.7% were female. Subjects EE/SnMe coefficient/proportion (Craniometric method) was 1.3, (95% CI 1.02, 1.43); GSn/SnMe coefficient/proportion (Proportions method) was 1.02, (95% CI 1.01, 1.03). Statistical non significant differences were found in this study for the facial coefficient for proportions measured when compared to previous studies (p> 0.05). Mandibular ramus height affects these coefficients for proportions. Conclusion: Established coefficient for proportions for ear-eye/nose-chin and Glabella-Subnasale/Subnasale-Menton were different when compared to the results of this study.

A-009 Nutrient Intake and Gingivitis in 12 Year Old Puerto Ricans

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Background & Objectives: Diet has an important role in health status and diseases, such as cancer, cardiovascular disease, osteoporosis, allergic diseases, and other systemic inflammatory diseases. Some nutrients, such as fatty acids, have been found to be in increased number in inflamed gingiva. Gingivitis, the swelling of the dental supporting tissues, can lead to a state of chronic low grade systemic inflammation. The aim of this cross-sectional study was to investigate the association between nutrients and gingivitis in 12 year-old Puerto Ricans. Methods: A probabilistic sample of seven hundred ninety children was assessed for gingivitis and went through a culturally adapted and validated questionnaire. To evaluate gingival bleeding (GB), a Hu Friedy PCP 126 probe was inserted 2mm or less into the gingival sulcus and swept into the mesial/interproximal area. Presence of gingivitis was determined if 25% of the teeth examined presented GB. A Mann–Whitney U test was done to associate the nutrients (median) and presence of gingivitis; a significance level of 0.05. Results: Consumption (in grams; g) of sugars was statistically significant associated to presence of gingivitis: total carbohydrate (183.311 vs. 208.615; p=0.01), sucrose (30.196 vs. 36.256; p=0.019), pectins (0.669 vs. 0.871; p=0.009), total sugars (90.609 vs. 101.427; p=0.017); and animal protein (41.2 vs. 41.271; p=0.024). Conclusion: Our results suggest a possible relationship between sugar and animal protein consumption and gingival inflammation. Future studies should be conducted to confirm our results and determine a direct mechanism to link these. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by NIH MDS21.

A-010 Clustering of Hypospadias Cases in Puerto Rico

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Background & Objectives: Hypospadias is a congenital condition where the location of the male urethrae is not located near the tip of the glans penis. The two-hit hypothesis proposes that genetic susceptibility plus exposure to endocrine disruptors underlie this condition. If this is the case, it is expected that cases are clustered within a well-defined geographic location rather than being uniformly distributed across space. Therefore, we studied the distribution of hypospadias cases in Puerto Rico to test this hypothesis. Methods: The dataset was produced by the Birth Defects Prevention and Surveillance System of the Department of Health of Puerto Rico (BDSS-PR), which linked the information of male newborns of the Puerto Rico Birth Cohort dataset (PRBC; n=92 285) from 2007-10. A population-based case-control study was conducted to estimate the potential effects of maternal, paternal, birth-related variables, and social risk factors for hypospadias. Two types of geographical information systems (GIS) methods (Anselin Local Moran's I and Getis-Ord G) were used to determine the spatial distribution of hypospadias prevalence. Results: Gestational age (25 to 37 weeks), age of the mother (40 +), and being non-poor were found as risk factors for having a newborn with hypospadias as confirmed with univariate and multivariate analyses at 95% CI. A cluster of hypospadias cases was detected in the north-central region of Puerto Rico with both GIS methods ($p < 0.05$). Conclusion: The clustering of hypospadias prevalence provides an opportunity to assess the underlying causes of the condition and their relationships with geographical space. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The study was approved by IRB at MSC-UPR.

A-011 Case-control Trio Study of Oral Clefts in Puerto Ricans: Novel Missense Mutation in IRF6

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Background & Objectives: Oral clefts are one of the most common birth defects with an etiology contributed by genetic and environmental factors. The objective of this study is to examine the association between selected candidate genes and oral cleft risk in Puerto Rican children. Methods: Case-control study design of case-control parent triads. Children, ages 0-14 years, with non-syndromic cleft lip with or without palate (CL/P) were recruited as cases. Controls were selected within same age group and without oral clefts/family history of oral clefts. Mothers were interviewed for maternal exposures and a blood sample (2-5 ml) from child/mother/father was collected. We carried out Sanger sequencing using DNA samples from the probands (n=111) to study selected genetic variants (IRF6, MAFB, ARHGAP29, PAX7, FOXE1, VAX1, MSX1, BMP4). Results: Three missense mutations were found in IRF6. Two were known mutations and one was unknown or novel glutamine to leucine missense mutation in IRF6 gene located in exon 9. IRF6 missense mutations are especially important because they are associated with the etiology of Van der Woude's syndrome (VWS), an autosomal dominant form of CL/P that can be a phenocopy of non-syndromic CL/P. This novel variant in IRF6 was present in a Puerto Rican and has not been previously reported in the dbSNP or the 1,000 genomes database. Conclusion: Our findings contribute to the list of mutations observed in IRF6 and support the hypothesis that various mutations contribute to VWS etiology including: missense, nonsense mutation, frame shift, deletions, or splice-site. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported by the National Institutes of Health (NIH), grants 3R37DE008559-23S1, R25RR017580, U54 RR026139, and 8U54MD 007587-03.

A-012 Epidemiologic Description of Bronchiolitis in Puerto Rico, 2009-2012

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Background & Objectives: Bronchiolitis is the leading cause of respiratory compromise and hospitalization in infants younger than 2 years of age, classifying it as a major cause of clinical morbidity and rising inpatient health care costs. However, data on the epidemiology of bronchiolitis in Puerto Rico is limited. The objective of this study is to describe the clinical and epidemiological characteristics of patients hospitalized with bronchiolitis in Puerto Rico during the years 2009 to 2012. Methods: Secondary analysis of aggregate data from a private health insurance of Puerto Rico of patients hospitalized due to bronchiolitis from 2009 to 2012 was conducted. Descriptive statistics for categorical and continuous variables and one-way ANOVA tests were done to evaluate for differences between the groups. Results: Of the 4,536 admissions from bronchiolitis 56% occurred in the 3 to 12 months ($p<0.0001$) age-group, with male predominance per episode in all the age ranges ($p<0.0001$). Most episodes occurred in the Metropolitan area [34.5%, $p<0.0001$], of which San Juan makes up 45% ($p<0.0001$) of episodes. Significant differences were found in the distribution by month with most cases occurring during the months of September to December ($p=0.0206$). Conclusion: Bronchiolitis admissions occurred more frequently in males, aged 3 to 12 months, between the months of September to December. Increased episodes in the Metropolitan area may be due to increased population. Locally acquired data helps us to describe factors associated with disease transmission, which may lead to improved clinical evaluation and management of bronchiolitis patients in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work is supported in part by the following Public Health Service Grants from The National Institute of Minority Health and Health Disparities, National Institutes of Health: R25MD007607 and S21MD001830, and does not necessarily represent the views of The National Institute of Health. The authors would like to thank Mr. Pablo Almodóvar for his assistance in the development of this study, and Mr. Carlos Morell and Ms. Orquídea Frías from the Department Statistic Research and Analysis at Triple-S Salud, BlueCross BlueShield of Puerto Rico.

A-013 Desarrollo, perspectivas y retos de la Escuela Nacional de Salud Pública de Cuba

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Background & Objectives: El sistema nacional de salud cubano ha sentado precedentes en la salud pública internacional por su carácter novedoso, futurista y por tener como principal estrategia la Atención Primaria de Salud. El propósito de esta investigación descriptiva es mostrar el desarrollo de la Escuela Nacional de Salud Pública de Cuba (ENSAP) en el contexto cubano e internacional. Methods: Esta institución tiene el encargo de la formación en salud pública: especialidades, maestrías y doctorado; el desarrollo de investigaciones en sistemas y servicios de salud; la preparación de directivos de organismos de la administración central del Estado y la prestación de servicios científico técnicos. Cuenta con un colectivo de reconocido prestigio internacional y alto nivel de excelencia. Results: Entre los principales resultados está tener 5 programas de maestrías acreditados de "Excelencia"; 1,576 egresados de maestrías, 61 del doctorado y 50 investigaciones en respuesta a problemas prioritarios de la salud pública cubana. Es institución auspiciadora de la Academia de Ciencias, miembro de la Red Andina y del Caribe para la Investigación en Políticas y Sistemas de Salud, de la Red Iberoamericana de Enfermería en Salud Infantil, del Consorcio Iberoamericano de Centros que forman profesionales en Prevención y Educación para la Salud y de la Oficina Regional para América Latina de la Unión Internacional de Promoción de Salud; ya recibido múltiples premios y reconocimientos. Conclusion: Las perspectivas de trabajo están encaminadas a formar recursos humanos de alta calificación y elevados valores para contribuir con la salud y el bienestar de la población cubana, latinoamericana y mundial.

A-014 Developing HIV prevention competencies among medical students through an integrated curriculum

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Background & Objectives: HIV continues to disproportionally affect Latino/Hispanic and Caribbean populations. While physicians' role continues to be highlighted in the process of increasing prevention practices and early engagement in care, there is very limited formal education on HIV in the general medical education. As a response, a curricular design is under development to impart a more complex set of skills and competencies on HIV prevention among students during their first four years of medical education. Methods: A Special HIV Prevention Curriculum Task-Force was created to design a coordinated multidisciplinary curriculum integrated across the four years of medical education. Novel didactic experiences with standardized patients, mobile handheld devices, instructional tools, simulated patients scenarios and vignettes are incorporated to achieve sustainable behavior changes among the students. Results: A four-module curricular model has been developed. Module 1 focuses on the first year students' knowledge of the HIV pandemic, and its impact in Latino/Hispanic including Puerto Rican as well as the Caribbean context. Module 2 focuses on eliminating attitudinal barriers, such as homophobia, stigma, fear, and addressing the role of the social determinants on HIV-related health disparities. Module 3 improves HIV risk assessment and history-taking skills and Module 4 provides

for a general evaluation of the contents covered. Conclusion: This novel curriculum tailored to medical students will impact future physicians during their early years of training. Further assessment should explore the effectiveness of the curriculum as well as its replicability. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported by the NIH Office of AIDS Research (OAR) CRB-AR500-S-10-00165.

A-015 Confiabilidad de los Reactivos de las Pruebas Desarrolladas en UPRB para Medir las Metas Educativas

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Background & Objectives: ¿Cuál es el nivel medio de dificultad de cada una de las pruebas desarrolladas y administradas por la OAAE-UPRB? y ¿Cuál es el índice de discriminación para los reactivos de cada una de las pruebas desarrolladas y administradas por la OAAE-UPRB? Methods: Para los reactivos de cada prueba y para cada momento que fue administrada se calcularon los dos índices de discriminación y el de dificultad. Cada reactivo se clasificó como fácil o difícil de acuerdo al índice de dificultad; pobre, o aceptable, o bueno, o excelentes o debe descartarse, a base del índice de discriminación 1; satisfactorio o no satisfactorio a base del índice de discriminación 2. Otros índices, el discriminatorio 2 y el alpha de Cronbach se evaluaron con el objetivo de apoyar este análisis. Además se investigó la relación entre el índice discriminatorio 1 y el de dificultad. Results: Cinco pruebas tienen un nivel de dificultad moderado. De estas cinco pruebas tres tienen una calidad discriminatoria de por lo menos buena. Las otras dos su calidad discriminatoria fue pobre o aceptable. El tipo de relación entre el Dc1 y el de dificultad, varía con el tiempo en que fue administrada. Solo dos pruebas en el T3 mostraron una relación negativa moderada. Conclusion: De tres pruebas no pueden realizarse recomendaciones específicas; otras tres pueden seguir administrándose con la evaluación de varios reactivos señalados. Una de ellas no debe seguir administrándose hasta que se haga un examen exhaustivo de la mayoría de sus reactivos. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Decanato de Asuntos Académicos-UPRB por financiar la investigación. Oficina de Avalúo del Aprendizaje Estudiantil-UPRB por proveer los resultados de las pruebas administradas.

A-016 Integration of the iPad to Enhance the Teaching-Learning Process: Results of Pilot Project Phase I

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Background & Objectives: The incorporation of innovative technology into the curricula was identified as a need in MSC-UPR. Forty-five faculty members participated in Phase I of a Pilot Project, which included five hands-on workshops on the use of the iPad and educational apps for this device. Upon training completion, each faculty member designed an instructional plan and presented an educational project that illustrated the iPad integration to one course. An assessment was performed with the objective to follow-up on the use of the iPad as an instructional tool. Methods: A pre- and post-test was administered to determine participants' use of the iPad as an educational tool. Instructional plans developed by participants were evaluated using a rubric on the following criteria: (a) pertinence of the selected educational apps for course objectives; (b) alignment among instructional objectives, activities, and assessment strategies; and (c) originality. Results: Pre-/post-test results evidenced an increase in: frequency of iPad weekly use; number of educational apps used in class; number of academic work-related activities in which iPad was used; and confidence in the use of this device in the teaching learning-process. The following criteria of instructional plans were evaluated as excellent or above average: pertinence of the selected apps to course objectives (96%); alignment among instructional objectives, activities, and assessment strategies (91%); and originality (84%). Conclusion: Faculty training is an effective strategy to enhance the use of the iPad as an educational tool in academia. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by the US Department of Education: Title V Grant Award Number# PO31SS100092

A-017 Identify the preferences of receiving health information from people who were in a waiting room

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Background & Objectives: The acquisition of knowledge is an element to develop a perception of risk to promote the protection of health, (Hernández et al 2006 E. Valdez.). An educational activity of 30 minutes to 60 minutes in a clinical setting sometime in the year is preferred by people who like to receive health information when in the presence of others (E. Gucciardi et al., 2007). This study identified preferences for health information of people attending clinics for sexually transmission diseases. Methods: A questionnaire was administered to 115 participants who were in the waiting room of a health clinic. They were asked about the type of method preferences, ways of receiving information and the place of receiving information, in addition to the demographic variables. Results: The methods of preference in receiving health information are video (66.1%) followed by short films (49.6%). Health fairs and health clinics are preferred for this type of information places. The topics of interest for future information are cholesterol and triglycerides (43.5%), overweight/obesity (35%) and diabetes (33%). The 80.9% reported no preference on the sex of the person who will provide health information. Conclusion: These results suggest that people interested in receiving information with visual methods and in places that are related to health. The information

collected in this questionnaire will be used to develop future educational activities. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): We thank and acknowledge all the staff of the Clinical Prevention and Treatment of Communicable Diseases, CPTET Region Mayagüez, Department of Health of Puerto Rico, for allowing this work in the waiting room of the health clinic.

A-018 Development of a Hispanic Health Sciences Virtual Library in UPR-MSC

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Background & Objectives: The Conrado F. Asenjo MSC-UPR Library developed the Hispanic Health Sciences Virtual Library as one the Title V Project components. The goals were to enhance the availability of online services, library resources, and promote the integration of information literacy skills and iPads in academia. Methods: A digital library, an online reference service, and a series of workshops on information skills and integration of iPads into the curricula were implemented. General priorities for digitization of audiovisual resources and the inventory and classification/organization system were established. Specialized equipment (Book Eye 4) and supplies were acquired. Results: Library services and resources outcomes were: 1,048 photographs organized andclassified (67 subjects and 399 sub-subjects);53 photos catalogued online; 532 videos digitized; Springer Collection of 774 books and the Digitalia collection of 97 titles in Spanish acquired;1,570 answered questions and 294 chat sessions in virtual reference service; and 22,413 searches in 7,447 sessions on Scopus database. Bibliographic records for e-books titles were also incorporated in the library's online catalog. Online reference service was made accessible to UPR System. Workshops outcomes were: 16 professors and 12 students trained in the integration of iPad to curricula. Conclusion: The Hispanic Health Sciences Virtual Library increased accessibility to online information resources to UPR System. Additional workshops on the use of iPads need to be offered to academic community. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by the US Department of Education: Title V Grant Award Number# PO31SS100092

A-019 Drinking safe levels of Waterborne Copper induce Behavioral and Neuronal Changes in Zebrafish Larvae

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Background & Objectives: A growing environmental concern and a major planetary challenge are maintenance and preservation of clean water supplies especially for future generations. In order to define safety levels for a given waterborne contaminant, regulatory bodies need strong reproducible scientific data. We undertook to establish a cheap and standardized behavioral assay using zebrafish larvae, a small aquatic vertebrate, which would allow for rapid and quantifiable measurements of deleterious effects of any putative waterborne contaminants. As prove of principle we tested copper, which is a highly probable contaminant in Puerto Rican tap water as most of the plumbing system is still using copper piping. Methods: We used a range of concentrations centered on the maximum contaminant level goal (MCLG) as established by the American Environment Protection Agency (EPA) for copper, which we name C1x. Using a state of the art recording device we monitored and recorded in parallel the swimming behavior (speed, direction, place preference, rhythm changes) of untreated and copper treated larvae in a light/dark switch assay. Results: Untreated larvae exhibited a strong and highly reproducible behavioral pattern, which was altered by Copper in a concentration dependent manner. Furthermore, we found that an external sensory structure, which is called the lateral line, was mostly destroyed. Conclusion: Therefore, we have established a sensitive behavioral assay in a genetic traceable model, which will allow linking the observed behavioral and anatomical changes to alteration in gene regulation. In addition, more putative contaminants will be tested in a systematic manner. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research supported by the NIH-RCMI Grant # G12RR03051, National Institute of Deafness and other communication disorders K99/ R00 Grant #4 R00 DC009443-02, NSF-CREST Grant (#HRD-1137725) Puerto Rico Center for Environmental Neuroscience (PRCEN), and Puerto-Rican Science Trust.

A-020 Insights into the bHLH Transcription Factor TWIST2 and the Impact of Q119X Mutant in Puerto Ricans

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Background and Objectives: TWIST2 is a member of the transcription factor family known as the basic Helix Loop Helix. TWIST2 binds DNA as dimers to consensus sequence called E – boxes. Mutations in TWIST2 cause a rare genetic disorder called Setleis Syndrome. Setleis syndrome was first described in Puerto Rican patients from San Sebastian and Aguadilla that harbor a truncated form of TWIST2, named Q119X. To this date, no structural or functional assays have been published using recombinant TWIST2 and the frequency of the mutation that cause Setleis in Puerto Ricans is unknown. Methods: First, we performed a bioinformatics analysis including multiple sequence alignments, phylogenetic study, protein motifs and a 3D structural prediction of TWIST2 and Q119X. In addition, the His tagged TWIST2 cDNA was cloned into the pQET7 vector and expressed in BL21 pLysS competent cells. The protein was

purified under native conditions with a two-step purification strategy consisting of Affinity and Ion Exchange Chromatography. Also, a frequency study of the Q119X mutation was performed in 202 Puerto Rican samples using Taqman genotyping assay. Results: A band of the expected size of TWIST2 was observed in SDS-PAGE. Western Blot analysis and Mass Spectrometry validated this finding. TWIST2 functionality was demonstrated by Electrophoretic Mobility Shift Assay with a known E-box probe. Furthermore, the minor allele frequency for Q119X was 1%. Conclusion: Obtaining recombinant TWIST2 protein opens a plethora of possibilities for structural to functional assays. These assays will expand the knowledge of this transcription factor and its implications in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NIH grants (2G12-RR003051), (8G12-MD007600) and (R25GM061838).

A-021 Optogenetic silencing of prelimbic inputs to paraventricular thalamus impairs fear retrieval

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Background & Objectives: We recently reported that the dorsal midline thalamus (dMT) is necessary for retrieval of a well-consolidated auditory fear memory. Pharmacological inactivation of dMT, including the paraventricular thalamus (PV) and the mediodorsal thalamus (MD), impaired fear retrieval when performed 24 hours after conditioning, but not 8h after. Previously, we reported that tone-induced Fos expression in PV, but not in MD, was increased 7d after conditioning, but not 6h after, suggesting that PV is gradually recruited into the fear circuit. The prelimbic prefrontal cortex (PL), a region essential for fear retrieval, sends dense projections to PV. Unlike PV, inactivation of PL at 6h and 7d reduced fear, and Fos in PL was increased at both timepoints. Thus, PL projections to PV may be necessary for recruiting PV into the fear circuit. Methods: We tested this hypothesis by using an optogenetic approach to specifically inactivate PL somata or their terminals in PV at 6h and 7d after conditioning. Rats were infused in PL with an adeno-associated virus encoding for a light sensitive protein (halorhodopsin) and a promoter specific to glutamatergic neurons. Eight weeks later, rats were conditioned to a tone and then tested for fear retrieval. Results: Laser illumination of PL somata during tone presentation significantly impaired freezing at both 6h and 7d. In contrast, illumination of PL efferents in PV significantly impaired fear retrieval at 7d, but not at 6h. Conclusion: Taken together, these results suggest that a time-dependent recruitment of PL to PV synapses is necessary for retrieval of consolidated fear memory. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the National Institutes of Health grants R01-MH081975 and R01-MH058883 and the University of Puerto Rico President's Office to GJQ. We thank Carlos Rodriguez and Zarcaly Quintero for technical assistance. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. None of the authors have any financial conflicts of interest to disclose.

A-022 Una mirada al sueño desde la perspectiva de mujeres con Fibromialgia: Creencias y calidad del sueño

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Background & Objectives: La Fibromialgia (FM) está caracterizada por dolor, fatiga, disfunción cognoscitiva, trastornos afectivos y del sueño. El sueño y su rol en la exacerbación, desarrollo o mejora de los síntomas de la FM tienen un impacto en la vida diaria. El propósito del estudio fue describir los problemas del sueño en mujeres con FM en Puerto Rico y cómo estos afectan la ejecución ocupacional. Además, determinar las creencias que poseen sobre el sueño. Methods: El diseño fue descriptivo exploratorio. El Cuestionario Revisado sobre los Efectos de la Fibromialgia, versión de Puerto Rico, el Cuestionario de Calidad de Sueño de la Universidad de Pittsburgh y el Cuestionario sobre las Creencias y Actitudes acerca del Sueño fueron ofrecidos a 30 mujeres con FM de 30 a 69 años. Los datos cuantitativos fueron analizados mediante la estadística descriptiva inferencial. Results: La puntuación promedio en la FIQ-PR fue de 69.0 % ± 16.7, lo cual mostró un impacto moderado. Un 100% de las mujeres mostró mala calidad del sueño. El análisis de ANOVA reveló una diferencia significativa entre los niveles de impacto de la FM y la calidad del sueño (F=4.14, P=0.0275). También, se observó una correlación moderada significativa proporcional entre el impacto de la FM y la calidad del sueño (r= 0.42 p= 0.022). Conclusion: Las mujeres con FM presentan problemas con la calidad del sueño que afectan significativamente su funcionamiento. Las creencias disfuncionales sobre el sueño están relacionadas a los síntomas de la FM. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Este estudio fue aprobado por UPR-RCM IRB.

A-023 Mammalian Target of Rapamycin (mTOR) Signaling Regulation by Grape Polyphenols in Breast Cancer

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Background and Objectives: The Akt/adenosine monophosphate protein kinase (AMPK)/mammalian target of rapamycin (mTOR) pathway has emerged as a critical signaling nexus for regulating cellular metabolism, energy homeostasis, and cell growth; and dysregulation of this pathway contributes to the development of cancer. We previously reported that a combination of grape polyphenols, (resveratrol, quercetin and catechin: RQC) at equimolar concentrations, inhibits breast

cancer (BC) growth and metastasis in nude mice. The current objective is to investigate a role for RQC in BC therapy via inhibition of the Akt/AMPK/mTOR pathway. We found that in metastatic BC cells, RQC at 5uM each inhibits Akt and mTOR activities and activates AMPK, an endogenous inhibitor of mTOR. Methods: To determine the contribution of individual polyphenols to the effect of combined RQC on mTOR signaling, metastatic BC cells were treated with RQC individually and in combination, at various concentrations. The activities (phosphorylation) of AMPK, Akt, and the mTOR downstream effectors p70S6 kinase (p70S6K) and 4E binding protein (4EBP1) were determined by Western blot. Results: show that at ≥5uM, individual compounds downregulated Akt activity to a level similar to combined RQC at 5uM each, indicating a single mechanism of action. Quercetin at 15uM was the most efficient compound at both AMPK activation and mTOR inhibition. Therefore, regulation of cancer cell metabolism by quercetin has the potential to block BC cell growth and migration, and thus, metastatic progression. Conclusions: quercetin is a viable candidate for future development as an anti BC therapeutic. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the Department of Defense/Breast Cancer Research Program award W81XWH-07-1-0330 to SD.

A-024 The Role of PhoP-PhoQ in the Regulation of Salmonella Intestinal Invasion and Pathogenicity

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Background & Objectives: Salmonella is a major health problem causing an estimated 17 million cases of disease worldwide per year, resulting in 600,000 deaths. Salmonella uses the Salmonella pathogenicity island 1 (SPI1) type III secretion system (T3SS) to infect the intestinal epithelial cells. The SPI1 T3SS is regulated by the HilA protein which is encoded by the hilA gene. Once invasion is complete, the two-component regulatory system PhoP-PhoQ turns off the SPI1 T3SS. The mechanism by which PhoP-PhoQ does this is unknown. The goal of this research was to discover this mechanism of PhoP-PhoQ binding. Methods: 1. To understand the mechanism, it was performed a deletion and mutational analysis of the hilA promoter and 5' untranslated region to determine which regions of the hilA gene are required for PhoP-PhoQ mediated regulation. 2. A potential PhoP binding site (phobox 2) was located upstream the hilA start of transcription. The phobox 2 was mutated and tested to confirm if it is required for PhoP-PhoQ regulation of hilA transcription. Results: The hilA gene deletion did not affect the PhoP-PhoQ regulation. It is observe PhoP-PhoQ-mediated regulation was not affected by deletion analysis of the 5' untraslated region after start of transcription. Conclusion: The hilA gene is not required for PhoP-PhoQ-mediated regulation. The 5' unstranslarted region after start of transcription is non essential for regulation. This suggests that the regulation is at the level of transcription initiation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): SROP-UIUC, Dr. James M. Slauch, Dr. Yekaterina A. Golubeva, Slauch Laboratory Summer Research Opportunity Program-UIUC, National Science Foundation, National Institutes of Health, The Graduate College at Illinois at the University of Urbana-Champaign

A-025 Riesgo, vulnerabilidad y capacidad de acogida/respuesta del Estado ante un desastre natural

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Background & Objectives: Los desastres naturales han sido causantes de catástrofes en la historia de Puerto Rico teniendo impacto en la salud, la economía y la infraestructura. No obstante un aspecto estratégico y clave en la preparación previa a los desastres es el establecimiento de la capacidad de refugios y los recursos necesarios que permitan a las operaciones de socorro eficientes. Identificar poblaciones expuestas a distintos riesgos físicos en la isla, caracterizar su vulnerabilidad; y evaluar la capacidad de acogida/respuesta que presentan los refugios en caso de emergencia. Methods: Utilizando los Sistemas de Información Geográfica, se identificó la población más vulnerable a riesgos físicos. Se utilizaron datos demográficos del Censo 2010, capas de información de inundación y deslizamiento de FEMA y la capacidad de refugios que ofrece el Departamento de Vivienda certificados por FEMA en 2013. Results: Los resultados revelan que el 45% de la población en Puerto Rico vive en zonas inundables y el 6% son niños menores de 5 años. Además, el 10% habita en áreas propensas a deslizamientos. Mientras, los refugios tienen capacidad para acoger 58,079 personas y en casos extremos 116,158. Esto representa 7% de la población en zonas inundables y 35% para deslizamiento. Conclusion: Estos resultados ayudan a conocer la capacidad de respuesta que tiene el Estado en caso de emergencia y ofrecer refugio a la población expuesta. De esta manera, se identifican municipios que tienen suficiente capacidad de acogida y aquellos que carecen de la misma. Esta información sienta las bases para la Preparación y Respuesta en caso de Emergencia. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Reconocimientos: Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Subvención: Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of

Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383. IRB: Este proyecto fue aprobado por el Comité de Revisión Institucional de la Universidad de Puerto Rico, Recinto de Ciencias Médicas, bajo el número de protocolo A6640113 el 5 de febrero de 2013.

A-026 Rethinking Informed Consent from the Ethnography of Drug Use

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Background & Objectives: The principle of informed consent sets the basis to negotiate the exchange of information to enable human subjects to make conscious decisions about research participation. The naturalistic character of ethnography supposes a different set of conditions in which informed consent is traditionally operationalized. In ethnographic research, disclosing information about the goals of research could be difficult to achieve, especially if the consent requires the use of written forms. Obtaining any information in a context that is dominated by illegal and stigmatized activities may violate the secrecy and anonymity required to operate in the drug scene. Objectives: This paper focus on exploring the practicality of informed consent within ethnographic research on drug use from both a methodological and ethical standpoint. Methods: When conducting ethnographic research with drug users, I applied an adaptive and recursive method for delivering information not only to individuals but also to drug users' networks to adjust the process of obtaining consent to the evolution of field research and to the contextual conditions of the drug scene. Results: The contextual approach turned informed consent into a process rather than a single event empowering study subjects by providing more possibilities to understand what participating in a study means. Conclusion: I propose contextualizing informed consent, that is, situating the ethical considerations concerning research, especially autonomy, not only within the individual circumstances but also the cultural and socioeconomic context of research subjects. I propose to realign the process of consenting to other epistemologies, especially those outside the clinical realm.

A-027 Dementia Prevention: The Next Public Health Priority in Puerto Rico

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Background & Objectives: In 2011 there were 35.6 million cases of dementia worldwide.and it is estimated that this number will double every 20 years. The annual cost of this disease is estimated at $604B. A recent study showed that Puerto Rican (PR) veterans had between 45% and 54% greater probability of being diagnosed with dementia than veterans in the rest of the United States (US). Given the current absence of effective medications for the treatment of dementia, preventive strategies are urgently needed. Together, up to half of dementia cases are potentially attributable to modifiable vascular, social, cognitive and lifestyle factors. This study sought to: 1) estimate and compare the prevalence of risk factors for dementia in the PR and US populations; and 2) suggest optimum points for interventions aimed at the prevention of dementia. Methods: We used Behavioral Risk Factors Surveillance System (BRFSS) data to estimate the prevalence of the risk factors previously mentioned and analyze longitudinal patterns. To compare prevalences we used the chi-square statistic to determine significance ($p < .05$). Results: In all risk factors (except smoking), prevalence among the PR population was significantly higher than in the US. Longitudinal patterns show significant recent increases in the prevalence of most of these risk factors. There is an ideal window of opportunity for prevention interventions with people around 45 years of age. Conclusion: Decisive Public Health initiatives aimed towards the prevention of dementia are urgently needed to curb the financial and non-financial costs of dementia in PR. Recommendations for short and medium-term actions are offered.

A-028 Percepción materna del parto y apego temprano con su recién nacido en el postparto temprano

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Background & Objectives: El apego temprano ininterrumpido con la madre después del nacimiento es necesario y promueve la sobrevivencia para el infante, además de ser un precursor en relaciones seguras y empáticas en la edad adulta (Fonagy, 2001). La experiencia del parto se considera uno de los factores influyentes en el apego. Objetivos: (1) Examinar la percepción materna de la experiencia del parto. (2) Analizar el apego temprano entre la madre y el recién nacido. (3) Determinar la relación entre la percepción materna del parto con el apego temprano. Methods: Diseño cuantitativo correlacional. El apego temprano se midió con la Escala de Apego Materno Infantil y la percepción materna de la experiencia del parto con la Escala sobre la Percepción del Nacimiento. Se analizaron los datos utilizando pruebas de estadística descriptivas y el coeficiente de correlación de Spearman rho. Results: Un 90% de la población (n=30) reportó una percepción positiva de la experiencia del parto y un apego temprano positivo hacia su bebé. Se reportó un rho=0.130, p=0.494, demostrando que sólo el 2% (0.1302=0.016) del apego temprano se explica con la percepción materna de la experiencia del parto. Conclusion: Estos resultados, aunque no estadísticamente significativos, son clínicamente relevantes ya que sugieren que la percepción materna del parto está asociada al apego temprano con su bebé. Además sugieren que existen otros factores que influyen el apego temprano como: intervenciones de los profesionales de salud, preparación prenatal, apoyo conyugal, entre otros. Se recomiendan estudios longitudinales del apego y una muestra mayor. Acknowledgements (Funding Sources,

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A-029 Invisibility: The art of avoiding working with violence among vulnerable populations in the Mass Media

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Background & Objectives: The theory of Communication pose that "senders" encode information that a "receiver" decodes for building their realities acting upon it. Although, violence among vulnerable populations (VP) had been documented in scientific research, the encode information being receive, and from which realities are being built in society are scare. Our aim is to compare the violence problem among some of the general (GP) and VP as documented by online newspapers. Methods: Newspapers from 7 different Hispanic countries were reviewed from December 2011 to June 2012. Results: The total news reviewed were 5,663, out of these only 265 (~5%) worked with VP's. The quantity of news by country showed significant differences when comparing GP to the VP. For instance after adjusting for VP Puerto Rico and Dominican Republic had lower rates conversely to Argentina and Bolivia who had higher violence rates. The mean age and sex of the victims was similar; however, females VP suffering violence were significantly younger ($p = 0.01$). In addition, 53.78% of the events were perpetrated by two or more persons for VP different from GP. The most commonly type of violence in VP documented was physical followed by social and dead of victims were reported in half the cases. News reported higher rates of alcohol and drug use as well as mental problems in VP in comparison to GP. Conclusion: In conclusion, VP studied seems to be underrepresented, encode message makes VP invisible and stigmatized altering the perception of the health problem and initiatives to work their welfare.

A-030 Estrategias para transformar el contexto del consumo de alcohol por menores de edad en PR

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Background & Objectives: El alcohol es la sustancia de mayor consumo por los menores de edad en Puerto Rico. Los datos reflejan que sobre el 70% de los jóvenes consumen alcohol antes de terminar la escuela. Es necesario analizar la problemática desde la perspectiva ecológica para tomar en cuenta los diversos factores que modifican el contexto de consumo de alcohol. Las políticas públicas y las normas sociales son elementos fundamentales para fomentar o limitar el acceso de los jóvenes al alcohol. En este trabajo se presentarán los esfuerzos realizados a través del proyecto PR Modelo de Prevención Estratégica para transformar el entorno del consumo de alcohol en los jóvenes. Methods: Luego de la recopilación de información sobre necesidades y recursos y el diseño de planes estratégicos se seleccionaron como estrategias para atender la problemática: fomentar la aplicación visible de las leyes que regulan la venta de alcohol (a nivel municipal); y diseñar campañas de mercadeo social dirigidas a cambiar normas y creencias referentes al consumo de alcohol. Results: A través de esta iniciativa se ha impactado a jóvenes, comerciantes, líderes comunitarios, funcionarios públicos y familias en 10 municipios de Puerto Rico. Conclusion: El fin de estas estrategias es trasladar el conocimiento de las investigaciones relacionadas con los factores que promueven o limitan el consumo de alcohol en los jóvenes. Las actividades buscan trascender las intervenciones tradicionales con los individuos, para modificar el contexto donde se promueve el consumo de alcohol en los jóvenes. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Estas estrategias están siendo implementadas por las siguientes organizaciones: Alianza para un PR sin Drogas, Boys and Girls Club, Fundación Chana y Samuel Levis, Hogares Teresa Toda, Iniciativa Comunitaria, Jóvenes de PR en Riesgo, Neomed Center, Oficina para la Promoción y el Desarrollo Humano, Programa del Adolescente de Naranjito, Servicios de Extensión Agrícola- UPR Mayagüez, Subvencionadas por ASSMCA a través del Strategic Prevention Framework, State Incentive Grant, con la asesoría científica de la División de Servicios Comunitarios del Centro de Investigación y Evaluación Sociomédica del Recinto de Ciencias Médicas.

A-031 Mercadeo Social: Experiencias en la prevención del consumo de alcohol por menores de edad en PR

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Background & Objectives: En PR, el 58% de los jóvenes inicia el consumo de alcohol antes de los 15 años. Múltiples factores inciden en esta práctica, entre estos: influencia de la familia, accesibilidad comercial y aplicación de leyes. Un estudio realizado en el 2012 evidenció que menos del 10% de los vendedores de alcohol solicitaron identificación a jóvenes que aparentan ser menores de edad; y el 91% de los jóvenes reportó como uno de los principales factores protectivos, la actitud desfavorable de parte de su familia hacia el consumo de sustancias. En este trabajo se presentará el proceso de diseño, los productos de las diez campañas y la experiencia de traducir los resultados de los estudios al diseño e implementación en diez comunidades de PR. Además, se relacionará el Mercadeo Social con otras estrategias que pretenden transformar el entorno que promueve o restringe el consumo de alcohol entre jóvenes. Methods: Como parte de los esfuerzos del Proyecto

PR Modelo de Prevención Estratégica, diez organizaciones comunitarias diseñaron campañas de Mercadeo Social dirigidas a atender esta problemática. Se tomaron en cuenta los factores mencionados, por lo que se seleccionaron a padres y comerciantes como audiencias meta. Para diseñar las campañas se realizaron estudios de características, valores e intereses generales, así como creencias y conocimiento específico en torno al consumo de alcohol entre menores. Results: La información recopilada se interpretó para el diseño de materiales educativos dirigidos a estas audiencias. Conclusion: Los padres y los comerciantes son actores medulares en la prevención del consumo de alcohol en menores. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Estas estrategias están siendo implementadas por las siguientes organizaciones: Alianza para un PR sin Drogas, Boys and Girls Club, Fundación Chana y Samuel Levis, Hogares Teresa Toda, Iniciativa Comunitaria, Jóvenes de PR en Riesgo, Neomed Center, Oficina para la Promoción y el Desarrollo Humano, Programa del Adolescente de Naranjito, Servicios de Extensión Agrícola-UPR Mayagüez, Subvencionadas por ASSMCA a través del Strategic Prevention Framework, State Incentive Grant, con la asesoría científica de la División de Servicios Comunitarios del Centro de Investigación y Evaluación

A-032 Trabajando con jóvenes y familias para prevenir el consumo de alcohol por menores de edad en PR

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Background & Objectives: En la más reciente Consulta Juvenil, realizada a jóvenes de escuelas intermedias y superiores en Puerto Rico, se reportó que un 24% de los encuestados reconoce que en su familia hay problemas con el alcohol, un 51% identificó que sus pares consumen alcohol y cerca de un 43% mencionó que en su comunidad existe fácil acceso a esta sustancia. El presente trabajo tiene como objetivo resaltar la importancia del uso de las prácticas basadas en evidencia, culturalmente adaptadas a Puerto Rico, para prevenir el inicio prematuro del consumo de alcohol. Methods: A través del proyecto PR Modelo de Prevención Estratégica se han implementado 5 intervenciones basadas en evidencia en 8 comunidades, dirigidas a aumentar el conocimiento, reforzar las destrezas y cambiar las actitudes de los jóvenes, y en algunos casos sus familias, para prevenir el consumo de alcohol. Results: A través de las intervenciones se ha evidenciado cómo los jóvenes crean conciencia de la influencia de los medios de comunicación, los daños al cerebro, y otros factores que fomentan el consumo de alcohol. De igual forma, las familias participantes de algunas intervenciones fortalecen sus vínculos, mejoran su comunicación y se hacen conscientes de su rol en la prevención del consumo de alcohol en jóvenes. Conclusion: Las estadísticas evidencian la necesidad de atender el consumo de alcohol en menores de edad a través de diferentes estrategias, incluyendo las dirigidas al individuo. Éstas se enfocan en cambiar la conducta y la relación entre los jóvenes y las consecuencias del consumo de alcohol. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Estas estrategias están siendo implementadas por las siguientes organizaciones: Boys and Girls Club, Fundación Chana y Samuel Levis, Hogares Teresa Toda, Iniciativa Comunitaria, Jóvenes de PR en Riesgo, Neomed Center, Programa del Adolescente de Naranjito, Servicios de Extensión Agrícola- UPR Mayagüez, Subvencionadas por ASSMCA a través del Strategic Prevention Framework, State Incentive Grant, con la asesoría científica de la División de Servicios Comunitarios del Centro de Investigación y Evaluación Sociomédica del Recinto de Ciencias Médicas.

A-033 Diseño por competencias del Diplomado y la Especialidad de Enfermería en Salud Mental en Cuba

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Background & Objectives: Las tendencias actuales del diseño curricular distinguen el de competencias, por tal, los programas de postgrado de Enfermería requieren atemperarse a estos estilos sobre todo en áreas que constituyen problemas de salud como la Salud Mental. Desde los 90 en Cuba se ha ido reorientando la atención psiquiátrica de instituciones hospitalarias hacia la comunidad. Ha sido necesario por ello realizar programas de estudio que permitan ejercer una práctica más integral. Se realizó una investigación cualitativa con el objetivo de diseñar programas de postgrado por competencias para profesionales de Enfermería en Salud Mental. Methods: Se aplicaron encuestas a través de un muestreo probabilístico a los enfermeros que trabajan la salud mental, directivos, profesores e investigadores del sistema de salud para conocer las necesidades de formación. En una primera etapa se realizaron cuatro talleres de trabajo con el equipo de investigación; en la segunda se diseñaron dos programas docentes que fueron validados por expertos. Results: Los resultados son el diseño por competencias de un Diplomado y la Especialidad de Enfermería en Salud Mental; en su programa se realizó una parametrización explícita entre funciones, competencias y contenidos. Se diseñó un banco de preguntas para evaluar las competencias generales y por años en los alumnos. De conjunto con la Dirección Nacional de Enfermería se seleccionaron los escenarios docentes. Conclusion: Se concluye con el diseño de dos programas de Enfermería en Salud Mental por competencias, estableciendo por primera vez la relación de habilidades, contenidos y competencias que sirvió de base para el diseño de los instrumentos de evaluación.

A-034 Cellular Response on Growth Factor and Stiffness Gradients on Polyelectrolyte Multilayers

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Background & Objectives: The native microenvironment of cells contains physical and biochemical cues that control cellular processes, which ultimately dictate cell fate. Both biochemical and physical cues vary significantly through the dimensions of the microenvironment presenting themselves as gradients. Thus, engineering of biomaterials that exhibit a gradient in physical or biochemical cues would be beneficial to further the understanding of cell-material interactions. In this work, we engineered biomimetic films presenting a gradient in stiffness and of matrix-bound growth factors to investigate 1) the effect of film stiffness on cell adhesion and 2) the effect of matrix bound chemokines on cell differentiation. Methods: Polyelctrolyte multilayers were constructed via the layer-by-layer method. Gradients were generated using microfluidics. A gradient of water-soluble carbodiimide as cross-linking agent was used to generate the stiffness gradient, confirmed using atomic force microscopy. A matrix-bound gradient of the bone morphonogenic protein 2 (BMP-2) was generated to investigate muscle cell trans-differentiation in bone cells. Results: Pre-osteoblastic cells seeded on the stiffness gradients adhered better and spread more in regions of high stiffness, while in low stiffness regions they behave poorly with regards to adhesion and spreading. Muscle cells responded to the BMP-2 gradients by expressing SMAD and alkaline phosphatase in a spatially controlled manner. Moreover, on regions of low BMP-2 concentration, a dose dependent expression of myoblastic markers (troponin T) was observed. Conclusion: This technology allows for determining quickly and efficiently the optimal biochemical and physical cues necessary for specific cellular response, whilst furthering the knowledge of cell/material interactions in a mimetic niche.

A-035 Determination of Rac Inhibitor Ehop-016 in Mouse Plasma by Ultra-Performance Liquid Chromatography T

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Background & Objectives: The Rho GTPase Rac is an important regulator of cancer cell migration and cell invasion; processes required for metastatic progression. We previously characterized the small molecule Ehop-016 as a novel Rac inhibitor in metastatic breast cancer cells in-vitro (Montalvo-Ortiz, et al., 2012). Methods: To investigate the efficacy of EHop-016 in-vivo, we used a mouse model of experimental metastasis, where mice with MDA-MB-435 mammary fat pad tumors were treated with intraperitoneal EHop-016. At 25 and 40 mg/kg BW, EHop-016 significantly inhibited mammary tumor growth and metastasis. In order to characterize the pharmacokinetics of Ehop-016, we developed a rapid and sensitive method for the quantitation of Ehop-016 in mouse plasma by ultra high performance liquid chromatography coupled with electrospray ionization tandem mass spectrometry (UPLC/MS/MS). Plasma samples were pretreated with acetonitrile (ACN) to extract matrix proteins prior to injection into UPLC/MS/MS. Separation was carried out on an Agilent Poroshell 120 EC-C18 column (3.0 x 50) mm using a mobile phase of 50% ACN/50% methanol/0.1% formic acid and 1mM ammonium fluoride. Results: Ehop-016 was identified from its accurate mass and retention times from the acquired full-scan chromatogram and quantified by its peak areas. Conclusion: The linear range for the determination of analytes was 5 – 1000 ng/mL. Ehop-016 was quantified in samples from the in-vivo study using this method. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by grants RISE- R25GM061838 (THB), DoD/BCRP W81XWH-07-1-0330 and NIH/NMI-HD U54MD008149 RTRN (SD).

A-036 Cellular effects of caffeine on the mouse spinal locomotor network

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Background & Objectives: Caffeine is a strong psycho-stimulant drug socially consumed worldwide and like cocaine and amphetamines it can modulate behaviors such as vigilance, attention and locomotor activity. Caffeine's major neuronal action is as a non-selective blocker of adenosine receptors. Most studies looking at caffeine's mechanism are based on systemic administration of caffeine. However in the field there are contradictory results of caffeine's true mechanism which brings us to the importance of understanding how caffeine modulates a single cellular network. The effects of caffeine at the level of the spinal central pattern generator (CPG) network for locomotion are lacking. Methods: We began assessing the effects of caffeine to spinal CPG locomotor function using the neonatal mouse isolated spinal cord preparation. A locomotor rhythm was obtained by adding a combination of serotonin, N-methyl-D-Aspartate and dopamine to the recording chamber and an alternating locomotor-like rhythm was confirmed by recording motor activity using suction electrodes on lumbar ventral roots. Results: Addition of caffeine to the superfusate significantly decreased the step cycle period of the ongoing locomotor-like rhythm, while decreasing burst duration in most preparations in a reversible manner. The application of an A1 but not of an A2a adenosine receptor antagonist mimicked the effects produced by caffeine of accelerating the locomotor rhythm supporting the role of A1 adenosine receptors as the main target for the stimulant effects of caffeine. Conclusion: These results support the stimulant effects of caffeine onto the spinal network controlling hindlimb locomotion, acting primarily through the inhibition of A1 adenosine receptors. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by Craig Nielsen Foundation grant 124554, RCMI-UPR-MSC grant G12RR03051 and MBRS-RISE grant R25GM061838 to J Acevedo.

A-037 Plasmodium berghei Glutathione S-transferase: Validated Target for Novel Antimalarial Development

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Background & Objectives: Multidrug resistance to antimalarial drugs is an increasing problem hence; it is of uttermost importance to understand parasite development and to identify drug targets. Glutathione S-transferase (GST) is a detoxification enzyme that has been associated with drug resistance and proposed as a potential drug target in Plasmodium. Our hypothesis is that GST is crucial for parasite development and represents a potential target for the development of novel antimalarials. Methods: This study aims to elucidate the biological role of pbGST using a combination of reverse genetics and bioinformatics approaches. Results: To assess the role of pbgst, the gene was sequenced and partially characterized. Multiple attempts to disrupt the pbgst gene were unsuccessful indicating that GST is essential for P. berghei erythrocytic stages and consequently a valid drug target. A structural model of the pbGST tertiary structure was generated by comparative modeling and used in a virtual library screening of the ChEMBL-Neglected Tropical Disease archive. The in silico screening reveals 21 lead-compounds with potential as pbGST inhibitors. An in vitro drug luminescence assay (Lin et al., 2013) was standardized which will be further used to test the identified compounds. Further studies will include testing the lead-compounds for GST activity and eventually in vivo pre-clinical testing. Conclusion: This work enhances our understanding on the role of Plasmodium GST and will be important for the discovery of new antimalarial drugs. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was partially funded through: GM08224, 2G12-RR003051, 8G12MD007600, ASM Watkins Fellowship (EECL), R25-GM061838 (EECL), The Bloomberg Family Foundation (JB) and NSF predoctoral fellowship (DDCL).

A-038 Valerenic acid and Valerian extract Anticonvulsant effects: Interactions with Glutamate receptors

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Background & Objectives: Valerenic acid (VA), is credited with the anxiolytic, sedative and anticonvulsant properties attributed to Valeriana officinalis extracts. Our aim was to examine VA possible interactions with glutamate receptors and its anticonvulsant properties. Methods: Zebrafish were exposed to selective metabotropic GluR (mGluR) or ionotropic GluR antagonists for one hour and then to VA (37 µg/ml) 3 minutes or one hour to Valeriana officinalis ethanolic extracts (Val, 1mg/ml). Seizures were induced with Pentylenetetrazole (PTZ, 3 mg/ml) dissolved in aquarium water. The latency period was defined from the initial exposure to PTZ until the wild jumping immediately followed by the loss of posture. Results: VA and Val increased significantly the seizure latency in zebrafish. Metabotropic GluR groups I and II antagonists tend to increase the anticonvulsant effects of VA. However this tendency is not observed with Val. In contrast, AMPA (iGluR) antagonists reduce the anticonvulsant effect of Valerian, but this interaction is not observed with VA. Conclusion: Valerenic Acid and Valerian extract interact with different glutamatergic receptors. It is possible that compounds other than Valerenic acid also contribute to Valerian's anticonvulsant effects. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Partially supported by the NIH-RCMI Grant # G12RR03051. Approved by University of Puerto Rico-Medical Sciences Campus, UPR, Institutional Animal Care and Use Committee on June 1, 2010 (Proposal ID 3180110).

A-039 Community Pharmacy Centered Rural Mobile Diabetic Retinopathy Screening Service

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Background & Objectives: Diabetic retinopathy (DR) is a leading cause of blindness due to changes in retinal blood vessels resulting from chronic hyperglycemia. The purpose of this study was to demonstrate that pharmacist interventions at the community pharmacy contribute to the diagnosis and knowledge of people with undiagnosed DR. Awareness regarding an annual eye exam to early identify retinal changes to prevent DR and avoid progression to severe vision loss is expected. Methods: A descriptive study was performed at six community pharmacies around Puerto Rico. Demographic data and medication history was collected after a DR educational session. Retinal digital images taken by a pharmacist using the transportable i-Optic Easy Scan Camera that uses a Scanning Laser Ophthalmoscope technique were sent electronically to the ophthalmologist for appropriate recommendations. Results were sent to participants' primary physician. Results: One hundred forty-eighth patients were educated about DR. Their mean age was 58.2 years, and 59% were females. One hundred one patients had a new diagnosis, 38 presenting diabetic retinopathy, and 3 presenting proliferative diabetic retinopathy. Conclusion: This study demonstrates that community pharmacists play an important role in the education, prevention, and early detection of diabetes related complications. A mobile service is an alternative to provide education and access to an annual eye exam to people with diabetes. The community pharmacy is a great scenario to inform, educate, and prevent the DR development or progression to vision loss in people who have poor glucose control. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Novo Nordisk supported the educational portion of this project.

A-040 Enhancing the Chemosensitivity of Endometrial and Ovarian Cancer Using an Adenosine Receptor Agonist

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Background & Objectives: Endometrial and ovarian cancer are the most common and most deadly gynecological malignancies in the US, respectively. Despite the advancement of single-agent and combined-agent chemotherapy regimens for these cancers, most tumors eventually develop resistance. Therefore, strategies to enhance the sensitivity of tumor cells to common chemotherapies are needed. Adenosine is known for its tissue-protective role in numerous organ systems. Recently, our lab has shown that adenosine's activation of the adenosine A1 receptor (ADORA1) promotes the integrity of epithelial cells in the endometrium. Studies in breast and colon cancer have shown that cancer cells are more sensitive to chemotherapy agents when they exhibit more epithelial-like features. Thus, we hypothesized that the treatment of cancer cells in combination with ADORA1 agonist, N6-cyclopentyladenosine (CPA), would cause cells to be more sensitive to paclitaxel, a standard chemotherapy agent. Methods: To test our hypothesis, we assessed ADORA1 expression by quantitative RT-PCR and cell viability to drug treatments, using MTT assays, in a panel of endometrial and ovarian cancer cell lines. Results: Two endometrial cancer cell lines, HEC-50 and KLE, and an ovarian cell line, HEYA8, showed significant sensitivity to paclitaxel (= or <0.5nM) in combination with 10uM CPA as compared to paclitaxel alone. CPA alone did not induce cell death, which suggests CPA sensitizes cells by another mechanism. Conclusion: These preliminary results suggest that the use of CPA may be a rational approach to sensitize cancer cells to chemotherapy agents. More pre-clinical studies are needed to determine the efficacy this strategy may have in cancer patients. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This presentation is supported by the National Cancer Institute through the U54 CA096297/CA096300: UPR/MDACC Partnership for Excellence in Cancer Research Training Program and by the National Institute of General Medical Sciences through NIH-R25GM088023: RISE 2BEST Program.

A-041 A community-campus partnership: Experience and learned lessons from a collaborative research project

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Background & Objectives: Collaborations between the university and the community are essential for improving the health of disadvantage communities and facilitate the translation of scientific evidence to the community. Greater participation of these communities in the design and implementation of the best strategies is needed. However, in practice, this effort faces multiple challenges for the academia. Objectives: describe the experience of a community–campus partnership during a pilot study for the development of a chronic disease self-management intervention; and discuss the challenges and opportunities faced by researchers and the community in this participatory experience. Methods: As part of a partnership between the UPR School of Medicine and the Piñones community, a collaborative group consisting of eight community members, two lay community health workers and four members of the academia was established. Using community-based participatory principles, the group met for 12 weeks and monthly after that to develop the community-based intervention. Group discussions were done to explore challenges and opportunities faced during the process. Results: Main challenges included the balancing of community agendas with research requirements, encouraging the participation of community members with unfavorable prior experiences with healthcare and research studies, lack of control of unexpected events in the community, and community infrastructure constrains. However, the partnership provided the opportunity to get a better understanding of the community and its impact in research initiatives. Conclusion: Collaborations between the academy and the community have many challenges but provide unique opportunities to worth community's contributions in the research process and in the translation of evidence-based interventions to the community. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported in part by the Puerto Rico Clinical and Translational Research Consortium, Grant 8U545MD007587-03 and Endowed Health Services Research Center, Grants 5S21MD000242 and 5S21MD000138, National Center on Minority Health and Health Disparities, National Institutes of Health.

A-042 Prevalence of Synchronous Oligopolyposis in Hispanics with Incident Colorectal Cancer

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Background & Objectives: In Puerto Rico (PR), Colorectal Carcinoma (CRC) is the first cause of cancer death and the second most common cancer. Familial CRC accounts for 10-15% of all CRCs, however little is known about the prevalence of polyposis syndromes among Hispanic individuals and statistics

are needed to help quantify disease burden. In this study we try to determine the prevalence of oligopolyposis (defined as ≥20 synchronous colorectal adenomas) among Hispanics with incident CRC. Methods: Pathological reports from patients with biopsies positive for CRC from 2007 to 2011 were retrieved from the Puerto Rico Central Cancer Registry. Reports were analyzed by age, gender, stage at diagnosis and colorectal location (proximal vs. distal). Colorectal polyp burden was calculated using pathology reports and normalization of data based on colon segment size. Results: A total of 1685 analyzed, 46.5% were female, with a mean age of 68 years. The mean number of polyps was 11 (SD ± 9.6) after normalization of results; with a number of polyps per age group: <50 years - 9.75 (SD ± 5); ≥50 years - 11.2 (SD ± 9.8). 10.2% of CRC patients had oligopolyposis. Most patients with oligopolyposis were >50 years (96.5%), had tumors located in the proximal colon (62.3%), and had earlier stage at diagnosis (35.9%) compared to patients without oligopolyposis (p<0.001). Conclusion: In our cohort of Hispanics with incident CRC, oligopolyposis was seen in 10% of cases. Our observations suggest that genetic syndromes associated with colorectal polyposis may account for a higher than expected number of CRC cases.

A-043 Obesity Induces Transcriptomic Changes Enhancing Cancer Hallmarks and Tumor Metabolism

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Background & Objectives: Obesity increases the risk of cancer-related death among postmenopausal women with estrogen receptor-positive (ER+) breast cancer (BC), but the direct evidence for the mechanisms is lacking. The purpose of this study is to study the mechanisms mediating this epidemiologic phenomenon. Methods: Transcriptomic profiles of pretreatment biopsies from a prospective cohort of 137 ER+ BC patients were analyzed. A transgenic and an orthotopic/syngeneic obese mouse models were created to phenocopy obese patients and evaluate the effect of obesity on BC and to investigate further direct mechanisms. We used co-culture system to examine the impact of adipocytes and adipokines on BC cell proliferation. Results: Functional transcriptomic analysis of patients revealed the association of obesity with many of the functional changes linked to cancer hallmarks. Our transgenic and orthotopic/syngeneic obese-mouse models recapitulated the functional transcriptomic landscape of obesity-associated changes seen in human patients and demonstrated the role of the Akt/mTOR pathway in obesity-induced breast carcinogenesis and tumor progression. Metformin and everolimus can suppress obesity-induced adipokines secretion, breast tumor formation and tumor growth. An in vitro co-culture model revealed that adipocyte-secreted adipokines (e.g., TIMP-1) regulate adipocyte-induced breast cancer cell proliferation and invasion. Metformin suppress adipocytes-induced cell proliferation and adipocytes-secreted adipokines in vitro. Conclusion: In conclusion, adipokines play a role in addition to estrogen, insulin and IGF-1 signaling in the link between obesity and BC. Activation of Akt/mTOR pathway is important for the role of obesity on the accelerated carcinogenesis and tumor growth. Metformin and everolimus may be alternatives therapeutic approaches for BC patients with obesity. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by a Susan G. Komen for the Cure Promise Grant (KG081048); and the NCI-NIH (RO1-CA089266, P30-CA16672, and U54-CA096300-08). EFM was supported by the NCI-NIH Training Grant Program in Molecular Genetics (T32-CA009299). GVT was supported by a National Institutes of Health cancer prevention fellowship (R25T CA57730). The authors have declared no conflicts of interest.

A-044 Unique Spatial Distribution of Hypospadias Cases According to Severity in Puerto Rico

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Background & Objectives: The most common urogenital (UG) tract congenital condition is hypospadias, where the urethral opening is located in the glans penis but not near the tip (Type I), in the shaft of the penis (Type II), or in the scrotum up to the perineum (Type III). We aim to determine the spatial distribution of hypospadias cases in PR according to severity of the condition. Methods: Clinical and epidemiologic data was collected from three pediatric urology clinics during 2012-2013 for children born in Puerto Rico, 2007-2012 (n=198). Diagnosis and severity of the condition was confirmed by a pediatric urologist. Information about age of the infant and town of maternal residence was obtained through questionnaires. Hypospadias prevalence was calculated for each town by adjusting the number of cases to the number of male live births/year. The geographical information system method of Getis-Ord G was used to determine the spatial distribution of hypospadias prevalence according to. Statistical significance for spatial clusters' hot spots was set at 90%, 95%, 99% CI. Results: The prevalence of hypospadias by severity showed clustering of up to 13 municipalities in PR. An overlap of geographical clusters of Type II and Type III was noted. Type I showed a unique cluster that is not shared with Types II and III. Conclusion: Although hypospadias is idiopathic, the noted spatial clustering of cases according to severity further supports the notion that specific genetic and environmental factors are at play in the condition. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The study was approved by IRB at MSC-UPR.

A-045 The role of BDNF in prefrontal and ventral hippocampal circuits in fear extinction

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Background & Objectives: Brain-derived neurotrophic factor (BDNF) is important for various memory processes (Cunha et al 2010), including fear extinction (Chhatwal et al 2006, Peters et al 2010). While the medial prefrontal cortex (mPFC) is involved in BDNF effects on extinction, little is known about the specific circuits. Methods: To address this, we used an immunocytochemistry approach to measure co-localization of BDNF with the neuronal marker NeuN in the ventral hippocampus (vHPC), infralimbic (IL) and prelimbic (PL) mPFC (regions important for fear regulation and extinction) following fear extinction training. Results: Following extinction, vHPC showed increased BDNF-NeuN co-localization (p= 0.032). Neither IL nor PL showed increased BDNF levels. Because the vHPC projects densely to IL we asked whether increased BDNF in vHPC might influence IL neuronal activity. We approached this question by infusing BDNF into the vHPC of fear conditioned rats implanted with electrodes in IL. BDNF infusions caused a subpopulation of IL neurons to either increase firing rate which may enhance extinction. To test whether BDNF released into IL is important for fear extinction learning, we infused an antibody against BDNF in IL prior to extinction training. Infusions of the antibody resulted in impaired extinction retention when tested the following day (p= 0.014). Infusions of BDNF into IL were enough to induce extinction learning even without training (p=0.015). Infusing BDNF or antiBDNF into PL had no effect on extinction learning. Conclusion: Our findings support the hypothesis that neuronal BDNF in the hippocampal-infralimbic circuit facilitates extinction of both recent and older fear memories. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the National Institutes of Health grants R01-MH081975 and R01-MH058883 and the University of Puerto Rico President's Office to GJQ. We thank Carlos Rodriguez and Zarcaly Quintero for technical assistance. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. None of the authors have any financial conflicts of interest to disclose.

A-046 A Preliminary Study of Quantitative Temporal Modeling of the Urge to Blink during Blink Suppression

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Background & Objectives: Urges frequently precede the tics seen in Tourette syndrome patients. Since urges are a significant trigger for many tics, it is hoped that a better understanding of urges in general and associated neural substrates may lead to improvements in the treatments available for tics. One example of urges that occur in healthy people is the urge to blink after a period of voluntary eye opening. The aim of this study was to analyze variability within and between subjects on the time courses of discomfort and effort needed during blink suppression until a blink occurred and until the time allocated for the trial had elapsed. Methods: Nine adult subjects performed 10 trials in which they used the computer mouse to rate their effort and another 10 trials in which they rated their discomfort. Each trial consisted of 60 seconds of blink suppression followed by 30 seconds during which subjects could blink freely. As a first step toward modeling discomfort and effort ratings, mean ratings were examined from all subject with good data. Results: Six subjects completed successfully the study. The discomfort and effort curves looked fairly similar across subjects. The peak of the mean discomfort graph and the mean effort graph were occurring approximately at the end of the 60 seconds of blink suppression. Conclusion: These preliminary results suggest that line segments or exponential curves could be used to model the discomfort and effort during the blink suppression and free blinking periods. However, neither curve followed the straight-line approximation used by Berman and colleagues. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the WUSTL DBBS BioMedRAP program and by NIH (K24 MH087913).

A-047 An Analysis of Hypospadias According to Social Class in Puerto Rico

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Background & Objectives: It is a tenet in the field that the prevalence of hypospadias, defined by the atypical position of the male urethral meatus at birth, is higher among the non-poor. Although we have recently found the same trend in PR, we now aim to test whether there is a distinct distribution of (1) hypospadias severity; (2) health literacy; and, (3) and parental decision to pursue genital surgery according to social class. Methods: Families of children born with hypospadias were recruited for a larger study (10/2012–5/2013) in three pediatric urology clinics. A questionnaire was designed to define social class following the classification by sociologist EO Wright as: business owners/managers, working class, and underclass. Hypospadias severity (Types I-III) was confirmed by a pediatric urology. Health literacy was measured by the Short Assessment of Health Literacy for Hispanic Adults (SAHLSA-50), which was administered to one of the parents (n=57). Results: Class distribution was: business owners/managers (12.3%), working class (47.7%), and underclass (40.4%). Severity of the condition was uniformly distributed among classes (Fischer Exact Test, p=0.36) and SAHLSA-50 scores did not vary significantly

between classes (ANOVA Test, p=0.24). Similarly, there are no class differences among parents who decided to pursue surgical treatment for their child (Fischer Exact Test, p=0.83). Conclusion: Even though hypospadias may be related to the non-poor, severity of the condition, health literacy, and decision to pursue surgical treatment is not influenced by social class in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The study was approved by IRB at MSC-UPR.

A-048 Parent-Physician Communication About Surgical Outcomes According to Hypospadias Severity

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Background & Objectives: Hypospadias is a male congenital condition of the urogenital (UG) tract where the opening of the urethral meatus is not located in the typical anatomical position. It has been a challenge for empirical studies to ascertain parental and urologist's satisfaction with genital surgery according to severity. Methods: Eighty-two (82) patients diagnosed with hypospadias were recruited in three pediatric urology clinics from October 2012 to May 2013. Thirty-seven (37) of these patients were enrolled in the study during post-operative care. A questionnaire to assess pre-surgical severity and postsurgical satisfaction was completed by parents and an urologist. Cohen's Kappa coefficient was employed to assess inter-observer agreement. Results: According to urology, cases were identified as 35% for Type I, 24% for Type II, and 41% for Type III, which contrasts with parental classification as 30% for Type I, 35% for Type II, and 35% for Type III. Level of agreement on surgery satisfaction between physicians and parents according to Cohen's Kappa coefficient for Type I was moderate (K=0.58) and for Type II was substantial (K=0.77), but observed concordance for Type III was smaller than mean chance concordance. Conclusion: It is critical to promote an effective communication between parents and physicians for the most severe cases because parents may not understand the severity of the condition and may not have real expectations about surgical outcomes. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The study was approved by IRB at MSC-UPR.

A-049 Tamoxifen Neuroprotective effects during Chronic Spinal Cord Injury

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Background & Objectives: Spinal Cord Injury (SCI) is a chronic condition associated with permanent loss of locomotor function. Controversy exists on the neuroprotective effects of estrogens during CNS trauma. Estradiol (E2) is a multi-active steroid which may offer neuroprotection via activation of estrogen receptors (ERs) while Tamoxifen (TAM) is a Selective Estrogen Receptor Modulator (SERM) which may act as agonist or antagonist depending on target tissue. This study aims to demonstrate that continuous administration of E2 and TAM after SCI will improve functional locomotor activity and to elucidate the associated neuroprotective mechanism. Methods: We hypothesized that continuous E2 or TAM administration will activate ERs inducing neuroprotection during SCI. Female rats were implanted with silastic tubing with E2 or TAM pellets after a moderate contusion to the cord. Locomotor behavior was assessed for 28-35 days post injury (DPI). Results: E2-treated rats showed no improvement in locomotor function while TAM-treated rats showed significant improvements at 7, 21, 28 and 35 DPI. E2-treated rats showed increases in white matter tissue at 28 DPI. Liver dry weight was similar between different groups, suggesting TAM has a safe toxicology profile at this dose. Reproductive system of TAM-treated rats was significantly reduced when compared to control. Conclusion: Results suggest that E2 and TAM administration at these doses may initiate neuroprotective mechanisms favoring myelin preservation and locomotor recovery without detrimental effects in other tissues. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by COBRE (P20-GM103642), MBRS-RISE (R25-GM068138) and RCMI Program (G12RR03051) and the Division of Biomedical Sciences of the UPR School of Medicine.

A-050 Bacterial Degradation of Aliphatic Alkanes Prevails across Ecosystems in Puerto Rico

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Background & Objectives: Alkanes reach the environment by anthropogenic activities and natural processes. Bacterial contribution to alkane degradation has been widely documented for polluted and temperate sites. Which bacteria are capable of degrading aliphatic alkanes across ecosystems in Puerto Rico? How prevalent is alkane degradation genes in native microbiota? Which genes are represented among them? We hypothesized that if presence of alkanes across ecosystems in Puerto Rico is frequent then bacteria capable of alkane degradation will be found because they are adapted to the chemical toxicity of the compounds and use them as a source of carbon and energy. The objective is to characterize putative alkane-degrading bacteria (ADB) in response to hexane, 2,2,4-trimethylpentane, and hexadecane. Methods: Soil samples were collected at seven sites under various pollution levels, including natural ecosystems, in Puerto Rico. Native microbiota for each site was cultivated, as consortia, and described using 16S rDNA-TRFLP profiles. The

16S rDNA sequence and alkane degradation preference test was determined for seventy-seven isolated ADB. Results: Twenty-three percent of ADB (n=18) were capable to degrade the three alkanes. Hexadecane was preferred as isolation carbon source (60% of ADB) over isooctane (21%) and hexane (19%). However, alkane preference tests revealed broader capability: hexane (34% of ADB), isooctane (71%), and hexadecane (83%). Conclusion: ADB prevails across Neotropical ecosystems, despite pollution level, are phylogenetically diverse, and harbors novel genetic variants. Vigorous growth was noticeable for polluted sites suggesting adaptation to persistent exposure to the alkanes. These alkane-degrading bacteria provide novel isolates to deal with pollution and disclose processes in nature. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Partial support provided by Puerto Rico Institute for Microbial Ecology Research and Universidad del Turabo.

A-051 Macrophage secretome validation in plasma of patients with HIV associated neurocognitive disorders

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Background & Objectives: Perivascular macrophages and microglia are the primary cells infected with HIV-1 in the brain. Upon infection, macrophages release proteins that may be related to neuronal degeneration and death. However, not all HIV patients develop neurocognitive disorders. Our main hypothesis is that changes in the macrophage's secretome play an important role in the emergence of cognitive impairment in HIV-1 seropositive women. Investigating differences in macrophage protein secretion is of primary importance to understand signaling and metabolic pathways that may be altered during the incidence of HIV-1 associated neurological disorders (HAND). Methods: Macrophages (MDM) were isolated from the peripheral blood of 9 HIV+ and 3 HIV- women, characterized for neurocognitive function, by adherence and differentiated in culture for 7 days. A quantitative proteomics approach using isobaric tag for relative and absolute quantitation (iTRAQ®) was used to detect differentially expressed proteins. Results: When comparing the secretome of HIV+ cognitively impaired women (HAD) to non-demented (ND) and asymptomatic (ANI) HIV+ women, we found 14 proteins differentially expressed. Among these, S100A9, MMP-9, Corticosteroid binding globulin and Gelsolin were candidates for validation by ELISA. Using plasma from 39 HIV-infected patients stratified by neurocognitive function we found that S100A9 has a tendency to decrease in asymptomatic patients when compared to normal cognition (p=0.0682) or cognitive impaired patients (p=0.0760). Conclusion: These findings suggest a possible early stage biomarker for HIV-dementia. Additional experiments are in progress to increase the n. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported in part by NIH grants R01-MH08316-01, Translational Proteomics Center NIMHH (8G12-MD007600), SNRP-NINDS-1-U54NS43011, RISE G12RR03051, INBRE P20RR016470-12, and CRC-NCRR-P20RR11126.

A-052 Post-transcriptional regulation of IL-3: Roles of AREs, HuR and p38

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Background & Objectives: Interleukin-3 (IL-3) is a pro-inflammatory cytokine that is secreted by T-cells upon stimulation, although its mRNA is constitutively expressed, suggesting post-transcriptional regulation. This cytokine it is found over express in Multiple Myeloma cancer. Our group has shown that the IL-3 3'UTR is responsible for repressing its expression, being the Adenosine/Uridine-Rich Elements (ARE) region mainly responsible for this repression. We intend to characterize the functional roles of the AREs and the ARE-BP HuR in the regulation of hIL-3 expression in T-cells. Methods: Chimeric luciferase constructs harboring either wild-type IL-3 3' UTR or different mutations on its ARE region were transfected on Jurkat cells and the reporter activity was measured upon T-cell stimulation. EMSAs were carried out using protein extracts from Jurkat cells at 6, 12 and 24hrs after activation. To asses the role of p38 in IL-3 regulation Jurkat cells were pre-treated with the p38 inhibitor SB202190. Results: We observed that when the nonamer ARE is interrupted, the 3'UTR is not able to elicit the same response as the wild type 3'UTR. HuR Binding to the AREs was found to be modulated upon stimulation. After treatment of Jurkat cells with the p38 inhibitor, IL-3 mRNA levels were significantly decreased upon T-cell stimulation. Conclusion: ARE3 is an important regulator of the 3'UTR response upon T-cell stimulation. HuR binding to the AREs is modulated upon T-cell stimulation. This data suggests that p38 is indeed involved in the post-transcriptional regulation of IL-3. We aim to further characterize the role of p38 and HuR on IL-3 regulation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): U54 CA96297; NIGMS MBRS RISE R25GM061838; PR-LSAMP.

A-053 Antifungal susceptibility profiles in yeast strains with disrupted cell wall stress signaling

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Background & Objectives: The fungal cell wall is necessary to maintain cell morphology and cell integrity under environmental stress conditions. Signaling proteins of the plasma membrane involved with the yeast PKC1 pathway are an attractive target

for antifungal drugs because they are involved in their survival of cell wall stress. The objective of this research is to determine the susceptibility to antifungal drugs or environmental stress, of strains bearing null mutations for genes encoding stress sensor proteins and their interacting protein partners. Our hypothesis is that interacting partners of the WSC and MID gene family of stress sensors are required for survival from exposure to antifungal drugs or environmental stress. Methods: To test this hypothesis, strains bearing null mutations for genes encoding stress sensor proteins and their interacting protein partners were tested for growth on medium containing Calcofluor White, Hydrogen peroxide, Caspofungin, Amphotericin B, or exposure to thermal stress. Cultures were incubated at 30°C or 37°C and inspected for growth after 24 and 48 hrs. Results: 60% of the null mutant strains acquired sensitivity to Amphotericin B. On other hand, 53% of the null mutants acquired increased resistance to 1mM hydrogen peroxide, 26% were sensitive to Caspofungin, while 23% acquired increased resistance. The null mutants wsc1Δ and yke2Δ were the only mutant strains that showed sensitivity to Calcofluor White (150 ug/mL). Conclusion: Signaling proteins of the plasma membrane that are involved with the PKC1 pathway were shown to be associated with fungal survival under different stress conditions. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the UPR School of Medicine, NIGMS/NIAID (05-SC1AI081658-04), NCRR-RCMI (G12RR03051), MBRS-RISE (R25GM061838), University of Toronto & University of Kentucky.

A-054 Modulation of Hyperactivity in Zebrafish Larvae by Two Plants Extracts

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Background & Objectives: Neuronal hyperactivity is at the heart of numerous neurological disorders which are often chronic and need life-long treatments and for which we mostly are lacking safe and efficient medication. An extensive and underexploited wealth of plant extracts, which have often been used for centuries by various ethnic and geographically unrelated groups for neuronal dysfunction, is available. In order to test those plant extracts in a standardized manner for safety and efficacy as potential alternative and/or complementary drugs to modulate hyperactivity in humans, we wanted to set up a behavioral assay in a whole vertebrate, which would allow for rigorous and efficient testing. Methods: Taking advantage of an increasingly popular animal model, we have established a hyperactivity-induced behavioral assay in larvae zebrafish. To induce hyperactivity, we have used subletal and sub-seizure concentrations of a classical pro-convulsive drug (PTZ) and monitored the behavior of treated larvae in a Light/Dark switch assay in the presence/absence of plant extracts. Results: At a discreet concentration of PTZ, a highly reproducible and quantifiable behavior pattern emerged. We then tested for correction of this hyperactive pattern with crude extracts of two plants, Citrus Aurantium (CA) and Valeriana Officinalis (Val). Both plant extracts modulated strongly and differently the larval response. Conclusion: We have established an assay which allows assessing the efficacy and the safety of crude plant extracts in a quantifiable, standardized and reproducible manner, with which we will systemically test other plant extracts for potential correction/modulation of neuronal hyperactivity. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research supported by the NIH-RCMI Grant # G12RR03051, the MBRS-RISE Program R25GM061838 and the National Institute of Deafness and other communication disorders K99/ R00 grant #4 R00 DC009443-02.

A-055 Azoxymethane Induces Quantitative and Qualitative Changes in Mitochondrial DNA In Apex1+/- Mice

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Background & Objectives: Quantitative and qualitative changes in mitochondrial DNA (mtDNA) are considered important hallmarks in cancer. However, whether these changes contribute to carcinogenesis is unknown. Methods: We hypothesize that changes in mtDNA stability play a role in carcinogenesis. To test this hypothesis we used the azoxymethane (AOM)-induced colorectal cancer carcinogenesis model in mice haploinsufficient for the base excision repair (BER) gene, APEX1 (Apex1+/-). We first determined the kinetics of mtDNA damage by QPCR in colorectal crypts after a single AOM dose (10mg/kg). Results: In wild type (WT) mice we detected a time-dependent induction in mtDNA lesions, which peaked 48hrs after treatment and significantly decreased after 72hrs. However, in Apex1+/- mice mtDNA lesions peaked 48hrs after treatment but remained increased after 72hrs. Moreover, Apex1+/- mice exhibited a significant 16% decrease in the abundance of mtDNA molecules 72hrs after treatment, whereas no changes were observed in WT mice. Next, we induced tumor formation by treating mice with AOM once a week during four weeks. Six months after treatment animals were sacrificed and tumors were removed and analyzed. Tumors from both WT and Apex1+/- mice exhibited significantly decreased mtDNA abundance. Surprisingly, no increases in mtDNA lesions were observed. However, we observed a significant increase in the frequency of nuclear DNA lesions in the Apex1+/- mice as compared to WT animals. Conclusion: These results suggest that AOM induces both quantitative and qualitative changes in the mtDNA and that BER may play an important role during colorectal carcinogenesis. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NIH grants R25GM061838, 2G12RR003051 and U54 CA096297.

A-056 Identification and characterization of phosphorylated regions in the RNA surveillance protein Upf2

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Background & Objectives: About 30% of all mutations causing human diseases generate mRNAs with premature termination codons (PTCs). These PTCs can be incorporated in the mRNA via nonsense or frameshift mutations, normal programmed rearrangements, or biosynthetic errors. As a result, these PTC-harboring transcripts encode potentially non-functional and/or toxic proteins that can lead to disease. To avoid the synthesis of these aberrant proteins, the nonsense-mediated mRNA decay (NMD) pathway targets the PTC-containing mRNAs for degradation. The core NMD proteins Upf1, Upf2, and Upf3 are evolutionary conserved from lower to higher eukaryotes. Upf2 is a phosphorylated protein in yeast and mammals but the precise role of this post-translational modification remains elusive. Methods: Using tandem mass spectrometry analyses, twelve novel phosphorylation sites (S54, S55, T327, S424, T842, S868, T869, T872, S874, S1021, S1022 and S1023) were identified in Upf2 protein from S. cerevisiae. Furthermore, functional analysis revealed that a small amino-terminal motif harboring at least two phosphorylated residues is important for NMD activity. Conclusion: Together, these results suggest that Upf2 phosphorylation is a conserved feature of NMD and provide a foundation for future studies to elucidate the functional relevance of Upf2 phosphorylation in the NMD surveillance pathway. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by U54 CA96297, PR-LSAMP HRD-0601843, and RISE 2R25GM61151.

A-057 Identification of Novel MiRNA Expression Signatures in Astrocytoma According to its Malignant Potent

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Background & Objectives: Astrocytomas are the most common type of adult primary central nervous system neoplasms. The World Health Organization (WHO) histologically classifies astrocytomas into four malignancy grades spanning from grade I, a benign tumor, to grade IV, a highly malignant tumor. This classification is highly subjective and more specific molecular markers are needed. MicroRNAs (miRNAs) are small (19–24 nucleotides) non-coding RNAs that regulate gene expression post-transcriptionally. Increased in vitro and in vivo evidence indicates that several miRNAs are dysregulated in all cancers including astrocytomas. However, the precise miRNAs aberrantly expressed in GBM have not been identified. The aim of this study was to elucidate miRNAs dysregulated in each astrocytoma grade and study the role of highly deregulated miRNAs in GBM. Methods: Total RNA from archived Puerto Rican brain tumor formalin-fixed paraffin-embedded (FFPE) samples was isolated, labeled, and hybridized to Affymetrix miRNA arrays. TaqMan-based real-time PCR confirmed these findings. Clonogenic assays using miR-92b inhibitor in a well-known type-IV astrocytoma cell line were performed to assess the effects of miR-92 targeting. Results: PARTEK analysis identified 85 miRNAs differentially regulated in grade II, 72 miRNAs in grade III and 53 miRNAs in GBM compared with control samples. Clonogenic assays targeting miR-92b showed a reduction in cell proliferation in CRL-1690 cells. Conclusion: Our results provide miRNA signatures to distinguish between WHO grade II, III and IV astrocytomas. In addition, in vitro experiments suggest that targeting miR-92 could be a promising therapy not only for GBM but also for other brain tumors. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research supported by PRCTRC: NCRR (U54 RR 026139-01A1) and NIMHD (8U54 MD 007587-03), Minority Biomedical Research Support (MBRS) RISE Program R25-GM061838 (MRD), and RCMI: NCRR (2G12-RR003051) and NIMHD (8G12-MD007600) from the NIH. We wish to thanks Dr. Carmen Cadilla and Mrs. Jessicca Renta of the Molecular Genetics Core Facility (RCMI, Medical Science Campus. Grants 8G12-MD007600 and NIMHDG: 12RR0305) for helping us with the processing of the microarray data. Contact information: pablo.vivas@upr.edu

A-058 Ang II synergizes with ischemic preconditioning to enhance cardioprotection through AT-1 receptors

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Background & Objectives: Recent studies indicate that the cardioprotective effects of ischemic/reperfusion preconditioning (IPC) can be replicated by angiotensin II (Ang II). Both IPC and Ang II-induced preconditioning (APC) have been reported to improve post-ischemic ventricular recovery and reduced infarct size through mechanisms depending on ROS generation and PKC activity. However, whether IPC and APC act through similar mechanisms or synergize to enhance cardioprotection has not been established. Methods: In this study, Langerdorff-perfused rat hearts were subjected to IPC, APC or their combination (IPC/APC) followed by ischemic reperfusion (I/R) injury. Losartan, an Ang Type 1 (AT-1) receptor blocker, was used to examine the involvement of Ang II-receptors in APC. Results: IPC, and less potently APC, induced cardioprotection as determined by significant increases in the percent recovery of left-ventricular developed-pressure (LVDP), the first derivative of developed pressure (+dP/dt), and the rate pressure product (RPP) compared to controls. In absolute values, the post-ischemic increases in +dP/dt and RPP were significantly higher for IPC/APC compared to IPC or APC. Concomitantly, the mitochondrial respiratory control index (RCI) was significantly elevated in this group. These cardioprotective effects of IPC/APC

were sensitive to losartan, indicating the involvement of AT-1 receptors. Conclusion: These results indicate that IPC and APC synergize to induce cardioprotection following I/R injury possibly through improvements in mitochondrial function. Future studies will focus on mitochondrial mechanisms involved in this synergism. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NIH Grant SC1HL118669 (SJ) and RCMI Grant G12RR-03051.

A-059 Zebrafish Cardiac Muscle Thick Filaments; Isolation Without Proteolytic Enzymes

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Background & Objectives: Clarification of the structure of the cardiac thick filament is important for understanding why mutations in thick filaments proteins such as cMyBPC or titin could cause hypertrophic cardiomyopathies. Zebrafish (Danio rerio) has become an alternative system to the mammalian model to examine the development and functioning of the cardiovascular system, and the proteins that form it. It shares similarities in physiology and structure to the mammalian cardiac thick filaments, and techniques for the genetic manipulation of this model are well developed. Our main objective is to establish an isolation method and further improve it to examine the structure and functioning of both native zebrafish cardiac myosin thick filaments and filaments with mutations in the thick filament associated proteins. Methods: In earlier isolation techniques for mammalian cardiac thick filaments, the use of potentially damaging proteolytic enzymes such as elastase and calpain has normally been necessary. Here we used a procedure similar to those for mammalian heart, only this time without the use of any proteolytic enzyme and we analyzed their structure by negative staining, transmission electron microscopy and SDS-electrophoresis gels. Results: We have successfully isolated thick filaments from zebrafish cardiac muscle without the use of any proteolytic enzyme and have developed a refined technique for the isolation of zebrafish cardiac thick filaments. Conclusion: Our results help to further improve the 3D reconstruction of zebrafish cardiac thick filaments for the study of the structural changes in the thick filament associated with disease processes. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH grant SC1HL096017 to RWK and UPR-RCM RISE Program to MGS.

A-060 Prenatal Health & Birth Satisfaction & Socioeconomic Status among a Pregnancy Cohort in Puerto Rico

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Background & Objectives: Puerto Rico Testsite for Exploring Contamination Threats is a prospective pregnancy cohort in the northern area of Puerto Rico exploring the risk factors and potential contribution of contaminants to preterm birth (PTB). Explore the relationship between socioeconomic status and labor experience among PROTECT participants. Methods: Participants were recruited during the first and second trimester of pregnancy at 5 prenatal community clinics (CC) and OB/GYN private practices (PP) from 2011-2013. Interviews were conducted during the gestational (18±2, 22±2 and 26±2 weeks) and postpartum period. Data was analyzed using SPSS. Results: There were differences in maternal age, educational attainment, marital status, health care insurance and income between participants recruited in CC and PP. CC: 68% <20 years old (y/o), 60% single, 45% enrolled in high school, 94% Mi Salud; PP: 41.8% >30 y/o, 65.8% married, 95% had higher educational attainment, 6% Mi Salud. No differences were noticed with perceived maternal health status, prenatal counseling on PTB, labor experiences and satisfaction (LES). Overall 85% reported being totally/very satisfied with LE, 83% accompanied by trusted person during labor (AL), 85% informed consent (IC) prior medical intervention/procedure, 70% delivered in the most comfortable position. Conclusion: Although there were important differences in socioeconomic status between participants recruited in CC and PP; no differences were noted in labor experience and satisfaction (LES) in CC and PP participants, being accompanied by a trusted person at labor and receiving information prior to procedures were important factors linked to high LES. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project is supported by award number P42ES017198-01A1 Superfund Research Program for the National Institute of Environmental Health Sciences (NIEHS) and grant number G12RR03051 (RCMI Program, UPR Medical Sciences).

A-061 Ultrastructural Changes of the Optic Nerve after Injury and CNTF Treatment

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Background & Objectives: Following optic nerve injury in mammals, the activation of glial cells affects the ability of neurons to survive and to regenerate damaged axons. Glia is in a "resting" state in the normal adult CNS, but they turn "active" after injury and disease (e.g., trauma, neurodegeneration, and infection). We have previously described that glial cells are activated after frog optic nerve damage and regenerating axons are in close proximity to the glia limitans in the periphery of the nerve. Methods: To that end we performed optic nerve crush and applied either saline solution or growth factors (CNTF) and examined the optic nerves at one, two and three weeks after axotomy. Electron microscopy sections were analyzed at different portions of the nerve: proximal, distal and the lesion site. Results: Our preliminary observations show that two weeks after nerve damage, there was a vigorous macrophage

activity at the lesion site in close proximity to regenerating axons. Application of ciliary neurotrophic factor (CNTF) increases the speed and number of regenerating axons after frog optic nerve crush. However, we need to understand how CNTF affect the glial cell populations after injury and what its their role during axonal regeneration. Conclusion: Preliminary qualitative observations suggest that CNTF increases the glial activity in the lesion site and probably exerts a beneficial role during axonal regeneration. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): REB is supported by NIH-GM 093869, NIH RCMI-G12RR0305, and the transmission electron microscope grant NSF-DBI-0959225. GVM is supported by the MBRS-RISE Program (G12RR03051).

A-062 Evaluation of Dental Desensitization Protocol in a Group of Autistic Children in Puerto Rico

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Background & Objectives: This is a case series study that was intended to evaluate if a dental desensitization protocol increases the cooperation level of children with autism in the dental clinic setting. Methods: Ten participants with Autism disorder participated and were referred by their psychologist. Desensitization sessions were conducted at the University of Puerto Rico, School of Dental Medicine. The protocol consisted of four stages, a first stage before the dental visit and three other stages in the dental scenario. The period for this procedure was from two to four visits: a minimum of two visits (one visit with the psychologist of 1 hour and another visit in the dental clinic of 1.5 hours). Every patient had to complete the four stages in order to successfully finish the desensitization protocol. Scoring of behavior using the Frankl Behavior Rating Scale from 0 being definitely negative to 3 being definitely positive was done. Statistical analysis was based on descriptive statistics. Results: A group of 9 females and 1 male, age range 5-13 years old were treated. 7 patients completed the dental stage of the protocol in one visit, 0 in two visits, 1 in three visits and 2 did not complete the protocol. Scores ranged from 1.78 to 2.94 with an average of 2.29. 8 of 10 patients completed the protocol successfully. Conclusion: The study suggests that the dental desensitization protocol worked successfully for autistic children independently of the severity of the condition.

A-063 Multiple Simultaneous Gastrointestinal Parasitic Infections in a Patient with Human Immunodeficiency

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Background & Objectives: HIV patients are at increased risk for intestinal parasitic infection. Though rare, multiple simultaneous infections should be considered in non-improving patient. Methods: A 34 year old man, recently diagnosed with HIV, evaluated due to abdominal pain. Patient noticed episodes of soft to liquid stool 2 weeks prior to evaluation, self-treated without significant improvement. Diarrhea then complicated with abdominal pain, described as RUQ pain, non-radiating, with bloating. Patient begun on Ciprofloxacin and Metronidazole for possible infectious diarrhea. Stool evaluation positive for Gardia lamblia, patient showing improvement. MRI revealed acalculous cholecystitis, elevating suspicion for Cryptosporidium infection, later confirmed by AFB in stool. Patient returned 3 days later, with reoccurrence of diarrhea. Stool work-up retaken revealing of Strongyloides stercoralis. Treatment with Ivermectin given and stool samples sent for the following week to document clearance. Results: Patients with HIV infection are at higher risk for gastrointestinal infections causing diarrhea, particularly parasites. There is scant data regarding parasitic infections among HIV patient in developed world, most studies and research comes from poverty stricken areas of South Africa, India, Iran and South Pacific. Although multiple infection with the same or different parasites have been reported (more commonly Giardiasis and Strongyloidiasis), simultaneous infections are rare. Conclusion: This case illustrate how parasitic gastrointestinal infections can be etiologic agents in HIV-infected patient with chronic diarrhea, also demonstrating one patient may present with multiple infectious etiologies, at times simultaneously, making the diagnosis and treatment a clinical challenge. After extensive literature review, no case reports with three simultaneous parasitic gastrointestinal infections like our patient found.

A-064 Developing a Tailored-made Competency Model in Healthcare Management Education

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Background & Objectives: A Competency Based Education is a functional approach to education that emphasizes life skills and evaluates mastery of skills according to actual adult-learner performance. Today's healthcare leaders must have management skills sophisticated enough to deal effectively with the changes in healthcare environment. To develop a set of competencies that addresses the essential areas of healthcare management expertise required for future healthcare managers in Puerto Rico. Methods: The process consisted of three phases: (1) Benchmarking of competencies models in the field (6 models evaluated, over 100 competencies under deliberation), (2) Scanning of external environment (79 practitioners, including healthcare executives (25%), board members (6%), medical directors (13%), financial officers (10%), nurse executives (9%), alumni (10%), others (27%); and internal environment (12 academicians) using interview technique, and (3) translation

of the model from practice arena to the Academia. The American College of Healthcare Executives Competency Model was chosen as representative of essential tasks performed by healthcare leaders in Puerto Rico. The University of Puerto Rico Institutional Review Board approved this protocol. Results: The translation of the competency model resulted in a set of 32 competencies, 5 domains (Communication-Relationship Management, Leadership, Professionalism, Knowledge of Healthcare environment, and Business-skills) under the basis of public health. There is alignment between the program mission, curriculum, and types of jobs placement. Conclusion: All syllabuses were updated to demonstrate the alignment between course objectives, course content, teaching methods, and assessment strategies. Competencies assessments will be used to demonstrate measurable outcomes of alumni and effectiveness of curriculum design.

A-065 Percepción de riesgo de un grupo de mujeres de la comunidad universitaria del RCM-UPR y alrededores

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Background & Objectives: La inseguridad en el campus universitario y sus alrededores ha sido una preocupación de las mujeres en el RCM por muchos años. Objetivos: (1) Identificar lugares de mayor riesgo. (2) Señalar como este asunto afecta la calidad de vida. (3) Proponer alternativas. Methods: La metodología de investigación utilizada fue Photovoice. Este método de investigación-acción participativa está basado en los principios de la promoción de la salud y teorías sobre educación para la toma de conciencia crítica, la teoría feminista y el enfoque comunitario de la fotografía documental. Para ello, (1) se recopilaron los datos a través de fotografías tomadas por una representación de mujeres del RCM, (2) se redactaron relatos y (3) se realizaron dos exposiciones. Results: El camino hacia el Tren Urbano, las escaleras del camino a la urbanización cerca del RCM, el estacionamiento público, el pasillo entre la biblioteca y el Hospital Centro Médico y el puente peatonal entre el edificio principal y la Escuela de Enfermería del RCM se identificaron como los lugares de mayor riesgo. Las alternativas capturadas por el lente incluyeron: un aumento en el personal de seguridad, mayor iluminación, un "trolley" y colocar teléfonos de emergencia. Un total de 102 personas participó de las exposiciones. Conclusion: Los participantes de ambas exposiciones (docentes, no docentes y estudiantes) confirmaron sentirse a riesgo en los predios del recinto. Se realizó una reunión con los líderes académicos del RCM. Se proyecta promover las diversas acciones para atender esta problemática con la colaboración de la gerencia académica.

A-066 Estrés en una muestra de familiares de pacientes admitidos en la unidad de cuidados intensivos

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Background & Objectives: Los familiares de los pacientes admitidos en la UCI exhiben altos niveles de estrés (J. McAdam, 2009; Cerón Polanco, 2008). Para determinar esta situación se formuló la siguiente interrogante: ¿Cuánto estrés poseen los familiares de pacientes adultos hospitalizados en una unidad de cuidados intensivos de la zona metropolitana en Puerto Rico?. Para contestarla se describió el nivel de estrés que poseen los familiares de pacientes adultos hospitalizados en una unidad de cuidados intensivos. Methods: El diseño es descriptivo de corte transversal. La muestra por disponibilidad estuvo conformada por familiares mayores de 21 años de edad. Se recolectó datos de una muestra de 30 participantes. La mayoría de la muestra fue del sexo femenino. El estrés se midió con el instrumento titulado Escala de estrés percibido (PSS) de Cohen, Kamarck y Mermelstein (1983) . Luego de recibido el permiso del IRB se recogieron los datos durante el mes de octubre. Results: Más del 50% indicó que algunas veces, con frecuencia y muy seguido se ha sentido estresado(a) o nervioso(a) en el último mes, el 66% indicó que en el último mes nunca y casi nunca ha podido controlar las dificultades de su vida. Conclusion: La media arrojada por el instrumento fue de 1.75, significando que la muestra tuvo estrés algunas veces. A pesar de que el nivel de estrés se considera bajo, es importante hacer otros estudios bajo un diseño cualitativo que permite tener una visión holística de la situación que no se obtiene en el cuantitativo.

A-067 Learning Together to Work Together: an Innovative Interprofessional Education Activity

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Background & Objectives: Interprofessional education (IPE) involves shared learning experiences among health profession students across disciplines. The principal goal of IPE is to prepare all health professions students for deliberatively working together with the common goal of building a safer and better patient-centered and community/population oriented health care system. During the first year clinical skills course of the UPR-SOM, pharmacy, nursing and medicine students were exposed to an IPE activity. The aim of this activity was to: 1) Introduce students to the basic concepts of Quality Improvement and Patient Safety; 2) Measure student satisfaction with this novel interactive activity with other health profession students. Methods: An introductory conference focused on the topics of the integration of patient safety across the continuum of medical was presented to the participants. Afterwards, students were divided in three groups. A simulated video about a system error was presented to the students using standardized patients. Then, an interdisciplinary discussion was facilitated by faculty members of the three health professions schools. Students analyzed the situation, identified the types of systems errors and the possible causes and/or obstacles presented in the recorded simulation. Results: Student survey data showed that 99% of students were very satisfied with the activity and believe that it facilitated learning. Conclusion: Students favor interac-

tive activities that develop effective interprofessional working relationships with other learners and professors. Among their recommendations were to increase the number of these activities but with a smaller number of participants per group to improve participation and enhance effective communication.

A-068 La retórica de la participación democrática en el sector salud

Nylca J. Muñoz-Sosa, Luis A. Avilés. Universidad de Puerto Rico Recinto de Ciencias Médicas

Background & Objectives: La Comisión de Determinantes Sociales de la Salud (CDSS) advierte que la equidad en salud sólo es posible con mecanismos de participación democrática. El aprobado proyecto de ley PC-1185, exige participación democrática en la composición de un Consejo Multisectorial del Sistema de Salud de Puerto Rico. Esta investigación persigue: (1) determinar la importancia que diversos grupos del sector salud le confieren a la participación democrática; y (2) identificar sus estrategias retóricas. Methods: Tomando como objeto de análisis las ponencia escritas del PC-1185, realizamos un análisis retórico e identificamos argumentos de democracia y examinamos sus premisas y falacias argumentativas. Results: De 33 ponentes, 7 representaron al ejecutivo y municipios y 26 a grupos de interés (20 a favor la participación democrática, 5 en contra y 1 ambivalente). Un grupo heterogéneo apoyó la participación democrática, presentándola como una forma de producir un proyecto de país y de trascender las influencias político-partidistas. Sus oponentes, principalmente el sector corporativo en salud y una sub-especialidad médica, recurrieron a argumentos de autoridad ("los médicos son quienes corren el sistema y lo conocen" y "deben haber economistas y CPA"), apelaron al ridículo como fuente de argumentación ("¿hay que hacer elecciones generales para escoger a un delegado de los pacientes?") y consideraron el Consejo incompatible con nuestro actual sistema de democracia representativa. Conclusion: El sector salud está profundamente dividido en términos de participación democrática, lo cual, según la CDSS, es un obstáculo para alcanzar equidad en nuestro sistema de salud.

• Poster Presentations •

A-069 Las poblaciones vulnerables ante un desastre en Puerto Rico

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Background & Objectives: El impacto de los desastres no discrimina por edad, estatus social, nivel socioeconómico ni condiciones de salud. Sin embargo, algunas poblaciones son más vulnerables en situaciones de desastres. Esto incluye niños/as pre-escolares, personas de edad avanzada, personas con altos riesgos de enfermedades, lesiones y discapacidades, y personas de bajo nivel socioeconómico. Describir las poblaciones vulnerables ante una emergencia o desastre en Puerto Rico. Methods: Se utilizó datos secundarios sobre poblaciones vulnerables desarrolladas para el Hazard and Vulnerability Assessment que incluyen niños/as menores de 5 años, personas mayores de 65 años, personas sin hogar, mujeres jefas de familia sin esposo, personas bajo el nivel de pobreza, personas con discapacidades y pacientes con problemas renales y cáncer. Results: Un 21% de la población se encuentra en edades vulnerables; 6% niños/as menores de 5 años y 15% personas mayores de 65 años. Personas sin hogar componen solo 0.1% de la población. Mujeres jefas de familia sin esposo constituyen 8%. Casi la mitad de la población (48%) está bajo el nivel de pobreza y 20.4% de la población total posee alguna discapacidad. Entre la población que requiere tratamiento ininterrumpido que puede verse afectado durante un desastre, se encuentra que un 0.2% son pacientes de diálisis y 2% son pacientes con cáncer. Conclusion: La efectividad de la respuesta a un desastre, en términos de proteger poblaciones vulnerables, depende de una planificación efectiva. Es importante evidenciar los grupos vulnerables para desarrollar política pública adecuada. Sus necesidades especiales deben ser incluidas en la preparación para desastres. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Este proyecto fue subvencionado en un 100% con fondos federales del CDC y ASPR, administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico y fue implementado a través del contrato #2013-DS0383 con la OPCRSP.

A-070 Comparison between 2D and 3D Motion Systems for the Assessment of Knee Injury Predisposing Factors

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Background & Objectives: The purpose of this study was to compare a two-dimensional motion analysis system (Dartfish™) versus a three-dimensional system (Vicon Nexus) for the assessment of knee injury predisposing factors during a 40-cm drop jump. It was hypothesized that 2D measures were reliable (ICC > 0.80) and highly correlated (0.80) with the 3D system for the outcomes of interest. Methods: Sixteen healthy subjects (9 males, 7 females; mean ± SD age, 25.5 ± 2 years; BMI, 24.33 ± 2.98 kg/m2) participated in the study. The three-dimensional system (Vicon Motion System, Denver, CO) used six cameras at 120 Hz. The two-dimensional system comprised of a 60-Hz commercial camcorder and Dartfish Pro Suite™. The knee injury predisposing outcome was the knee separation distance (KSD). Intraclass Correlation Coefficients (ICC) were used to establish intra (average of three trials), inter-rater reliability (3 raters), and day-to-day stability for Dartfish™ analyses. A Pearson correlation coefficient (PCC) was used to establish the

concurrent validity between systems for both outcomes using Vicon as the gold standard. Results: The ICC's for the average of three trials was 0.96 KSD, inter-rater reliability using three raters was 0.82 and day-to-day reliability for the KSD was > 0.81. The PCC between Dartfish™ and Vicon for the average of three trials was 0.88 for the KSD. Conclusion: Dartfish™ is comparable to Vicon for the measurement of KSD indicating it could be used in the field or within the clinical setting for the assessments of dynamic knee valgus as a valid and reliable method.

A-071 Balance Assessment in Adults Diagnosed with HIV

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Background & Objectives: The purpose of this study is to assess balance during six different sensory conditions and evaluate the role of visual, vestibular and proprioceptive systems contributions during these balance tasks. We hypothesized that postural stability will be reduced, with an increase in the complexity of the task and the vestibular system would be the most affected among all systems. Methods: Sixteen subjects (10 female and 6 male) participated in the study. Balance was measured with a MatScan™ (TekScan, Inc. Boston, MA) as the displacement of the center of pressure (COP) in cube centimeters standing for 30 seconds with both legs in six different sensory conditions. Results: Results showed no significant difference between three of the sensory balance conditions, thus, they were eliminated. The three remaining sensory balance conditions were significantly different between one another ($p<.001$). COP with eyes open (.37 cm^2) (all systems) were significantly different with eyes closed on foam (34.95 cm^2) (only system remains unaltered vestibular) ($p < .0001$). Eyes closed with active head rotation (1.28 cm^2) (proprioceptive system intact) was significantly different from eyes closed on foam (34.95cm^2) (vestibular) ($p < .0001$). In addition, COP of eyes open on foam (7.40 cm^2) (vision + vestibular) was significantly different as of eyes closed on foam (34.95 cm^2) (vestibular) ($p < .0001$). Conclusion: It appears that the vestibular system and proprioceptive system are impaired in HIV patients. Nevertheless, it seems that patients with HIV rely in the visual system in a higher degree to attain balance.

A-072 Comparison between 2D and 3D Motion Analysis Systems for the assessment of a Drop Jump Maneuver

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Background & Objectives: The purpose of this study was to compare a two-dimensional motion analysis system (Dartfish™) versus a three-dimensional system (Vicon Nexus) for the assessment of knee injury predisposing factors during a 40-cm drop jump. In addition, assess if the two-dimensional system compares to the 3-D system can be used on the field or clinical setting. Thus, we hypothesized that 2D measures will be reliable (ICC > 0.80) and highly correlated (0.80) with the 3D system for the outcomes of interest. Methods: Sixteen healthy subjects (9 males, 7 females) participated in this study. The three-dimensional system (Vicon Motion System, Denver, CO) and a two-dimensional system, Dartfish Pro Suite™, were used in this study. The knee-ankle ratio (KAR), the knee injury predisposing outcome, was calculated as the difference between the distance of the markers placed at the lateral femoral epicondyles at full knee flexion minus the distance between markers at initial contact. Each subject performed a total of three bilateral drop jumps and returned within the same week for a second session. Results: The ICC's for the average of three trials were 0.96 for the KAR, the inter-rater reliability using three raters was 0.82 and day-to-day reliability for the KAR was > 0.92. The PCC between Dartfish™ and Vicon for the average of three trials were 0.91. Conclusion: Dartfish™ is comparable to Vicon for the measurement of KAR indicating it could be used in the field or within the clinical setting for the assessments of dynamic knee valgus as a valid and reliable tool.

A-073 Capacidad de respuesta en el manejo de cadáveres para diversas amenazas en Puerto Rico

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Background & Objectives: Los desastres tienden a superar la capacidad de respuesta de un país, particularmente cuando producen un número significativo de víctimas. El manejo de los cadáveres luego de un evento catastrófico comprende la búsqueda de los cuerpos, identificación in situ, traslado a morgues, entrega a sus familiares y disposición final. Describir la capacidad de respuesta en el manejo de cadáveres en eventos que puedan provocar mortalidad en masa, tomando en consideración la mortalidad general ocurrida en Puerto Rico durante el 2010. Methods: Utilizando bases de datos secundarias del Hazard and Vulnerability Assessment se analizó información sobre el manejo de cadáveres en Puerto Rico. Se obtuvo las tasas (por cada 100,000 habitantes) de los transportistas y vehículos autorizados para el manejo de cadáveres, cantidad y capacidad de morgues, cantidad de funerarias y cementerios, y la mortalidad general para el año 2010. Además, se obtuvo información de muertes asociadas a ciclones tropicales, inundaciones, dengue e influenza AH1N1, y estimaciones para terremotos y tsuna-

mis. Results: Diariamente mueren 2.15 individuos debido a diferentes causas en Puerto Rico. Las amenazas evaluadas presentarían un aumento considerable de muertes asociadas a estas. Las muertes asociadas a los eventos fluctúan entre 0.21 para ciclones tropicales hasta 2,415.60 para terremotos. La Isla cuenta con 3.01 transportistas, 4.16 vehículos autorizados, 1.15 morgues con una capacidad de 4.86, 7.73 funerarias y 4.13 cementerios. Conclusion: Los resultados indican una sobrecarga ante un evento catastrófico, implicando que el gobierno debe desarrollar planes y estrategias de mitigación para afrontar situaciones relacionadas a eventos con víctimas en masa. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383.

A-074 In-Silico Drug Discovery of Influenza Virus Polymerase Complex Inhibitors

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Background & Objectives: Influenza A virus (INF-A) is responsible for a well known infectious disease that affects humans, with this serotype implicated in all INF related seasonal epidemics and sporadic pandemics. Current treatment options are limited and emergence of resistant strains highlight the need for development of new and effective therapeutic treatments. Our initial working hypothesis was that: Highly conserved potential protein-protein interaction motifs present in influenza virus polymerase subunits (PA, PB1, PB2) are potential new targets for broad-spectrum antiviral drug development. Methods: In order to test this hypothesis we used an In Silico drug discovery strategy that employed a combination of docking software (Autodock), pharmacophore model generation software (Ligand Scout), and several drug and drug fragments databases.Results: In the initial In Silico campaign, pharmacophore models were generated for the PA-PB1 interface and the subsequent screening identified a group of drug-like compounds with predicted affinities in the sub-micromolar range. A small subset of these top hits was selected for evaluation in viral bioassays and very preliminary results are consistent with inhibition of viral replication with affinities in the ranges predicted by the In Silico analysis. Conclusion: In conclusion, a highly conserved target was identified in the PA subunit of the INF-A polymerase complex and was found to have most of the characteristics of an ideal pharmacological target. Results from both, the In-Silico and viral replication studies, support the potential of this protein interface as target for development of broad-spectrum antivirals against INF-A.

A-075 Preparación y respuesta de las instalaciones de salud mental ante un desastre en Puerto Rico

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Background & Objectives: Los servicios de salud mental son esenciales antes, durante y después de un desastre. Es importante contar con modelos de intervención integrados, que comprendan procedimientos, adiestramientos y acuerdos colaborativos con otras instalaciones de salud mental. Describir la preparación y capacidad de respuesta de las instalaciones de salud mental en Puerto Rico ante un desastre. Methods: Se administró un cuestionario a 12 instalaciones de salud mental de Puerto Rico para conocer su nivel de preparación y capacidad de respuesta ante un desastre. A través de los cuestionarios, se indagó sobre los planes de emergencia, acuerdos colaborativos, protocolos de tratamiento médico y adiestramientos al personal. Results: La mayoría de las instalaciones entrevistadas tienen un plan de emergencias escrito e implementado. En caso de un desastre, nueve de estas no cuentan con unidades móviles. En cuanto a acuerdos colaborativos, siete indicaron que no poseen acuerdos con otras instalaciones de salud mental. En su mayoría las instalaciones de salud mental perciben que no existe una respuesta integrada y no visualizan su rol en caso de un desastre. Además, ocho de estas no cuentan con psiquiatras especializados en trauma. Se destaca la falta de adiestramientos sobre las alteraciones y procedimientos de triage en un desastre.Conclusion: Existe una limitación en cuanto a la preparación y respuesta de las instalaciones de salud mental en la Isla. Es importante que estas refuercen su capacidad de respuesta ante desastres. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383.

A-076 Hazard Vulnerability Assessment of Puerto Rico's Public Health, Medical & Mental Health Systems

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Background & Objectives: Conducting a comprehensive Hazard Vulnerability Assessment (HVA) is critical to identify potential disasters that could affect the demand for public health, medical, and mental/behavioral services and the ability to provide these services to the population. Since each hazard is different, associated risks must be analyzed to prioritize preparedness, mitigation, response and recovery activities. The objective is to describe potential hazards, vulnerabilities and risks faced by Puerto Rico's public health, medical, and mental/behavioral health systems. Methods: The Hazard Risk Assessment Instrument (HRAI) developed by UCLA (2006) was used to determine the occurrence of five hazards with the highest probability score. Key public health, medical, mental/behavioral health and subject matter experts were interviewed to obtain their input and assistance in identifying Puerto Rico island-wide hazards. Puerto Rico's vulnerability was assessed according to the severity of the impact of the hazards on four indicators: human impact, interruption of healthcare services, community impact, and impact on public health agency infrastructure. Results: Epidemics/pandemics, floods, hurricanes, earthquakes, and tsunamis were identified as potential threats that could severely impact Puerto Rico's public health, medical, and mental/behavioral health systems. Conclusion: The disasters assessed have the potential to immediately overwhelm the public health resources of Puerto Rico exposing deficiencies at various levels of the disaster preparedness, response and mitigation phases. It is important that national emergency plans are based on a comprehensive hazard vulnerability assessment; this will allow proper planning which in turn provide a good distribution of resources and standards of care in case of a disaster. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): We would like to thanks the Puerto Rico Department of Health Office of Public Health Preparedness and Response (OPHPR), for their willingness to collaborate with the information needed for this project. Funding: This project was supported in its entirety by federal funds from the CDC and ASPR, administered by the Puerto Rico Department of Health (PRDOH), Office of Public Health Preparedness and Response. The project was implemented by the UPR-CPHP under contract #2013-DS0383 with the PRDOH. IRB: This project was approved by University of Puerto Rico, Medical Sciences Campus, Institutional Review Board, protocol number A6640113 on February 5, 2013.

A-077 Inventario de Servicios Médicos para la Respuesta de una Emergencia o Desastre en Puerto Rico

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Background & Objectives: Los servicios médicos son parte integral para una respuesta adecuada ante una emergencia o desastre catastrófico. Por esto, es esencial saber con qué facilidades, servicios y equipo médico se cuenta y donde están ubicados. Describir los recursos disponibles en el sistema de servicios médicos, para la respuesta a una emergencia o desastre en Puerto Rico. Methods: Utilizando bases de datos secundarias sobre recursos médicos desarrolladas para el Hazard and Vulnerability Assessment se calcularon las tasas a nivel Isla por cada 100,000 habitantes para hospitales, camas de hospital, cuartos de aislamiento, centros de salud primaria, centros de salud familiar, salas de emergencias, camillas en salas de emergencias, unidades de trauma y salas de urgencias. Results: Puerto Rico cuenta con 68 hospitales, 20 certificados como unidades de cuidado de trauma. Cuentan con 13,556 camas autorizadas de las cuales 10,738 son camas en uso. La tasa para cuartos de aislamiento es de 11.46 (n=427) y para salas de operaciones es de 1.80 (n=152). Existen 56 salas de emergencias, con una tasa de camillas disponibles de 36.6. La Isla también cuenta con 43 centros de salud primaria, 80 centros de salud familiar, y 4 salas de urgencias. El 22.22% de estos servicios se ubican en la Región Metro del Departamento de Salud de Puerto Rico. Conclusion: El inventario de servicios médicos debe ser incluido en el plan integral de preparación y respuesta a emergencias o desastres del Departamento de Salud. Este es una herramienta importante y valiosa para la toma decisiones ante una amenaza o evento catastrófico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Reconocimientos: Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Subvención: Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383.

A-078 El reto de una respuesta coordinada en situaciones de desastre en Puerto Rico

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Background & Objectives: La toma de decisiones en situaciones de desastres se distingue por su complejidad, urgencia e incertidumbre. Es por esto, que resulta crucial la planificación integrada y la disponibilidad de recursos para enfrentar una situación de desastre. En Puerto Rico, son múltiples las agencias que trabajan las funciones primarias y de apoyo para el manejo y respuesta a desastres. Objetivo: Describir los retos que enfrentan dos de las agencias claves con funciones primarias y de apoyo en Puerto Rico para el manejo y respuesta a desastres. Methods: Se utilizaron cuestionarios semi-estructurados administrados a los directores de zona de varias agencias de primera respuesta para recopilar información sobre los retos a los que se enfrentan diariamente al trabajar en emergencias. Esto se realizó como parte de un Estudio de Vulnerabilidad y Riesgo para Puerto Rico. Results: Entre los retos identificados predominan: limitaciones en cuanto a personal, recursos de apoyo (como disponibilidad de ambulancias y sobrecarga de las instalaciones de salud) y la necesidad de la integración de los planes de emergencias, tanto a nivel regional como estatal. Conclusion: Los hallazgos revelan unos retos que urgen sean atendidos en términos de la respuesta a una situación de desastre ya que éstos están presentes en estas agencias al trabajar las emergencias diarias del país. Una respuesta adecuada requiere que se cuente con una política pública que articule y respalde de manera integrada los recursos de las agencias, sobre todo las agencias de primera respuesta en caso de un desastre. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Subvención: Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383.

A-079 Adjuvant effect of Toll-like Receptors Agonists in Genetic Immunization with pA27L against Smallpox

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Background & Objectives: Smallpox is a public threat in case of a terrorist attack. The licensed vaccinia vaccine would be devastating for more than 10 million immune-compromised individuals. We hypothesize that the adjuvant effect of Imiquimod or Resiquimod will enhance the immune response of a DNA vaccine coding for Vaccinia A27L antigen, producing a protective immune response against vaccinia virus in a mice model.Methods: We tested our hypothesis analyzing the cellular-immune response by measuring the IFN-γ production of splenocytes by ELISPOT, the humoral-immune responses measuring total IgG and IgG2a/IgG1 ratios by ELISA, and the TH1 and TH2 cytokine profiles by protein microarray. Results: Our ELISPOT data shows Resiquimod to enhance the production of IFN-γ. Mice immunized with A27L + adjuvants showed an increase in total IgG titer. Moreover, mice immunized with A27L + Imiquimod showed a higher IgG2a/IgG1 ratio. Cytokine analysis shows that IFN-γ increased after the vaccination with A27L + Imiquimod, as compared to non-adjuvanted groups. Conclusion: The proposed vaccination cocktail is augmenting the A27L vaccine-mediated production of IFN-γ on mouse spleens, and increase the humoral response was observed with a TH1-biased. Our vaccine is inducing a TH1 cytokine milieu, amplifying the antigen-specific activation of cytotoxic-T lymphocytes, which is important against viral infections. With this approach people will develop an effective immune protection against smallpox without the hazard of being exposed to live virus. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): PRAABRE: P20RR016470, 8G12MD007583-27 at UCC, G12RR003051 at MSC, UPR Core Labs and MBRS-RISE R25GM061838.

A-080 Characterization of the immune response of Balb/c mice after immunization with L3L gene from Vaccini

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Background & Objectives: In case of a bioterror attack with smallpox, many people would be unprotected and the use of the current vaccine for an immunization campaign would produce serious adverse effects, as it is not recommended for a wide number of the population. In order to overcome this problem

the development of a safe vaccine is crucial. L3L gene encodes for a virion protein required in the transcription of the virus genes. We hypothesize that administration of L3L as a DNA vaccine will induce an antigen-specific immune response. Methods: To validate our hypothesis we analyzed the cell response by ELISPOT assay; cytokine profile was analyzed by protein microarray. Results: Our ELISPOT data show means of 53 and 421 IFN-γ spot-forming splenocytes corresponding to naïve and L3L DNA immunized mice, respectively. The TH1 and TH2 cytokine profiles showed a production of 600 pg/mL of IFN-γ compared to low levels found on naïve mice. Low IL-4 levels were observed in all groups. Antigen-specific lymphocyte proliferation was also observed in L3L-immunized mice as compared to naïve mice. Conclusion: Our vaccine formulation stimulates a TH1 cytokine milieu, enhancing the antigen-specific activation of cytotoxic T-lymphocytes and lymphocyte proliferation, which is crucial in the generation of a protective immune response against viral infections. These results shows an effective immune response in a vaccinia virus-specific DNA vaccination platform, using a novel gene whose immune response has not been fully described. We expect our approach to support the development of a vaccinia virus-free DNA vaccine. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Method Of Grant Support: PRAABRE: P 20 RR016470, 8G12MD007583-27 at Universidad Central del Caribe. G12RR003051 at Medical Sciences Campus, UPR.

A-081 Creative Visualization: Innovative Intervention for Fall Prevention in Older Adults

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Background & Objectives: Falls in the elderly population are a public safety problem. Falls can have devastating consequences such as social deprivation and self-restrictions in everyday tasks associated with aging in place, productive aging, wellness and quality of life. Through this pilot study an evidence based, multifactorial intervention program was designed and implemented with a sample of well elderly. This study investigated the effectiveness of an evidence based program for reducing falls risk behaviors, reduce the fear of falling and increase self-efficacy and fall protection behaviors. Methods: A pre and post test single group design was used, with a sample of 20 older adults, between the ages of 65 to 85 years, living independently and who had experienced a resent fall or who had fear of falling. Assessment tools for the selection of the sample were: mini mental status test, Timed Up and Go (TUG) test, Geriatric Depression Scale, hearing screening, and a Falls Profile Questionnaire. Intervention consisted of a 6 week Creative Visualization and psycho educational program. To determine effectiveness of intervention the following outcome measures were used: Falls Efficacy Scale (FES -I) and Falls Behavioral Scale (FAB) and the Intervention Program Assessment Questionnaire. Results: Statistical analysis of paired t-test and cross tabulation established statistically significant changes in the variables of interest studied, providing evidence of the effectiveness of this pilot multifactorial intervention program. Conclusion: Results of this study support the use of falls prevention programs and provide research evidence of effectiveness of multifactorial focused interventions for the prevention of falls in the elderly population.

A-082 Physicochemical Properties of Ketoprofen Nanostructured Lipid Carries vs Solid Lipid Nanoparticles

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Background & Objectives: During the beginning of 1990's solid lipid nanoparticles (SLNs) were developed and have become an alternative drug carrier system. A second type of lipids nanoparticles was developed known as nanostructured lipid carriers (NLCs), consists of a mixture of solid and liquid lipids. Our hypothesis is that physicochemical properties of nanoparticles depend on composition of lipid phase, pressure applied during homogenization and presence of cryoscopic ingredient. The objective of this research is comparing the physicochemical properties of nanostructured lipid carriers vs. solid lipid nanoparticles. Methods: This study used a simple factorial design of two factors at two levels. The factors are the composition of the lipids and the incorporation of fructose. The physicochemical properties such as: particle size, quantity of the drug entrapment and percent of drug release from both systems were determined. Also SEM, X-ray diffraction, DSC and NMR were determined for the best two formulations. Results: The nanoparticles were of narrow particle size distribution. The best system in relation a particle size was the NLCs with a size less than 1μm. Quantity of Ketoprofen per 100mg of nanoparticles was 19.52mg and 14.12mg, respectively for NLCs and SLNs. Dissolution results showed a controlled release profile. The percent of drug release at 360 minutes for NLCs was 62.1 % and for SLNs was 74.0% at 6 hours of testing dissolution in phosphate buffer (pH=6.80) at 50rpm, 37°C. Conclusion: The nanostructured lipid carriers showed a successfully extended controlled release pattern and a high content of drug. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors thank the Dane O. Kildsig Center for Pharmaceutical Research for funding this research proposal.

A-083 Mechanical Properties and Physical Characterization of Novel Co-processed Pharmaceutical Excipients

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Background & Objectives: Direct compression is the easiest way for tablet compaction. Drugs that are direct compacted require fewer unit operations and less manufacturing time. Also, tablets have higher stability due to less process contamination. However, most drugs show poor compaction by using direct compression, leading to differences in weights, cosmetic defects

and more. Acetaminophen, a poor compactable drug, is generally compacted by dry granulation, leading to excessive time invested during manufacture. Co-processed excipients are two or more excipients combined together by a mechanical process. We hypothesized that co-processed excipients can improve acetaminophen compaction and mechanical properties during direct compression. Objective: This research assesses the physical characterization and mechanical properties of acetaminophen tablets by comparing two different co-processed excipients for direct compression. Methods: The study was a three way factorial design where two different co-processed excipients, Avicel DG and Avicel HFE, were used and characterized in a formulation. Tablets were characterized in terms of physical and mechanical properties in order to select the best two formulations for 500 mg of acetaminophen. Results: Six formulations were designed with a constant dose of acetaminophen of 500 mg. First formulation tablets exhibited uniformity of weight content and over 80% of cumulative percent of drug dissolution. Conclusion: Our results suggest that acetaminophen can be directly compacted with the aid of co-processed excipients and shows appropriate tablet characteristics. More formulations will be tested in the near future. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Thanks to FMC company for the co-processed excipients donations.

A-084 Justicia Ambiental y Distribución Desigual de Amenazas Ambientales en la Región Metro de Salud

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Background & Objectives: A nivel mundial las poblaciones con menos recursos económicos tienden a estar expuestas a mayor cantidad de amenazas ambientales. La vulnerabilidad social es producto de inequidades sociales, factores que influencian la susceptibilidad de ciertos grupos poblacionales e impactan su habilidad de respuesta. Describir la exposición a amenazas ambientales según el ingreso y el nivel de pobreza de la población en la Región Metro del Departamento de Salud. Methods: Utilizando bases de datos secundarias del Hazard and Vulnerability Assessment se realizó un análisis de la población que reside en zonas bajo riesgo de inundación y de deslizamiento del terreno, y en zona de desalojo por tsunami, por categorías de ingreso y de población bajo el nivel de pobreza. Results: Loíza presenta la mayor proporción de población bajo el nivel de pobreza (46.44%). El porciento de población que reside en zonas a riesgo de un deslizamiento del terreno fue bajo para todos los municipios de la Región Metro. Loíza presenta los porcentajes más elevados en cuanto a riesgo de inundación (100%) y población en zonas de desalojo por tsunami (84.43%). En general, las zonas con mayor población bajo el nivel de pobreza presentan también mayor población a riesgo de inundación y de desalojo por tsunami. Conclusion: La distribución desigual de las amenazas ambientales presenta un reto ante desastres ya que la vulnerabilidad de las poblaciones con menos recursos económicos suele ser mayor. Es necesario desarrollar políticas ambientales que incluyan criterios de equidad, a fin de lograr una respuesta efectiva ante las amenazas ambientales. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383.

A-085 La fuga de talento en Puerto Rico: características sociodemográficas de los emigrantes hacia la Flor

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Background & Objectives: El Censo de 2010 mostró un decrecimiento en la población de PR. La cantidad de emigrantes durante este periodo contribuyó considerablemente a este descenso. Florida es el destino principal de estos migrantes. El volumen y características de estos tienen consecuencias para el lugar de origen y el de destino. Methods: El objetivo de esta investigación fue examinar las características sociodemográficas de la población emigrante desde P.R hacia Florida. La fuente de datos fue la Encuesta de Comunidad de Estados Unidos, 2007-2011. El estudio es transversal descriptivo. Results: En el 2010 hubo un aumento en el número de puertorriqueños residiendo en Florida, el segundo estado con mayor número de puertorriqueños. Se estima que para el próximo censo, FL podría superar a N.Y. en número de residentes puertorriqueños. Para el 2010 residían en FL. 847,550 puertorriqueños, representando un 5% de la población total y un 32% del total de hispanos del estado. Estos tienen un nivel educativo alto, más del 35% alcanzó su cuarto año. Estos presentan una estructura de edad joven con una mediana que no sobrepasa los treinta años y una alta concentración en los grupos de edades de 20 a 34. La población emigrante muestra un nivel de empleo de cerca de 80%. Conclusion: La pérdida de personas educadas, jóvenes y productivas es una situación preocupante. La emigración de esta población podría perpetuar la actual recesión económica, y acelera el envejecimiento poblacional en P.R. Este fenómeno apela al desarrollo de políticas públicas dirigidas a retener al capital humano y talento del país.

A-086 Exposición de la Infraestructura Esencial a los Riesgos Naturales y su Importancia en Salud Pública

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Background & Objectives: Las condiciones climáticas y ubicación geográfica de Puerto Rico nos exponen a lluvias intensas y prolongadas que pueden representar amenazas a la infraestructura esencial. La infraestructura esencial incluye instalaciones como carreteras, puentes, hospitales, infraestructura de energía eléctrica y agua, refugios entre otras. Todas estas son vitales para el buen funcionamiento y recuperación efectiva y oportuna luego de un desastre. Muchas de las ciudades y componentes de la infraestructura esencial de Puerto Rico están ubicadas en zonas de inundación y deslizamiento que han generado daños considerables a la salud pública. Además, han tenido impactos económicos considerables en daños a la propiedad, y pérdidas de productos y servicios del país. Este estudio tiene como proposito cuantificar toda aquella infraestructura esencial de Puerto Rico que sea vulnerable o que este ubicada en áreas propensas a inundación o deslizamiento. Methods: Se utilizó el Sistema de Información Geográfica como herramienta de análisis espacial. En adición se crearon medidas descriptivas para comparar la vulnerabilidad de cada Región del Departamento de Salud e identificar la proporción del impacto social, económico y ambiental. Results: Alrededor de un 82% de las infraestructuras esenciales en Puerto Rico están ubicadas en áreas catalogadas como zonas susceptibles a inundaciones o deslizamientos. Un 49% de las infraestructuras críticas se encuentran en áreas de deslizamientos, mientras que un 22% se encuentran en áreas de inundaciones en Puerto Rico. Conclusion: Alguna perturbación sobre estas infraestructuras esenciales tendría un grave impacto en los centros públicos, alteraciones de la vida cotidiana y pérdida o dificultad en la accesibilidad a los servicios esenciales como servicios médicos. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto.

A-087 Vulnerabilidad y Riesgos a los Desastres Naturales y su Impacto en la Salud Pública de Puerto Rico

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Background & Objectives: Los fenómenos atmosféricos como los huracanes, las inundaciones y las tormentas severas han sido responsables de los desastres en Puerto Rico. Estos constituyen una amenaza, que puede provocar un impacto negativo sobre la salud individual y pública. Planteando así grandes retos al sistema de salud pública y a los servicios de salud. El propósito es analizar las amenazas naturales relacionadas a los fenómenos climáticos e hidrológicos que han ocurrido en Puerto Rico. Methods: Se utilizaron las declaraciones de desastres de FEMA (1986-2011) para realizar análisis estadísticos descriptivos, análisis de patrones espaciales con los Sistemas de Información Geográfica y análisis temporales. De esta manera, identificar cuáles son las áreas vulnerables a los fenómenos atmosféricos. Results: En los últimos 25 años, la Isla ha sido declarada zona de desastre en 18 ocasiones. Las tormentas severas resaltan con un 50% en la distribución porcentual a nivel Isla, seguido por los huracanes con un 33% e inundaciones con un 17%. El área central y sur de la Isla muestra una mayor vulnerabilidad a las tormentas severas. Los municipios del Este han sido los más expuestos a los huracanes. Conclusion: Los últimos desastres en Puerto Rico muestran la gran cantidad de víctimas afectadas por estos eventos. Los retos y lecciones derivados de estos eventos deben ser atendidos de manera eficaz para reducir la vulnerabilidad del sistema y las comunidades con el propósito de fortalecer su capacidad para recuperarse rápidamente. Es esencial determinar cuáles son las áreas más vulnerables y para desarrollar planes de prevención enfocados en minimizar daños. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto.

A-088 Patrones espaciales y temporales del dengue en Puerto Rico: Una amenaza continua

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Background & Objectives: La ocurrencia de casos de dengue es un desafío de salud pública que enfrenta cada año Puerto Rico. El dengue es considerado la enfermedad viral más importante transmitida por vector. Este virus ha sido relacionado a condiciones ambientales. Objetivos: Analizar los patrones espaciales y temporales de los casos confirmados de dengue en Puerto Rico durante los últimos 20 años. Methods: Utilizando bases de datos del Departamento de Salud de Puerto Rico, se obtuvieron los casos confirmados de dengue (1992-2011). Se analizaron patrones espaciales y temporales en las regiones de salud de Puerto Rico. Se obtuvo la tasa de incidencia

(por cada 1,000 hab.) para cada municipio, por temporada y año. Results: Durante el periodo de estudio fueron confirmados 51,464 casos. El quinquenio con mayor incidencia de casos fue 2007-2011. El 70% de los casos ocurrió en verano y otoño (temporadas más cálidas y húmedas en la Isla). De los cuatro años epidémicos (1994, 1998, 2007, 2010) el 2010 fue el año con mayor tasa de incidencia. La región de Arecibo del Departamento de Salud presenta la mayor tasa de incidencia mientras que la menor tasa fue en la región de Fajardo. Conclusion: El aumento de casos por infección de dengue amenaza la salud pública e impacta los centros de servicios de salud. El entendimiento de dichos patrones permite prevenir y planificar ante posibles brotes epidémicos. Esto sirve como referencia y arroja base para la aplicación de medidas de control y adaptación que contribuyen al mejoramiento de la calidad de vida de la población. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383.

A-089 Frequency of Photoparoxysmal Response in EEG reports of Puerto Rican children

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Background & Objectives: Despite worldwide knowledge of frequency of PPR(Photoparoxysmal Response) found during intermittent photic stimulation(IPS).No study has identified this frequency in EEGs of pediatric population with seizures in PR, the aim of this study was to determine this frequency to aid in present and future studies. Methods: A retrospective analysis of all EEGS reports from the Division of Pediatric Neurology at Pediatric University Hospital between 2007 and 2013 whereas was performed. Normal response was defined as cortical driving or no response during photic stimulation and abnormal response were defined as generalized spike, polyspike or wave paroxysms during IPS categorized using the Waltz 4 stage grading system. Results: Frequency of normal photo paroxysmal response was 956 for a 98.66 percent. Frequency of abnormal photo paroxysmal response was 13 for a 1.34%.Comparisson of proportions between photoparoxysmal response(PPR) and gender and PPR and age were based on Pearson and Fisher Exact test a p value<0.05 was considered significant. A marginally significant difference (p>0.08) between PPR and age was observed (0-5 year 2.2%), (5-13 year 2.4%), (14-21(0.00%). No significant association was observed between PPR and gender (p=0.72). Conclusion: These findings showed that frequency of abnormal photoparoxysmal response is low as compared as the rest of the world population and similar to Africans. There is a need for modification of existing protocols to improve technique of IPS and to increase the yield of detection of abnormal photo paroxysmal responses and in that way improves management and outcome of patients with epilepsy. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by Group 5S21MD000242 AND 5S21MD00138.

A-090 Evaluation of Mathematica software to control a spatial frequency domain (SFDI) medical imaging mechanisms

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Background & Objectives: The developmentof Spatial Frequency Domain Imaging (SFDI) techniques offers potential low cost medical application. Performance is subject to graphical and computer processing solution controlling the mechanical unit. The software Mathematica (Wolfram Research, Campaign, Ill) provides powerful computational tools allowing rapid hardware interfacing. This research evaluated the performance capability of integrated imaging and environmental sensors units interrogating phantom tissue samples. Methods: An SFDI prototype was constructed in the laboratory. The imager mechanism included one CCD camera (Panasonic KR402), one CMOS webcam (Logitech HDPro_C920), and LCD projector (EPSON EMP-53). Environmental sensors monitoring the imager included a temperature, ultrasonic and gyroscope probes integrated to microprocessor prototyping kit (ArduinoUNO_Mega). Ten silicone-based tissue phantoms were prepared referenced to five control samples and five colored using distinct Indian ink with known optical properties. Image frames and environmental data processed in Mathematica 9.1 using C# custom code under Windows O.S 7.0. Results: Custom code demonstrated synchronized image capture to environmental data acquisition. Sequential frames where processed using available image processing libraries. Gyroscope and temperature sensor provided spatial information normalize and assess for repeatability with standard deviation of 0.85. Standard deviation was .70 for image, .89 for temperature and .96 for gyro. Frame processing delay average 3 seconds with a S.D. 1s. Conclusion: Our statistical analysis on Image processing, environmental data was limited to interface hardware. Image capture is dependent on image capture units. Software show a graphical display delays with impact in time processing. Further research is necessary to enhance GPU parallel processing. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by private donations. There are no conflict of interest.

A-091 Identification of putative IL-3 3'UTR-interacting miRNAs in Jurkat T-cells

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Background & Objectives: MicroRNAs (miRNAs) are conserved regulators that bind to complementary sequences in the 3'-untranslated region (3'-UTR) of RNA targets mediating translational repression and/or mRNA degradation. Previous bioinformatics analysis revealed that putative microRNAs target the Interleukin-3 (IL-3) 3'-UTR, which is a pleotropic cytokine that promotes the proliferation and differentiation of pluripotent hematopoietic stem cells. Aberrant expression of IL-3 and miRNAs can be detrimental and contribute to different hematological malignancies. A characteristic trait of these malignancies is that the expression of specific miRNAs is downregulated. We are interested in exploring the expression patterns of IL-3 3'-UTR-interacting microRNAs that might be mediating post-transcriptional regulation of this transcript. This research intends to test the following hypothesis: If bioinformatics analysis reveals that miR-15a, miR-424 and miR-342-3p recognize a regulatory sequence in the 3'-UTR of IL-3 mRNA, then the expression patterns of these miRNAs is modulated upon T cell activation. Methods: We performed qRT-PCR to monitor the expression patterns of these miRNAs in activated Jurkat T cells. Results: Our results indicated that miR-15a, miR-424 and miR-342-3p are upregulated at 12 and 24hrs of activation. Notably, miR-15a exhibits a greater downregulation at 6hr of activation in comparison to miR-342-3p and miR-424. All miRNAs exhibited a reciprocal expression pattern with IL-3, which its expression is higher at 6hrs than at 12 and 24hrs of activation. Conclusion: These expression patterns suggest that miR-15a, miR-342-3p and miR-424 are relevant in the post-transcriptional regulation of IL-3. Future work will focus on elucidating the role of these miRNAs in IL-3 expression and cancer. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by grants from the National Institutes of Health to Dr. Carlos I. González (GM008102-3052, KO1 HL-04355-05, U54 CA96297-03, P20 RR 016174) and UPR Institutional Funds (PES, FIPI). Also, Marina Martinez-Vargas & Marimar Hernández are supported by the Research Initiative for Scientific Enhancement (RISE Program, UPR-MSC).

A-092 Frequency of Photoparoxysmal Response in EEGs reports of Puerto Rican Childrenermined i

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Background & Objectives: Despite worldwide knowledge of frequency of PPR(Photoparoxysmal Response) found during intermittent photic stimulation(IPS). No study has identified this frequency in EEGs of pediatric population with seizures in PR the aim of this study was to determine this frequency to aid in present and future studies. Methods: A retrospective analysis of all EEGS reports from the Division of Pediatric Neurology at Pediatric University Hospital between 2007 and 2013 whereas was performed. Normal response was defined as cortical driving or no response during photic stimulation and abnormal response were defined as generalized spike, polyspike or wave paroxysms during IPS categorized using the Waltz 4 stage grading system. Results: Frequency of normal photo paroxysmal response was 956 for a 98.66 percent. Frequency of abnormal photo paroxysmal response was 13 for a 1.34%. Comparison of proportions between Photoparoxysmal Response(PPR) and gender and PPR and age were based on Pearson and Fisher Exact test a p value<0.05 was considered significant. A marginally significant difference (p>0.08) between PPR and age was observed (0-5 year 2.2%), (5-13 year 2.4%), (14-21(0.00%).No significant association was observed between PPR and gender (p=0.72). Conclusion: These findings showed that frequency of abnormal Photoparoxysmal Response is low as compared as the rest of the world population. There is a need for modification of existing protocols to improve technique of IPS and to increase the yield of detection of abnormal photo paroxysmal responses and in that way improves management and outcome of patients with epilepsy. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by Group NCMHD–NIH GRANTS 5S21MD000242 AND 5S21MD00138.

A-093 The Evaluation of Orthostatic Hypotension in People with Human Immunodeficiency Virus; a Pilot Study

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Background & Objectives: People diagnosed with HIV may exhibit orthostatic hypotension (OH) as a consequence of infection and secondary effects of medications. Such impairments are attributed to autonomic nervous system (ANS) impairments deficiencies. By definition OH is a fall in blood pressure of at least 20 mmHg systolic or 10 mmHg diastolic after either 1 or 3 minutes of standing after the participant changed from the supine or to the upright position. The purpose of this study is to assess OH during a balance sensory condition test and evaluate the role of the cardiac autonomic system, in terms of blood pressure (BP) and heart rate (HR), during this balance task. We hypothesized that blood pressure and heart rate will rise with an increase in postural instability, thus revealing orthostatic hypotension. Methods: Ten HIV positive subjects were recruited from a community health center in the San Juan Area. BP and HR were measured after 5 minutes sitting, immediately after standing up and (1 minute after) during the sen-

sory condition test (STC). Results: A T test was used to assess the difference between BP sitting and BP standing and standing versus standing during a balance test condition. HR was also evaluated the same way. Results showed no significant difference between BP test, however they was an increase of more than 10mmHg in diastolic BP. Nevertheless, HR standing versus standing during the balance test was significantly different ($p<.05$). Conclusion: This study shows that the ANS may be impaired in people with HIV, however confirmation in other studies is necessary.

A-094 The effects of ischemic- and angiotensin II-preconditioning on protein acetylation in mitochondria

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Background & Objectives: Sirtuins are NAD+ dependent deacetylases that regulate protein activity through acetylation/deacetylation. Mitochondria contain three of seven sirtuin isoforms. Mitochondrial sirtuins play an important role in mitochondrial metabolism by regulating the activity of enzymes involved in the Krebs cycle, electron transport chain, urea cycle, and antioxidant defense. Our most recent studies demonstrated that ischemic preconditioning (IPC) and angiotensin II preconditioning (APC) exert synergistic cardioprotective effects against severe ischemia/reperfusion (IR). In this study, we examined whether protein acetylation in mitochondria is affected by IPC, APC or IPC+APC. Methods: Male rat hearts were isolated and perfused according to the Langendorff method in the following conditions: IR, IPC, APC, or IPC+APC. At the end of reperfusion, homogenate and mitochondria were isolated from the hearts and frozen for protein analysis. Expression of acetylated proteins and mitochondrial sirtuins were analyzed by SDS-PAGE Western blotting using acetylated lysine and sirtuin antibodies. Results: IR-induced total mitochondrial protein acetylation was attenuated by IPC. This effect, however, was not observed for APC or IPC+APC. The latter indicates that APC blocks the attenuating effect of IPC on protein acetylation. Furthermore, no change in total homogenate-protein acetylation was observed in all four groups. Conclusion: Cardioprotective effects of IPC are associated with deacetylation of mitochondrial proteins. This process appears to be modulated by Ang II and results in increased NAD+/NADH ratio, which, in turn, increases the activity of SIRT3, a major isoform of mitochondrial sirtuins. Future studies will focus on clarifying the relationship between APC and mitochondrial protein acetylation/deacetylation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NHLBI-NIH SC1HL118669 grant (S.J.), MBRS-RISE Program grant R25-GM061838, and in part by the RCMI - NIH grant G12RR03051.

A-095 Incorporation of Silver to Microcrystalline Diamond in Fabrication of Bactericidal Materials

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Background & Objectives: Nosocomial infections are expensive and responsible for millions of deaths per year. To decrease this problem innovative microcrystalline diamond films with silver nanoparticles incorporated (MCD-Ag) were successfully elaborated, characterized chemically and physically, and tested for antibacterial capacity. Recent studies demonstrated that pure silver films are more effective antibacterial agents compared to microcrystalline diamond (MCD) films. Therefore, we hypothesized that the incorporation of silver nanoparticles to microcrystalline diamond films will increase the films capacity to inhibit bacterial growth. Methods: The elaboration of the ground-breaking MCD-Ag films was achieved via the technique of Hot Filament Chemical Vapor Deposition. The chemical and physical characteristics of the MCD-Ag films were assayed through Transmission Electron Microscopy (TEM) and Raman Spectroscopy., Additionally, Scanning Electron Microscope (SEM) spectroscopy allowed us to obtain imaging of the colonial behavior of the P. aeruginosa on the surfaces of the MCD-Ag films. In order to perform the bacterial characterization of these MCD-Ag films, a rigorous protocol for bacterial culture was executed and the development of the bacterial populations was assessed through growth curves and absorbance measurements with an Ultraviolet-visible Spectrophotometer. Furthermore, the technique of Bacterial Transfer was used to conduct a temporal qualitative analysis of the MCD-Ag bacterial inhibition properties. Results: The incorporation of silver nanoparticles to the microcrystalline diamond films yielded reduced bacterial growth within 24 hours. Conclusion: Silver nanoparticles have a significant impact in the inhibition of the growth and formation of bacterial colonies on the surface of mycrocrystalline diamond films. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research is supported by NASA EPSCoR, NASA, UPR-RP, and UPR-Bayamon.

A-096 Nivel de Preparacion del Adulto Mayor dado de alta para Recibir Cuidado de Salud en su hogar

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Background & Objectives: Los estudios evidencian que el adulto mayor no recibe la preparación adecuada al ser dado de alta hacia su hogar. Esto causa readmisiones hospitalarias ,complicaciones de salud y aumenta los costos de salud nacional. Examinaremos cuanta preparación indican nuestros pacientes que recibieron al ser dados de alta. Methods: Muestra de 30 pacientes

visitados en sus hogares con la agencia que ofrece los servicios de salud en el hogar. Se administro el cuestionario CTM-15 del Dr. Coleman. La data se analizo con estadística descriptiva de porciento, media y desviación estándar. Results: El 67% expreso haberse sentido preparado al ser dado de alta versus 33% que dijeron no haberse sentidos preparados. Conclusion: El proceso de planificar servicios de salud en el hogar al adulto mayor le ayuda a éstos sentir un mayor nivel de preparacion.

A-097 Perspectivas del significado social del adulto mayor en Puerto Rico: adultos viejos y profesionales

Marlén Oliver-Vázquez, Edgardo Ruiz-Cora. Universidad de Puerto Rico Recinto de Ciencias Médicas

Background & Objectives: La población de 65 años o más ha aumentado rápidamente y es el grupo de mayor crecimiento en Puerto Rico. Sin embargo, la visión de los mayores que prevalece refleja actitudes negativas que afectan su bienestar, la convivencia intergeneracional y atención a los mayores. Este estudio examina el significado de la vejez y del adulto mayor en la sociedad desde la perspectiva de adultos de 65 años o más y profesionales de la gerontología. Methods: Se llevaron a cabo 60 entrevistas cualitativas en dos grupos: 30 profesionales en gerontología y 30 personas de 65 años o más, del área metropolitana en Puerto Rico. La preguntas semi estructuradas trataban de los siguientes temas: construcción social de la vejez, consecuencias, y propuestas para valorar la vejez y mejorar la convivencia entre generaciones. Las entrevistas fueron grabadas, transcritas y codificadas para identificar temas centrales y emergentes. Se utilizó la teoría "Grounded" para la interpretación de los datos. Results: La sociedad percibe vejez como etapa de deterioro y los adultos viejos como una carga. Ambos grupos reconocen atributos positivos de experiencia, sabiduría y la función como mentores. El significado de la vejez radica en su aportación para guiar a los mas jóvenes, apoyar la familia y colaborar con la sociedad. Conclusion: Es imperativo reconstruir una visión apropiada, digna y justa del adulto mayor que valore y reconozca su contribución a la sociedad y a las generaciones futuras. Se requiere desarrollar política pública que valore la vejez, promueva la participación social y el desarrollo pleno del adulto mayor.

A-098 Validity of a 2D Motion Analysis System for the Evaluation of Fall Related Walking Tasks; Ramp Task

Nairoby Babilonia, Alexis Ortiz, Martín G. Rosario. University of Puerto Rico Medical Sciences Campus; Texas Woman's University

Background & Objectives: Spatio-temporal gait parameters are commonly used for the assessment of risk factors predisposing to health-related impairments, lower extremity injuries, or as outcome measure to evaluate effectiveness of therapeutic interventions. The purpose of this study is validity of ankle range of motion (ROM) during ascending a ramp between a three-dimensional motion analysis system (Vicon) and a two-dimensional system (Dartfish™). Methods: Ten young healthy adults performed five trials of the ramp task. The three and two-dimensional systems used in this investigation were Vicon Nexus using six cameras at 120 Hz (Vicon Motion System, Denver, CO) and Dartfish Pro Suite™ using a 30-Hz commercial camcorder. Both systems measured ankle ROM during ascending a ramp. Pearson correlation coefficient was used to establish the concurrent validity between systems. Results: Pearson correlation coefficients between Dartfish™ and Vicon for the average of four trials are .27 for ankle ROM. Conclusion: A two-dimensional system is not comparable to a three dimensional system for analyzing ankle ROM during ascending a ramp obstacles. However, more studies are encouraged focusing in different camera angle and a larger sample for instances. In addition, future studies could explore the correlation between the systems in variables like step and stride length and cadence within the same task.

A-099 Stair Task; Validity of a Two Dimension Motion Analysis System

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Background & Objectives: Spatio-temporal gait parameters are commonly used for the assessment of risk factors predisposing to health-related impairments, lower extremity injuries, or as outcome measure to evaluate effectiveness of therapeutic interventions. The purpose of this study is to establish the validity of ankle range of motion (ROM) during ascending a single stair step between a three-dimensional motion analysis system (Vicon) and a two-dimensional system (Dartfish™).
Methods: Twenty young healthy adults performed five trials of the stair task. The three and two-dimensional systems used in this investigation were Vicon Nexus using six cameras at 120 Hz (Vicon Motion System, Denver, CO) and Dartfish Pro Suite™ using a 30-Hz commercial camcorder. Both systems measured ankle ROM during ascending the stair. Results: Pearson correlation coefficients between Dartfish™ and Vicon for the average of four trials are .13 for ankle ROM in a single stair step task. Conclusion: A two-dimensional system is not comparable to a three dimensional system for analyzing ankle ROM during ascending stair task. However, more studies are encouraged focusing in a different camera angle and a larger sample of participants for example.

A-100 Novel Gene Involved in Early development of PDAC

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Background & Objectives: Pancreatic ductal adenocarcinoma (PDAC) is the fourth leading cause of cancer death in the US and is commonly associated with oncogenic K-Ras (K-RAS-G12V) expression. Presence of oncogenic K-Ras is associated with the initiation and progression of PDAC. Although, stu-

dies have shown that oncogenic K-Ras expression is associated with many aggressive and metastatic cancers, it is still unclear what genes are affected early in cancer initiation. Therefore, we aim to discover genes that increase expression early after pancreatic oncogenic K-Ras activation. Methods: We used an inducible mouse model that overexpresses oncogenic K-Ras by crossing Cre regulated mutant K-RasG12V and acinar cell specific tamoxifen regulated Cre-recombinase. This model develops pancreatic fibrosis three days after K-Ras activation. Microarray analysis of pancreas tissue at different times after K-Ras activation was performed. Real-time PCR and western blot analysis was used to confirmed up-regulated genes. Moreover, human PDAC cell lines were used. Results: We found that dual-specificity phosphatase 5 (DUSP5) mRNA was up-regulated three days after K-Ras activation. Furthermore, DUSP5 gene expression significantly increased in the pancreas over time after K-Ras activation compared to controls. Moreover, DUSP5 mRNA expression levels correlated strongly with mice pancreas tissue protein levels. However, DUSP5 mRNA and protein levels were variable in cell lines. Conclusion: We found that DUSP5 is significantly up-regulated in the pancreas after oncogenic K-Ras activation in mice. There is limited knowledge of the role of DUSP5 in PDAC. Therefore, further studies must be conducted to determine the significance of this gene in PDAC initiation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This presentation is supported by the National Cancer Institute through the U54 CA096297/CA096300: UPR/MDACC Partnership for Excellence in Cancer Research Training Program.

A-101 Native And Endemic Plants From Puerto Rico: A Source For New Antibacterial Agents?

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Background & Objectives: Finding new antibiotics has become a very important task during the last decades. The diminished rate of discovery of new molecular scaffolds joined to the millions affected by common pathogens, and the resilience these microorganisms have developed toward commercially available antibiotics make this a critical health matter. This project is centered in the identification of Puerto Rican native and endemic plants exhibiting antibacterial activities against six pathogens related to common nosocomial infections. Although the plant kingdom has been pivotal in the development of new medicines, plants that are native or endemic from Puerto Rico have not been fairly scrutinized for their bioactive agents. Methods: After the collection and authentication of the plant material, we perform a solid/liquid extraction with the polar solvents water and methanol, for 24hrs. We then analyze the antimicrobial activity of each crude extract against Pseudomonas aeruginosa, Staphylococcus aureus, Salmonella typhimurium, Escherichia coli, Serratia marcescens and Shigella sp. using the disk diffusion method. Results: Inhibition zones between 9 to 32mm have been observed for some of the plants within our collection. Conclusion: We could prove that some native and endemic plants from Puerto Rico can be a source for new antibacterial agents. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by MBRS-RISE Program, grant number 5R25GM075348-08.

A-102 Molecular Characterization of Metabolic Diseases Among Puerto Ricans

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Background & Objectives: Rare metabolic diseases prevalence may vary among ethnic groups given variable genetic background. Knowing this information may allow to customizing the universal newborn screening (NBS) to specific population needs. In PR, the prevalence of metabolic disease is unknown. Recently, the PR-NBS program began screening for metabolic disorders. We aimed to establish incidence of metabolic disease and associated mutations among Puerto Rican newborns. Methods: Cross-sectional study analyzing dry blood spots samples of newborns diagnosed with metabolic disease from July 2010-July 2013. Primers specific for each gene were designed for PCR amplification and sequencing. Results: We have identified two cases of Very Long-Chain acyl-CoA Dehydrogenase deficiency in which a common insertion on exons 3,4,5 was identified. One case of OTC (urea cycle defect) was found to have a novel mutation in exon 2. Ten cases had phenylketonuria, all sharing polymorphism areas in exons 3, 7, 11 and 12. Four cases of Short-Chain -3-Hydroxyacyl-CoA Dehydrogenase, 3 cases of Medium-Chain Acyl-CoA Dehydrogenase Deficiency, 2 cases of Citrullinemia, 2 cases of Maple syrup urine disease, 2 cases of Nonketotic hyperglycinemia and 1 case of 3-Hydroxy-3-Methylglutaryl-CoA lyase were identified. Conclusion: There is a higher incidence of metabolic disorders among Puerto Ricans which may be the result of our unique admixture. We have identified new pathogenic mutations causing these metabolic diseases. In this setting, it is important to develop genetic counseling programs to reduce the incidence of metabolic disorders, earlier diagnosis to reduce and prevent mortality, and disability, and identifying genetic mutations specific to Puerto Ricans. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Funds provided by Puerto Rico Center for Inherited Diseases and Puerto Rico Newborn Screening Program.

A-103 Intercalation of Anticancer Durg into Zirconium Phosphate Nanoparticle

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Background & Objectives: Anticancer drugs based on the anthracycline antibiotics are being used in chemotherapy. Doxorubicin works by insertion in the DNA disturbing the function of the Topoisomerase II avoiding the DNA transcription and consequently the replication process in cancer cells. Although doxorubicin is an effective anticancer drug it also has acute side effects because it does not distinguish between cancer cells and healthy cells. The aim of this project is to create a drug delivery system by intercalating doxorubicin in nanoparticles of the layered inorganic compound zirconium phosphate (ZrP) to kill cancer cells taking advantage of the enhanced permeability and retention effect to provide selectivity. Methods: X-Ray Powder Differaction (XRPD), Infrarred Spactroscopy (IR), Thermogravimetric Analysis (TGA) and SEM-EDS have been performed to characterize the intercalated product. Results: The intercalation of doxorubicin in ZrP produces a new phase with an interlayer distance of 20.1 Å. Conclusion: This reperesents a successful intercalation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Characterization studies as well as studies with cancer cell lines performed in collaboration Texas A&M University and Medical Science Campus. This project had been sponsored by MARC Program, NASA Space Grant Consortium and Bridge to the Graduate Studies Program.This project had been sponsored by MARC Program, NASA Space Grant Consortium and Bridge to the Graduate Studies Program.

A-104 Vulnerabilidad Social del Riesgo a Tsunami en Región Metro del Departamento de Salud de Puerto Rico

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Background & Objectives: Los desastres no responden únicamente a componentes naturales, sino a vulnerabilidades preexistentes en las sociedades. La vulnerabilidad social, en sí, representa la incapacidad de individuos o grupos colectivos para enfrentar, sobre llevar y responder de manera proactiva ante cualquier fenómeno natural de gran magnitud. Describir la vulnerabilidad social de la población a riesgo de la Región Metro del Departamento de Salud (DS) de Puerto Rico ante un evento de desastre por tsunami. Methods: Utilizando bases de datos secundarias de un Estudio de Vulnerabilidad y Riesgo para Puerto Rico, se adquirió información socio-demográfica sobre las poblaciones a riesgo provenientes del Censo 2010 a la escala geográfica de bloque censal para la Región Metro del DS. El análisis de caracterización, ubicación y dispersión geográfica de la población se generaron utilizando los sistemas de información geográfica. Results: Se estima en 81,477 personas la población a riesgo de tsunami por su lugar de residencia en la Región Metro del DS donde 4,835 son menores de 5 años, 13,179 son personas mayores de 65 años y 6,623 son mujeres jefas de familia. Además, dentro de la zona de riesgo se encuentran múltiples facilidades esenciales para el proceso de recuperación luego de un desastre. Conclusion: El perfil sociodemográfico de la población, indican un alto grado de vulnerabilidad. Así mismo, la Región Metro del DS enfrenta grandes retos para una respuesta adecuada ante un evento de tsunami por la cantidad de instalaciones esenciales que se encuentran en dicha zona, entre estos hospitales, aeropuertos y puertos marítimos del país. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Agradecemos a la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico, por su disposición a colaborar con la información necesaria para realizar este proyecto. Este proyecto fue subvencionado en su totalidad por fondos federales del Center for Disease Control and Prevention (CDC) y Office of the Assistant Secretary for Preparedness and Response (ASPR) del U.S. Department of Health and Human Services (USDHHS), administrados por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud de Puerto Rico bajo contrato #2013-DS0383. Este proyecto fue aprobado por el Comité de Revisión Institucional de la Universidad de Puerto Rico, Recinto de Ciencias Médicas, bajo el número de protocolo A6640113 el 5 de febrero de 2013.

A-105 Electrochemical characterization of ferrocene derivatives intercalated into zirconium phosphate layers

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Background & Objectives: Ferrocene Fe(C5H5)2 is a organometallic chemical compound that has two cyclopentadienyl rings bound on opposite side of a central iron atom which has been used as an electron mediator in amperometric sensors. This has encouraged the synthesis and electrochemical characterization of many ferrocene derivatives. Zirconium bis(monohydrogen orthophosphate) monohydrate (Zr(HPO4)2.H2O, α-ZrP) best known as zirconium phosphate (ZrP) is an inorganic layered nanomaterial. The highly hydrated phase of ZrP known as the θ-phase, is an acidic ion exchanger with an interlaminar distance of 10.3 Å that has been used for the immobilization of several photo-, bio- and redox compound. Three 3-ferrocenyl chalcones derivatives (H, 3,4-Cl and 4-Cl) have been intercalated in the ZrP layers. Methods: Electrochemical characterization of the intercalated derivatives have been done using a three electrode cell system, carbon paste electrode as working electrode, Ag/AgCl (3M NaCl) as reference electrode and nichrome wire as counter electrode. Results: The cyclic voltammetry analysis of the –H and 4-Cl derivatives showed formal potentials of (529 ± 1) mV and (547 ± 15) mV at 100 mV/s respectively. The CV anodic signal in the 3,4-Cl derivate was under the LOD and the formal potential could not be determined. The OSWV analysis

showed oxidation potentials for -H, 3,4-Cl and 4-Cl of 508 mV, 544 mV and 552 mV respectively. Conclusion: We are currently working on optimizing the intercalation of the ferrocene derivatives in order to understand the interaction with the ZrP layers.

A-106 Edad, pobreza y discapacidad en los veteranos de Puerto Rico 2010-2012

Alejandro Guerrero, Ana Luisa Dávila. Universidad de Puerto Rico Recinto de Ciencias Médicas

Background & Objectives: La población de veteranos en Puerto Rico está estimada en un 3.9% de los civiles mayores de 18 años, con aproximadamente 109,250 veteranos residiendo en la isla en el período de 2010-2012. Esta población frecuentemente experimenta obstáculos en su transición a la vida civil. Nuestro objetivo es determinar si existe una relación entre la variable demográfica "edad" y las categorías "pobreza" y "pobreza con discapacidad". Methods: Nuestro método consiste en dividir esta población en dos grupos por edad (18-64 y 65+) y analizar el cruce de las variables en la base de datos del Puerto Rico Community Survey, para determinar si existen diferencias entre ambos grupos y el nivel de significancia de las mismas ("chi-square"). Results: Entre los resultados se destaca que de 49,385 veteranos de 18-64 años, 9,627 se encuentran bajo el nivel de pobreza (19.49%) y entre éstos, 2,882 reportan algún tipo de discapacidad. Por otro lado, entre los 58,958 veteranos mayores de 65 años, 10,428 se encuentran bajo el nivel de pobreza (17.69%), de los cuales 5,697 reportan algún tipo de discapacidad. Las diferencias observadas entre ambos grupos son estadísticamente significativas. Conclusion: El grupo de 18-64 años tiene menor proporción de "pobres discapacitados" que el grupo de mayores de 65. Los niveles de significancia encontrados implican que la variable "edad" demuestra una relación con respecto a la categoría "pobreza", pero más aún para la categoría combinada "pobreza con discapacidad". Aún así, existen otras variables (ej. sexo, tipo de vivienda, etc.) que también inciden en esta relación.

A-107 Enhancement of Polyunsaturated Fatty Acid Yields in E. coli through Genetic Engineering

Melissa C. Ortiz, Abel Baerga. University of Puerto Rico Medical Sciences Campus

Background & Objectives: Polyunsaturated fatty acids (PUFAs) are important natural products for the maintenance of human health. The production of PUFAs in some strains of bacteria takes place through the activity of an enzyme complex that is similar to the polyketide synthases (PKSs) which contains all the partial activities typically associated with fatty acid production. Our laboratory has characterized the partial activity of some of the enzymes in this unique pathway. Introduction of these enzymes into Escherichia coli results in only modest levels of PUFA production. In an effort to increase the yields of PUFA in E coli cultures we have co-expressed the PUFA enzymes with exogenous enzymes that are expected to complement the PUFA pathway. Methods: Towards this goal, we transformed E. coli DH5α with pEPAΔ1,3,4,9 (a plasmid consisting of 5 ORFs of Shewanella sp. strain SCRC2738 necessary for the production of the eicosapentaenoic acid) plus an additional gene encoding either: 1) acyl carrier protein (ACP), 2) a thioesterase (Orf6), 3) a dehydratase (DH) or 4) a putative transcriptional regulator of fatty acid production (pfaR). Results: Preliminary results show that we have been able to co-transform E. coli with combinations of these genes. The phenotype of one of the transformants, pEPA-pfaR, is different from the rest as shown by its liquid culture and esterification colors. Conclusion: The compounds that are produced by the joint activity of these artificial clusters have been isolated and are waiting for GC-MS analysis. These ongoing efforts will add tools in the search for much-needed sustainable sources of PUFAs. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by National Science Foundation (NSF) grant CHE0953254 to Abel Baerga.

A-108 Role of Admixture in a Pharmacogenetic-driven Warfarin Dosing Algorithm in Puerto Ricans

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Background & Objectives: Warfarin is the current standard-of-care in oral anticoagulant for thromboembolic disorders. Individual's unique genetic make-up plays a fundamental role in the warfarin dose variability. CYP2C9 and VKORC1 genotypes have been shown to account for 45% of response variability in different populations, but this information currently lacks for Puerto Ricans. The objective of this study is to develop a Puerto Rican customized pharmacogenetic-driven warfarin dosing algorithm using a learning sample of patients with several thromboembolic problems from the VACHS. Methods: This was a single-center pharmacogenetic study in 163 Puerto Rican patients on stable warfarin therapy. A multiple linear regression analysis was performed using maintenance warfarin dose as the dependent variable and following a stepwise addition and backward elimination regression procedures. After considering the effect of genotypes, we also considered clinical variables and Vitamin-K intake as potential regressor variables that independently explain warfarin dose variation. Results: A novel warfarin-dosing algorithm for the VACHS Puerto Rican population was developed using a derivation cohort of 138 patients and explained 65% of variability based on pharmacogenetic data and a novel admixture variable. Our model showed to be more precise for determining low and intermediate doses. We also compared the predictability of the developed pharmacogenetic algorithm with similar models derived by Lenzini and IWPC. Both resulted in poor predictability (R2 34% and 11%) of the warfarin dose in Puerto Rican patients in comparison to our algorithm. Conclusion: We generated and validated a Puerto Rican-specific pharmacogenetic algorithm for warfarin dosing with an R2 of 65% that included an admixture variable.

A-109 Descriptive study of medication therapy management programs in Puerto Rico

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Background & Objectives: Medicare Prescription Drug, Improvement, and Modernization Act of 2003 required all Part D sponsors to include Medication Therapy Management Programs (MTMPs). Little is known about these programs in Puerto Rico. The purpose of this study is to describe the perspective on MTM services of Part D Sponsors in PR and how they were provided in 2012. Methods: A survey was sent by email to all Medicare Part D Sponsors in PR. The questionnaire assessed the required eligibility criteria for beneficiaries and a description of MTM services in 2012. SPSS Statistics was used for statistical analysis. Results: Eight of nine sponsors completed the survey. In 2012, 47.6% of all eligible beneficiaries received an intervention. All sponsors required beneficiaries to have at least 3 chronic diseases and 7 sponsors required the use of eight Part D covered medications for eligibility. Most programs used a combination of face to face and telephone consultations and all provided beneficiaries with an action plan and a personal medication list. Pharmacists were the main providers of MTM services. The main barrier associated with MTM was a lack of perceived value to patients and the main strength was an increase in patients' medication adherence. Conclusion: Medicare Part D sponsors in PR met the minimum requirements for MTM services in 2012. Less than 50% of eligible beneficiaries received an intervention. MTMPs have shown to improve patient adherence and persistence with their therapy regimen, and is perceived by sponsors as a valuable service to enhance their rating stars. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors of this abstract have nothing to disclose concerning possible financial for personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this abstract.

A-110 Antimicrobial Properties of Fungi and Native Medicinal Plants from Puerto Rico

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Background & Objectives: Common bacterial infections are quickly developing resistance against the existing arsenal of medicinal weapons. The diminished rate of discovery of new antibiotics joined to the millions of people affected worldwide by infectious pathogens represents a serious threat to global public health. Therefore, efforts to find new antibiotics are very valuable in times of scarcity. In our investigation, native fungi and plants that are traditionally used in Puerto Rican folkloric medicine are collected, extracted, and screened against seven bacterial lines: Escherichia coli, Serratiamarcescens, Bacillus subtilis, Staphylococcus aureus, Salmonella typhimurium, Pseudomona aeruginosa, and Shigella sp. The overall purpose of this project is to detect antimicrobial activity in methanolic and aqueous extracts from fungi and native medicinal plants. Methods: The preliminary screenings are performed to identify sources with medicinal potential for the development of new antibacterial agents. Those that have not been scrutinized for their bioactive chemical compounds (determined by literature and data base examination) will be submitted to a bioassay guided isolation scheme for the identification of new antibiotic molecules. Results: Until now, we have been able to identify several plants (e.g. Momordica charantia, Alpinia zerumbet,) and fungi (e.g. Xylaria sp.) which inhibit the growth of some of the tested bacteria. Conclusion: Twenty one of the medicinal plants selected, exhibited some kind of antibacterial activity (inhibition zones > 9mm). Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the Departments of Chemistry and Biology of the University of Puerto Rico at Humacao and Dr. Francisco A. Fuentes' Microbiology Laboratory.

A-111 Emergency Department bedside ultrasound aid in the diagnosis of a patient with hypotension

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Background & Objectives: Emergency ultrasound is an imaging modality with a range of benefits in emergency medicine. It is rapid, safe, noninvasive and requires no contrast media or any special patient preparation. Benefits include earlier identification of life-threatening conditions and faster patient care. Emergency ultrasound can be used as an extension of the clinical examination to rule in or rule out key diagnosis in specific clinical settings. We present the case of a 55y/o male with history of HTN, DM who comes to ED with malaise and hypotension. Past medical history pertinent for gradual development of poor appetite and shortness of breath. Physical Exam was pertinent for hypotension, diastolic murmur, and mild rales. Methods: A bedside Tran thoracic ultrasound was done by the Emergency Physician and revealed a large atrial myxoma. Results: Bedside ultrasound finding was confirmed by an echocardiogram and Cardiology Consult. Patient was admitted and follow up with surgeon was arranged for definitive care. Conclusion: Atrial myxomas are found in approximately 14-20% of the population and can lead to embolization, intracardiac obstructions, conduction disturbances and lethal valve obstructions. Although quite rare, left atrial myxomas account for 80% of all cardiac tumors. Diagnosis is often difficult due to the wide array of presenting symptoms. This patient didn't present with the common symptoms associated with an atrial myxoma, which may include chest pain, dyspnea, orthopnea, peripheral embolism or syncope. Emergency bedside ultrasound provided substantial advantages in detecting intracardiac tumor and early diagnosis helped prevent complications. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): No identifiers will be

used in the case presentation. Written informed consent was obtained from the patient for publication of this case report and any accompanying images. No conflict of interest were identified.

A-112 Mantle Cell Lymphoma Mimicking B-cell Prolymphocytic Leukemia

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Background & Objectives: Mantle cell lymphoma (MCL) is a non-Hodgkin B- cell lymphoma that commonly presents with generalized lymphadenopathy, hepatosplenomegaly, and occasional leukemic phase. Usual mantle cell lymphoma cells are small to medium size with inconspicuous nucleoli, but a pleomorphic blastoid variant may resemble prolymphocytes with prominent nucleoli. Methods: We report a case of a 50 year old male presenting with progressive weakness, fatigue, marked leukocytosis, and a cutaneous lesion. Results: The bone marrow biopsy, bone marrow aspirate and peripheral smear (over 1 million white blood cells) were morphologically consistent with Prolymphocytic leukemia, however, immunohistochemistry studies done on the skin biopsy were consistent with MCL. The patient showed rapid deterioration with death occurring four months after the diagnosis. Conclusion: Although exceedingly rare, this aberrant morphological presentation of MCL must be recognized so the patient can receive adequate treatment.

A-113 Lymphoproliferative Disorders Associated with Mycophenolate Therapy: Report of Two Cases

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Background & Objectives: Report two cases of lymphoproliferative disorders associated with the use of mycophenolate drug therapy. Case Description: The first case is a 14 year old boy with Down syndrome and nephrotic syndrome treated for one year with mycophenolate who was found with multiple lung nodules as an incidental finding. The second case is that of a 54 year old male that ten years after a heart transplant developed persistent fever and pancytopenia. His maintenance therapy consisted of cyclosporine, mycophenolate and prednisone. Methods: Microscopic and immunohistochemical evaluation was performed in both cases. For the second case a full autopsy was also executed. Results: Lung biopsy, for the first case, revealed a classical Hodgkin Lymphoma-like process. The other case was found with a Post-transplant lymphoproliferative disorder consistent with Diffuse large B cell lymphoma. Conclusion: Mycophenolate is a well known antimetabolite used for immunosuppression after organ transplants and to treat certain autoimmune diseases. It inhibits the enzyme inosine monophosphate dehydrogenase used in the DNA synthesis and proliferation of B and T lymphocytes. Patients that are treated with this drug are at risk to develop iatrogenic immunodeficiency-associated Iymphoproliferative disorders or post-transplant lymphoproliferative disorders. For the most part, patients can be asymptomatic or have non-specific symptoms that require a higher level of suspicion to reach a definitive diagnosis.

A-114 Concurrent Small Lymphocytic Lymphoma and Classical Hodgkin Lymphoma, Case Report

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Background & Objectives: Concurrent lymphomas are rare and are increasingly being reported due to advances in immunohistochemical methods. The simultaneous occurrence of Hodgkin lymphoma (HL) and non-Hodgkin lymphoma in a single lymph node is extremely rare. Mechanisms described for this occurrence include clonal selection, genomic instability, immunosupression, and congenital predisposition. Methods: We present a case of a 43 year-old female who presented with multiple nodules on her lower neck and her left sub-clavicular area. Results: Pathologic evaluation showed partial lymph node involvement with Hodgkin and Reed Sternberg cells with morphologic and immunohistochemical features that corresponded to classical Hodgkin lymphoma, nodular sclerosis subtype. Another portion of the same lymph node and part of the background lymphocytes of the HL showed a lymphocytic infiltrate with morphology and immunophenotype consistent with small lymphocytic lymphoma which was confirmed by flow cytometry. Conclusion: Pathologic evaluation showed partial lymph node involvement with Hodgkin and Reed Sternberg cells with morphologic and immunohistochemical features that corresponded to classical Hodgkin lymphoma, nodular sclerosis subtype. Another portion of the same lymph node and part of the background lymphocytes of the HL showed a lymphocytic infiltrate with morphology and immunophenotype consistent with small lymphocytic lymphoma which was confirmed by flow cytometry.

A-115 Epithelioid Hemangioendothelioma: an Unusual Presentation

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Background & Objectives: Epithelioid hemangioendothelioma represents a borderline or intermediate grade malignant vascular tumor in a spectrum of vascular proliferations between the hemangioma and conventional angiosarcoma. This angiocentric vascular neoplasm has metastatic potential, and is compo-

sed of epithelioid endothelial cells arranged in short cords and nests placed in a distinctive myxohyaline stroma. The epithelioid hemangioendothelioma was first described by Weiss and Enzinger in 1982. The neoplasm may occur at any age but it is rare during childhood and affects both sexes equally. Nearly one half to two-thirds of cases originate from a vessel, usually a small vein and rarely from a large vein or artery. It usually appears as a solitary, slightly painful soft tissue tumor. The lesion can affect superficial or deep (60%of cases) soft tissue, although similar lesions have exceptionally been reported in the skin and oral cavity. The most common site of occurrence are the extremities (two-thirds of cases), followed by the head and neck region (10-15%), trunk and mediastinum (15%), and other sites. Objective: To describe the rare occurrence of an epithelioid hemangioendothelioma presenting as a periorbital skin lesion in a 26 year old male. A nevus was clinically and histologically suspected. It was a vaguely nested cutaneous epithelioid neoplasm, with no distinctive vasoformation, moderate atypia and mitotic activity, extending into the facial skeletal muscle. Methods: Case report and review of literature Results: Epithelioid hemangioendothelioma is a tumor that has malignant potential and it's prognosis depends on the histologic features. Cases of epithelioid hemangioendothelioma confined to the skin are rare. After complete surgical excision the prognosis of isolated cutaneous cases seems good compared with deep soft tissue cases. Conclusion: Knowledge and a high degree of suspicion are required to diagnose such neoplasm in an unusual location, as seen in this case.

A-116 Use of Dexmedetomidine, Ketamine and Propofol During Brainstem Cavernoma Surgery with SSEP and MEP

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Background & Objectives: To describe the case of a 45 y/o male patient with incidental finding of Brainstem Cavernoma using Somatosensory (SSEP) and Motor-Evoked (MEP) potential monitoring. Methods: Premedication done with Midazolam, titrated up to 5 mg, and Glycopyrrolate (0.4 mg). IV induction was done with Lidocaine (100 mg), Fentanyl and Propofol titrated up to 100 mcg and 200 mg, respectively, and Succinylcholine (100 mg), in view that ICP was not increased. Following induction of anesthesia, 20-gauge radial arterial line and triple lumen central line were taken. Surgical procedure was maintained with Sevoflurane at 0.5 MAC. Intravenous anesthesia with Dexmedetomidine, 0.9 µg/kg/hour, Ketamine 5 µg/kg/min, and Propofol 100 µg/kg/min, was started. The neurologic monitoring technician applied all necessary equipment for SSEP and MEP monitoring. Results: Intraoperative SSEP and MEP monitoring remained satisfactory throughout the case. Patient remained intubated as a precaution for brainstem edema due surgical manipulation. On postoperative day #1, patient was extubated without complications, though found with residual dysphagia. On POD #4, the dysphagia had greatly improved, with no new neurological deficits. Conclusion: Combined SSEP and MEP intraoperative monitoring is frequently used to monitor for intraoperative stimulation. Considering that most anesthetics affect SSEP and MEP, management of these cases can present a challenge. Few studies have taken into consideration the use of Ketamine in the setting of CNS tumor. In this case successful intraoperative neurologic monitoring was performed using Dexmedetomidine, Ketamine and Propofol infusions plus Sevoflurane. When these drugs are used together, sympathetic effects of drugs are offset, thereby providing optimal surgical conditions.

A-117 Case of Synchronous Metastatic Breast Carcinoma and Primary Adenocarcinoma of the Endometrium

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Background & Objectives: We report the case of a 63 year old patient with metastatic breast carcinoma to the cervix, fallopian tubes, ovaries, omentum and paraaortic and pelvic lymph nodes, discovered when a total hysterectomy with bilateral salpingoopherectomy was performed to treat an endometrial adenocarcinoma. In this report we illustrate the utility of an appropriate immunohistochemical (IHC) study panel including Mammaglobin, and Gross Cystic Disease Fluid Protein 15(GCDFP-15) in differentiating the primary endometrial adenocarcinoma from breast cancer metastasis in addition to H&E histological examination. Breast cancer metastasis to the uterus and adnexa are relatively uncommon and there is only one previous report of breast cancer metastasis to the uterus co-existing with endometrial adenocarcinoma known to us, and in that case the patient had history of Tamoxifen therapy. Methods: These diagnoses were established by histologic and imunohistochemical pathologic analysis of the specimens obtained after total hysterectomy. A literature review using PubMed searches including the terms "Endometrial Adenocarcinoma AND Metastatic breast cancer" was conducted. Results: Histological features of metastasis can include stromal infiltration without involving endometrial glands, lymphovascular invasion, myometrial invasion and the presence of signet ring cells. Positive IHC in GCDFP-15 and Mammaglobin was identified in signet ring cells in the uterus while endometrial adenocarcinoma cells were negative for these markers. Conclusion: The use of immunohistochemical markers on patients with a history of breast carcinoma can help confirm breast cancer metastasis in the setting of primary endometrial adenocarcinoma.

A-118 Isolated Acute Abducens-Nerve Palsy Induced by Vincristine Neurotoxicity in a Pediatric Patient

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Background & Objectives: Vincristine is a neoplastic agent that is part of the treatment of common pediatric malignancies including leukemia. The most common side effect of vincristine is peripheral bilateral neurotoxicity, including abducens nerve neuropathy. We describe a 13-year-old girl with acute lymphoblastic leukemia that developed isolated unilateral abducens nerve palsy after vincristine chemotherapy. Methods: After three weeks of vincristine infusion patient presented to the pediatric emergency room with progressive blurry vision and mild visual loss on the left eye. Results: On initial evaluation patient shows left eye decreased ability to abduct on left lateral gaze. Brain imaging shows no intracranial pathology or lesions. Vincristine-induced neuropathy was considered as suggested by patient history and physical examination. Conclusion: This case report presents an uncommon vincristine side effect in the oncologic pediatric population that is of critical importance to take in consideration. Although literature describes polyneuropathies associated with vincristine, limited cases describing isolated acute abducens cranial nerve palsy in the pediatric population are documented. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): No funding sources or conflict of interest.

A-119 A Very Rare Cause of a Life–threatening Metabolic Disorder: Fanconi's Syndrome and Lactic Acidosis

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Background & Objectives: 66 year old man with past medical history chronic Hepatitis C and HIV/AIDS, on a combination of Emtricitabine/Tenofovir presents muscle weakness and polyuria for one week. Physical examination was remarkable for a chronically ill patient without motor focal deficits. He was found with worsening of renal function and was admitted to the hospital with the diagnostic impression of Acute Kidney Injury of unclear etiology. Methods: Laboratories revealed elevated serum creatinine(2.64mg/dl), mixed non-anion gap and high-anion gap metabolic acidosis, hypokalemia(1.68mEq/l), hypophosphatemia(1.0 mg/dl), glycosuria, elevated lactic acid(3.6mmole/L), and positive urine anion gap. Electrolytes replacement was provided and symptoms improved. Tenofovir was discontinued and a rapid improvement in renal function, serum electrolytes and lactic acid levels was observed. Results: Tenofovir may cause severe renal tubular damage leading to the development of Fanconi's Syndrome. Rarely, in the liver, mitochondrial toxicity causes steatosis and a decrease in lactate clearance leading to lactic acidosis. Conclusion: Tenofovir was the causative agent of the patient's clinical presentation. Detailed review of the potential side effects of the patient medications prompted us to discover the etiology of the severe metabolic disorder. Rapid discontinuation of Tenofovir was crucial for the patient recovery. To our knowledge, there have been few previous reports of Fanconi syndrome and lactic acidosis in HIV-infected patients receiving Tenofovir, almost all lethal. However, in those cases, another drug with lactic acidosis as a side effect was co-prescribed. We describe a case with Tenofovir as the only causative agent of this metabolic disorder.

A-120 A life threatening cause of thrombocytopenia

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Background & Objectives: 68 years old male patient admitted to the hospital with the diagnostic impression of syncope after evaluation at Emergency department. Physical examination was unremarkable and patient was admitted for cardiac monitoring. Methods: Laboratory reports pre renal azotemia, hyperkalemia and thrombocytopenia of unclear etiology. Next day laboratories reports a decreasing trend of platelets levels and patient complains of leg pain. At physical exam a new onset bilateral lower extremity pitting edema was noted. Upon reviewing the chart he was recently hospitalized and was treated with subcutaneous heparin for deep venous thrombosis(DVT) prophylaxis. Heparin induced thrombocytopenia was suspected despite not being treated with heparin. Results: Venous Doppler ultrasound reports bilateral popliteal deep vein thrombosis. Patient with a Heparin Induced thrombocytopenia score of 7(high-probability). He was started on Argatroban and transferred to the Intensive care unit. Subsequently, Heparin-induced antibodies results positive. After 6 days of therapy, patient platelets increase to baseline levels and warfarin was started. Conclusion: Heparin Induced Thrombocytopenia is a well described complication of heparin. Heparin is one of the most common forms of inpatient DVT prevention. This case report highlights the importance of a well documented history and physical exam. Careful history of patient recent medications use, prompt us to discover the etiology of clinical presentation and was crucial to avoid detrimental complications. This should be considered as a plausible diagnosis in the setting of a patient who presents with thrombocytopenia and signs of a pro-thrombotic state, with history of a recent admission despite not being currently treated with heparin products.

A-121 Inflammatory Myofibroblastic Tumor (Inflammatory Pseudotumor) in the Broad Ligament of a Multiparous Woman

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Background & Objectives: To report the case of a 28 year female G5P2A2 with a broad ligament mass. Methods: Macroscopic, microscopic and immunohistochemical evaluation was performed. Results: Broad ligament biopsy results were diagnosed as an ALK positive inflammatory myofibroblastic tumor. Conclusion: Inflammatory myofibroblastic tumors (IMTs), previously classified as inflammatory pseudotumors, are now known to be a distinct entity. IMT is a rare lesion composed of

myofibroblastic spindle cells accompanied by an inflammatory infiltrate of plasma cells, lymphocytes, and eosinophils which occur primarily in the soft tissue and viscera. They may arise in any anatomical site including lung, soft tissue, retroperitoneum, abdominal cavity, extremities and bladder, making them an important diagnosis and a challenge to treat since they can occur in proximity to a vital structure and present a variable natural history and biologic behavior, ranging from completely benign, to malignant with a fatal outcome. We present the case of an uterine broad ligament IMT. The cases of IMT reported in the literature involving gynecologic organs are confined to the uterus. To our knowledge, this is the first report of IMT in the broad ligament.

A-122 A rare case of an adult with leptomeningeal metastasis and subdural hygromas as initial presentation

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Background & Objectives: Our objective is to present the case of a 81 year old male patient with the finding of leptomeningeal metastasis (LM) an subdural hygromas as initial presentation of lung adenocarcinoma. Methods: This is the case of a 81-year-old male who presented with 4-week evolution of loss of balance, inability to stand and speech changes. Physical exam remarkable for scanning speech, truncal ataxia, dysmetria, dysdiadochokinesia, nystagmus, positive Romberg and ataxic gait. Results: Head CT Scan done showed cerebellar edema and bilateral subdural hygromas. Further work up included Brain MRI with gadolinium showed leptomeningeal enhancement mostly in the cerebellum bilaterally and 2 additional enhancing lesions in the right frontal lobe and left basal ganglia. Lumbar puncture showed malignant cells of epithelial origin. Given these findings chest CT and positron emission tomography–computed tomography (PET-CT) were performed to find primary tumor. Chest CT revealed right mid lung mass and PET-CT confirmed the hyper metabolic area. Lung needle biopsy was performed to confirm lung adenocarcinoma. Conclusion: This case is a rare presentation, as only 4% to 15% of patients with solid tumors are diagnosed with leptomeningeal metastasis; of these more than 70% of solid tumors are known to have widely disseminated and metastatic disease at the time of diagnosis of LM. Also, this dual initial presentation of subdural hygromas and leptomeningeal metastasis secondary to lung adenocarcinoma has been reported in fewer than 60 cases and to our knowledge, the first reported in Puerto Rico.

A-123 Splenic abscess by Salmonella in an Immunocompetent Pediatric Patient: a case report

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Background & Objectives: Splenic abscess as a presentation of Salmonella infection is very rare and the majority of reported cases have been associated to immunosuppressive state. We report the case of a 6-year-old female who presented with abdominal pain and distention, diarrhea and high-grade fever. Methods: Patient was found on Abdominal CT Scan with a splenic cystic lesion measuring 15 x 13 cm suggestive of a splenic abscess. Percutaneous drainage was placed and fluid was sent for analysis revealing Salmonella type B infection. She was treated with Piperacillin/Tazobactam for 19 days. Immunologic workup was done and found unremarkable. Results: Percutaneous drainage output progressively declined but did not resolve completely for which she was discharge with follow up at surgery clinics with serial abdominal ultrasounds to evaluate for abscess resolution and further removal of the drainage. Patient also required antibiotic and immunization prophylaxis for encapsulated bacteria as with asplenic patients. Conclusion: Most reported cases of splenic abscesses by Salmonella have been associated to immunosuppressive states such as malignancy, immune deficiencies among others. Some cases have also been associated to superinfection of preexisting splenic lesions such as congenital epidermoid cysts, pseudocyst, lymphatic malformation, hydatid cyst, hematomas, or tumors. Interestingly, our patient had no immunodeficiency, or predisposing factors that can explain her presentation of invasive Salmonella infection. Consequently, this makes the case presented extremely rare and worthy of note.

A-124 Proptosis in the Pediatric Age: Report of a series at the University Pediatric Hospital

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Background & Objectives: Proptosis in the pediatric age is not uncommon. The most common etiological causes are associated to infections and neoplasia. Methods: We reviewed a series of pediatric age patient referrals for proptosis. A retrospective and interventional study included eight children (up to 12 years) with proptosis treated at the department of pediatric oncology from November 2010 to November 2013. All the children endured a systemic evaluation, imaging studies, biopsy, and treatment. Proptosis was managed by surgery, radiotherapy, and chemotherapy after definitive tissue diagnosis and/or imaging studies. Results: This study included seven patients with unilateral proptosis and one patient with bilateral proptosis (granulocytic sarcoma). Five were primary neoplasms; three were secondary tumors. Tissue and/or imaging studies diagnosis included optic glioma (4) rhabdomyosarcoma (1), neuroblastoma (1), granulocytic sarcoma (1), and multifocal osteosarcoma (1). Management included surgery (tissue biopsy), chemotherapy and/or radiotherapy. Six patients are alive and well [rhabdomyosarcoma (1); optic glioma (4), granulocytic sarcoma (1)]. Two are deceased secondary to disease progression [(neuroblastoma (1), multifocal osteosarcoma (1)]. Conclusions: The etiology of proptosis in pediatric oncology can be diverse and careful clinical diagnosis is significantly improved by special radiological examinations such as CT scan and MRI. The diagnosis can only be correctly determined by fine needle

aspiration cytology, biopsy and radiographic imaging, essential for the specific treatment. Prognosis for these patients will depend on the etiology and extent of the tumor at the time of diagnosis.

A-125 Periadrenal Bronchogenic Cyst Clinically Mimicking a Pheochromocytoma

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Background & Objectives: Diagnosis of an adrenal mass is challenging, requiring clinical, biochemical, and radiological evaluation. The primary goal is to distinguish between benign or malignant. The most common incidental tumors of the adrenal gland are adenomas and metastases. The size, function and imaging appearance are useful criteria. A periadrenal bronchogenic cyst (BC) is extremely uncommon, very few cases have been reported. BC are congenital malformations derived from the embryonic foregut and usually develop in the mediastinum and lung. We present the case of a 50 y/o female with history of high blood pressure (HBP) and hypothyroidism that presented with a periadrenal BC mimicking a pheochromocytoma. Methods: Patient's medical history was revised. MRI showed a stable retroperitoneal left adrenal nodularity measuring 1.6 cm which did not follow the criteria for adenoma. However, laboratories resulted with mild increase plasma epinephrine levels (52 pg/ml ; Reference = 0 - 34 pg/ml), and the patient was presenting HBP suspicious for a pheochromocytoma. A left retroperitoneal laparoscopic adrenalectomy was performed. Macroscopic and microscopic pathologic evaluation of the specimen was performed. Results: Macroscopic evaluation revealed a 2.0 cm cyst with an intracystic yellow-tan proteinaceous fluid, adjacent to the unremarkable adrenal gland. Microscopic evaluaition revealed a pseudostratified ciliated columnar epithelium lining the cyst wall; the adrenal gland was unremarkable. Immunohistochemical studies resulted positive for pankeratin, p63, TTF-1, and negative for chromogranin and synaptophysin. A diagnosis of periadrenal bronchogenic cyst was given. Conclusion: This case emphasizes the rare occurrence of a periadrenal bronchogenic cyst which presented with symptoms and laboratories mimicking a pheochromocytoma.

A-126 Crossing the Borders: The power of Nuclear Medicine Imaging

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Background & Objectives: Penetrating injuries are a major cause of mortality and morbidity in our society. Prompt detection and treatment of the injury is a crucial factor in management. The most common diagnostic tool used in this setting is Computed Tomography (CT); however, nuclear medicine procedures can also provide useful physiologic information. We present a case of traumatic hepato-pleural fistula demonstrated by hepatobiliary imaging. Methods: This is a case of a 24 year old male seen at the ER due to a gunshot wound to the chest. A right–sided chest tube was inserted to drain a bloody pleural effusion. CT revealed a liver dome laceration with a right diaphragmatic injury. The patient was taken to surgery and post-surgically developed a near complete atelectasis of the right lung. Eleven days after the trauma, surgical drainage of bilious pleural effusion was subsequently performed. Follow-up CT was unable to demonstrate the pathway of bilious material extravasation. Results: A hepatobiliary scintigraphy revealed the hepato-pleural fistula. Conclusion: Traumatic abdominal injuries to the liver and diaphragm can result in hemothorax, bile leaks, lung entrapment and injuries to major vessels. Identification of traumatic injuries by CT is not always straightforward. Hepatobiliary scintigraphy, a readily available procedure, has demonstrated to be valuable in the documentation of biliary leaks. In the acute setting it can be used as a complementary procedure to other anatomic imaging tools to track elusive bile flow across the diaphragm. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors have no conflict of interest to disclose.

A-127 Recurrent malignant Triton tumor in a patient with NF-1: a case report and review of literature

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Background & Objectives: Malignant tumors arising from peripheral nerves or displaying differentiation along the lines of the various elements of the nerve sheath are collectively referred to as malignant peripheral nerve sheath tumors (MPNSTs). "Malignant Triton tumor" refers to MPNSTs showing rhabdomyosarcomatous differentiation. The unusual name "triton" was first used in reference to observation of supernumerary limbs containing bone and muscle growing the backs of tritons after the implantation of the sciatic nerve into the soft tissues of the back. In 1938 Masson and Martin suggested that the neural elements in the tumor induced differentiation of skeletal muscle. The hallmark of this tumor is the presence of rhabdomyoblasts scattered throughout a stroma indistinguishable from an ordinary MPNST. Methods: We reviewed the patient's medical record as well as conducted a review of literature. Results: We present the case of a 27 year old female with history of type 1 neurofibromatosis that presented with a mass in the right popliteal nerve. After histologic examination and immunohistochemical studies a diagnosis of malignant Triton tumor was reached. After 3 months, the patient presented with a recurrence of the tumor. Conclusion: Nearly 60% of the patients with malignant Triton tumor have type 1 neurofibromatosis. There are now at least 100 reported cases of this example of mesenchymal differentiation. The prognosis of malignant Triton tumors is poor, with 2 and 5 year survival rates of approximately 33 and 12%, respectively. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors have no conflict of interest to disclose.

A-128 Eye Trauma and Trismus: A Tetanus Story

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Background & Objectives: Tetanus is a potentially life-threatening infection, diagnosis made clinically, without confirmatory test available. Methods: A 57 year old man struck in the right eye by an unknown material, later noticing pain followed by purulent secretions. Evaluation at this time showed pre-orbital cellulitis and antibiotics at the ER. Inability to open mouth, with significant trismus bilaterally noted. Orbit MRI revealed a 5cm long foreign body coursing through the inferior aspect of the orbital cavity. Promptly taken to the OR, where they removed a piece of wood. Given patient's presentation of trismus and exposure for 1 month to wooden material, cephalic tetanus suspected; empiric therapy begun with tetanus immune globulin as well as active immunization. Trismus resolved over period of several days. Results: Tetanus is a potentially life-threatening infection, diagnosis made clinically, without confirmatory test available. The most frequent presenting symptoms are trismus and dysphagia, usually followed by generalization of the condition. Although the incubation period is usually short, it has been reported that illness may occur even months after exposure. The recognition of the presenting signs of cephalic tetanus allowed the prompt management of the infection. However, because of the rarity of this condition, the clinicians may be unfamiliar with the clinical presentation, and be unsuspecting of the diagnosis. Patients with tetanus should receive active immunization regardless of past immunization. Conclusion: This case illustrates the importance of maintaining a high degree of suspicion for tetanus in patients with adequate history and physical findings to ensure a prompt diagnosis so further complication may be avoided.

A-129 Dengue Virus Type 4 as a Transplacentally Transmitted Antibody

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Background & Objectives: In 2013, there have been 15,187 suspected cases of Dengue Fever (DF) reported. Pregnant women and infants are considered a vulnerable population for developing severe DF. Dengue Hemorrhagic Fever (DHF) can occur during the first infection of infants who received maternal IgG antibodies. Trasplacental dengue antibodies may protect the infant or enhance the risk of developing DHF due to suboptimal neutralizing antibodies. Infants have a more severe presentation caused by their inherently poor capacity to compensate for vascular leakage. Methods: We report the case of a 3 month-old male without significant past medical history with fever, hypoactivity, anorexia and loose stools 3 days prior to admission. Physical findings were positive for aphthous ulcers, tachycardia and macular rash. Admission laboratories showed elevated C-reactive protein. He was managed with IV hydration due to suspected DF. Results: Subsequent labs showed thrombocytopenia, leukopenia, hypoalbuminemia and, transaminitis, followed by rapid progression of fulminant Disseminated Intravascular Coagulation. The patient developed hypovolemic shock, refractory to treatment with crystalloids, colloids and inotropics. Despite aggressive resuscitation measures at Pediatric Intensive Care Unit, he expired 4 days after admission. Polymerase chain reaction for Dengue Type 4 infection was found positive postmortem. Conclusion: It is hypothesized that Dengue Type 4 infection developed due to maternal trasplacental antibody virus enhancement. To our knowledge there is no consensus in the literature about the adverse effects of trasplacental dengue antibodies on infants. This should be taken into account considering the upcoming dengue vaccine trials. To date, there have only been 43 confirmed cases of DHF. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors have no conflict of interests, no funding resources and no disclosures.

A-130 Castleman Disease in an Infant: Case Report and Review of Literature

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Background & Objectives: Castleman disease (angiofollicular lymphoid hyperplasia) is a rare benign lymphoproliferative disorder with a frequent mediastinal location, but possible in any lymph node or extranodal site. It occurs over a broad age range, but rarely occurs in childhood and even rarer in infants and toddlers. There are only 100 pediatric cases described in the literature. We report a case of Castleman disease diagnosed in a three year old girl in a neck lymph node which was present since the age of three months.Castleman disease presents two variants, hyaline-vascular variant and plasma cell variant. They may be unicentric or multicentric. Our case is a unicentric hyaline-vascular variant. Methods: Online medical journal databases were searched for pediatric patients with Castleman disease. Results: A 3 year old girl presented a progressively growing right latero-cervical mass since the age of 3 months. In 2010 and 2012, two magnetic resonance imaging studies revealedanhemangioma like lesion, which was refractory to medical therapy. In 2013, a mass at level III of the neck was resected and a neck dissection of levels II, III and IV was performed. The resulting histopathological diagnosis was Castleman disease of hyaline-vascular variant. Conclusion: Castleman disease has rarely been reported in infants.The cervical location, at whatever age, is far rarer than the mediastinal form. Most causes of cervical lymphadenopathy in children are not significant, but some are life threatening. Castleman disease should be included in the differential diagnosis in persistent childhood lymphadenopathy.

A-131 Easily curable, yet potentially lethal infection-Strongyloides stercoralis hyperinfection syndrome

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Background & Objectives: To describe the case of a 75 year old male patient with past medical history of COPD and pure red blood cell aplasia on steroid therapy presents with a three days history of watery, yellowish diarrhea, and abdominal distention. He was found with hypotension, febrile and tachycardic, abdominal distention and right upper quadrant abdominal pain. Methods: Abdominal CT scan reports ascending colitis. Laboratories reveal leukocytosi(39x10^3), elevated liver enzymes and hyperbilirubinemia. Patient required the use of vasopressor therapy and was admitted to Medical Intensive Care Unit. Broad spectrum antibiotics were empirically initiated. Blood culture at 48 hours was positive for gram negative bacteria, further identified as Escherichia coli. Stool culture returned positive for Strongyloides stercolaris. Patient was successfully treated with Ivermectin for 10 days. Results: We present this case as a Strongyloides stercoralis hyperinfection syndrome with ascending colitis, septic shock, and bacteremia as it has been documented cases where the worms enter the bloodstream from the bowel wall, allowing entry of enteric bacteria. Conclusion: Strongyloides stercoralis hyperinfection syndrome is a severe, but easily curable form of strongyloidiasis that carries a high mortality rate if untreated, especially in immunocompromised population. It's often misdiagnosed accounting for the majority of detrimental cases. Therefore, patients who are considered to be started on systemic steroidal or immunosuppressive therapy should be screened for strongyloides, mostly if peripheral eosinophilia is present. This is a common, curable, and often unnecessarily deadly infectious process that warrants efforts to increase disease awareness.

A-132 Preservation of adnexa using ultrasound-guided aspiration as initial treatment for ovarian torsion

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Background & Objectives: Adnexal torsion is a rare gynecological event with an incidence of 2.7%. Many anatomic and physiologic factors predispose a women to experience torsion of the ovary, however the true etiology is not always identified. This uncommon gynecologic emergency takes place when the ovary, fallopian tube or both structures twist around its pedicle causing vascular compromise. Ultrasonographic findings and Doppler flow studies are reported to be helpful in achieving a correct diagnosis. It is crucial to identify torsion early and to manage it accordingly in order to preserve the ovary. If left untreated, adnexal torsion may result in an ischemic nonfunctional ovary. This pathology has traditionally been treated by adnexectomy, however a trend towards minimally invasive treatment has made laparoscopic detorsion the surgical approach of choice. We present an even less invasive method of intervention for symptom relief and adnexal detorsion by transabdominal ultrasound-guided simple cyst aspiration. The purpose of this article is to report a case of ovarian torsion in a perimenarcheal nulligravid 16 year old female that was successfully treated via transabdominal ultrasound-guided cyst aspiration. Methods: Case report. Results: After conservative management with transabdominal ultrasound-guided cyst aspiration was performed, resumption of ovarian vascular flow as documented by normal Doppler waveforms was identified. The ovary gradually regained a normal appearance by ultrasound, which clinically correlated with complete resolution of pelvic pain and alleviation of symptoms. On follow up study, the sonographic appearance of the previously torsed adnexa revealed functional follicles with resolution of ovarian congestion and edema. The patient had no complications or recurrence of symptoms. Conclusion: Ultrasound-guided ovarian cyst aspiration for ovarian torsion represents a simple, safe, minimally invasive alternative to conventional surgical intervention in selected cases. Functional ovarian recovery and adnexal preservation is possible by applying this simple technique. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work required no sources of funding. The authors have no conflicts of interest to disclose.

A-133 Case report of Bilateral Mumps after General Anesthesia

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Background & Objectives: Post-anesthesia mumps is a rarely observed event after GETA. Parotid or submandibular swelling develops during surgery or, more often, a few hours later and usually resolves in a few days. The etiology has not been fully explained, but possible causes include trauma, infection, hypersensitivity reactions, and obstruction of the glandular excretory ducts by position, calculi, or thickened secretion. Most of the time this even does not lead to airway obstruction, and is more common unilaterally than bilaterally. The objective of this case report is to describe a very rare presentation of bilateral mumps after GETA. Methods: This is the case of a 66yr male patient with past medical history of HTN and Prostate CA that presented to the OR for a suprapubic prostatectomy. Procedure was uneventful in the surgical and anesthesia aspects, patient was extubated successfully and taken to PACU. Upon arrival at PACU the patient presented with bilateral swelling at the parotid area. The swelling of parotid gland area extended from the pre-auricular/post-auricular angles up to the area of the mandible. Upon clinical examination edema and redness was seen over the abovementioned area although no subcutaneous emphysema was seen. At the time CXR was ordered and bedside US was performed showing parotid enlargement. At the PACU the patient was examined and full workup was ordered. 24hrs after the surgery the redness and swelling had decreased. 48hrs the redness and swelling had completely disappeared and the patient was discharged without any further complications. Results: The surgery was performed in supine position without any surgical nor anesthesiology complication. The exact etiology of this phenomenon is unknown but it has been associated with increased intra-oral pressure due to cough and straining during anesthesia or e passage of air into the parotid gland

as well as obstruction of secretions. Conclusion: Anesthesia mumps is a rare clinical entity that needs to be present in the differential diagnosis of acute parotid swelling after GETA or regional anesthesia. It's unknown what could be done to prevent this event but normovolemia during surgery as well as soft pads should be considered.

A-134 An Uncommon Case of Neonatal Hyperglycemia due to Transient Neonatal Diabetes Mellitus in Puerto Rico

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Background & Objectives: Neonatal hyperglycemia is a common metabolic disorder found in the neonatal intensive care units. There are several and different etiologies for neonatal hyperglycemia. Neonatal diabetes mellitus (NDM) is a very uncommon cause of hyperglycemia in the newborn, occurring 1 in 400,000 births. There are two subtypes of neonatal diabetes mellitus: Permanent (PNDM) and Transient (TNDM). We describe a term small for gestational age female neonate with transient neonatal diabetes mellitus, who presented poor feeding tolerance and vomiting associated with hyperglycemia (385 mg/dL) glycosuria, and metabolic acidosis (pH 7.266, pCO2 25.6 mm Hg, HCO3 11.8 mmol/L and base excess -12.7 mmol/L) within the first 12 hours of life. Methods: The neonate was treated in the Neonatal Intensive Care Unit of University Pediatric Hospital with intravenous insulin, obtaining a slight control of hyperglycemia. An adequate glycemia was obtained at 5 weeks of life. Results: The molecular studies showed complete loss of maternal methylation at the TND differentially methylated region on chromosome 6q24. The etiology of this neonate's hyperglycemia was a hypomethylation of the maternal TND locus. Conclusion: The cause of neonatal hyperglycemia must be thoroughly investigated due to its diverse etiologies and treatments. A rare cause as neonatal diabetes mellitus is considered if a neonate presents refractory hyperglycemia. Its prevalence in Puerto Rico is unknown and few cases have been reported. To our knowledge this is the first case reported in Puerto Rico of transient neonatal mellitus due to the uncommon mechanism of maternal hypomethylation of the TDN locus.

A-135 Rituximab as treatment for Chronic Inflammatory Demyelinating Polyradiculoneuropathy: A case report

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Background & Objectives: Rituximab is an anti-CD20 monoclonal antibody that destroys CD-20+ cells (B cells). It is commonly used to treat diseases that are characterized by having too many B cells, overactive B cells, or dysfunctional B cells. There have been few reported cases of Rituximab - responsive Chronic Inflammatory Demyelinating Polyradiculoneuropathy (CIDP), however there is still big controversy about its efficacy in such condition. Objective: To report the efficacy of Rituximab therapy in a patient diagnosed with CIDP, poorly responsive to intravenous Immunoglobulins (IVIGs), Prednisone and Azathioprine. Methods: 23 y/o male without history of systemic illnesses who presented with insidiously progressive severe motor involvement of all extremities distally (0/5 of muscle strength in upper extremities and in ankles plantar/dorsiflexion), and moderate to severe proximal motor involvement (0/5 – 2/5 of strength) leaving him wheelchair-bound and dependent in all activities of daily living in 6 months. Bilateral facial weakness and tongue fasciculations were also noted at the time. After a complete workup, he was diagnosed with CIDP and was started in high doses of Prednisone and serial monthly IVIGs. After 6 courses of IVIGs he was started on Imuran, but it was discontinued due to reactive pancytopenia. After 1 year of therapy, only mild improvement was reported after the above treatment with the patient still being unable to walk. He was then started on Rituximab 375mg/m2 IV weekly x 1 month. Results: After 3 weeks of treatment, the patient was able to walk using a walker and bilateral ankle-foot orthotics. After 4 doses, he was able to walk without the walker for the first time in a year and a half. Conclusion: Rituximab seems to be a promising effective treatment for unresponsive CIDP. No adverse effects reported in this patient, also suggesting that this is a fairly safe therapy.

A-136 Steroid Responsive Myopathy Presenting as Bent Spine Syndrome: A Case Report

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Background & Objectives: To describe the case of an elder male with atypical spinal myopathy presenting as bent spine syndrome. Case Description: A 75 year-old male without systemic illness presenting with severe flexed neck and inability to maintain it in the erected position. Weakness was noted upon awakening one morning. He reported dysphagia and progressive difficulty gait since six prior months. Neurological exam remarkable for kyphosis, severe neck flexors weakness and mild proximal extremities weakness. Methods: Labs include mild increased creatinine kinase. Comprehensive metabolic panel, TSH, myasthenia gravis and Lambert-Eaton antibodies and chest CT were normal. Electrodiagnostic studies disclose a myopathic pattern. Deltoid muscle biopsy showed inflammatory changes, many cells with central and peripheral nuclei. Other genetic tests were ordered. Results: Our patient presents with bent spine syndrome (BSS). Etiologies include psychiatric (camptocormia) or other somatic disorders of musculo-skeletal or neurological disorders. Clinical and EMG/NCS studies support a myopathic origin in our patient. BSS of muscular origin may be classified as primary or caused by many secondary

disorders. After an extensive work-up he was started on steroids with moderate improvement, supporting our impression of an inflammatory myopathy affecting mainly the paraspinal muscles. No disease progression noted. Conclusion: Bent spine syndrome/dropped head syndrome are poorly recognized conditions. It is frequently confused with kyphosis of normal aging or other degenerative diseases. Its prevalence may be higher than reported. It's important to identify the most common and treatable conditions causing this syndrome to direct therapies and improve quality of life in these patients.

A-137 Incidental Metastatic Thyroid Papillary Microcarcinoma in Non-Routine Cadaveric Organ Donor Autopsy

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Background & Objectives: Autopsy in cadaveric organ donors is not routinely performed. We present a case of a 45 year old male evaluated for sudden loss of consciousness, a Glasgow Coma Scale of 3/15 and a brain CT scan exhibiting a left occito-parietal hyperdensity producing significant mass effect. Given a non-diagnostic intraoperative consult for his brain neoplasm, a non-routine, post-organ donation autopsy was performed. Methods: Following clinical brain death declaration, intraoperative consults were placed for brain neoplasm, liver, and bilateral kidney wedge biopsies. Satisfying transplantation criteria, the liver and both kidneys were harvested, followed by autopsy. Results: Intraoperative consult suggested neoplasia not excluding malignancy, with a differential diagnosis of Meningioma, Meningioblastoma, and Hemangiopericytoma. Final neurological consult revealed a left occipitoparietal Meningioma WHO grade 1 measuring 4.5 x 3.5 x 2.5 cm, with associated cerebral edema, left subfalcine, bilateral uncal and tonsilar herniation, Duret's and interstitial perivascular hemorrhages, and acute hypoxic changes. Autopsy incidentally revealed two confluent nodules in the lower left thyroid lobe measuring 0.5 cm in aggregate with one 0.4 cm metastatic perithyroidal level 4 anterior neck lymph node, diagnosing Thyroid Papillary Microcarcinoma Stage 3, T1N1a. Conclusion: The literature suggests that donors with benign primary brain tumors and intra-thyroidal papillary microcarcinoma are acceptable. Meningioma does not display extra-cerebral metastasis, and thyroid papillary microcarcinoma is a common incidental finding during autopsy with rare distant metastases. Although autopsy in cadaveric organ donors is not routine, the presence of an unconfirmed primary brain tumor should prompt autopsy to exclude the presence of additional malignancies. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Department of Pathology and Laboratory Medicine, University of Puerto Rico School of Medicine. Department of Anatomic Pathology, ASEM. Life Link Puerto Rico, Inc.

A-138 The Spectrum of Central Pontine Myelinolysis and the Role of Neuroimaging

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Background & Objectives: Central pontine myelinolysis (CPM) was first described in 1959, and little has been added to the clinical description since the original report. Known etiologies for this disorder include, chronic ethanolism, malnutrition, rapid correction of electrolyte disturbances, and association with liver transplant. Classic symptoms of CPM include spastic quadriparesis, pseudobulbar palsy, and acute changes in mental status ranging from locked-in syndrome, coma and death. We present an atypical case presentation of CPM. Methods: Review of medical chart, patient evaluation and neuroimaging. Results: In this case, a 57 year-old male with a history of chronic alcohol abuse, presented with tremors and an altered mental status of two-week progression despite being treated for delirium tremens. Neurologic exam remarkable for orientation in person only with ongoing visual hallucinations, generalized involuntary irregular tremors mostly affecting extremities and dysmetria without focal neurologic deficits. Laboratory results essentially unremarkable. Brain MRI revealed the typical triangular basis pontis lesion observed in CPM. Conclusion: This case denotes an atypical clinical presentation, lacking the usual severe neurological deficits of CPM. Less severe symptoms include confusion, delirium, hallucinations, and tremors which can be confused with delirium tremens. The latter brings about the consideration of an ample differential diagnosis in patients with chronic alcohol use who can present with a diversity of neurological problems. In this case Brain MRI findings helped to identify a case of subclinical CPM which must always be considered in the differential diagnosis in this group of patients.

A-139 Constipation as Primary Presentation of Pediatric Chronic Pancreatitis

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Background & Objectives: Chronic pancreatitis (CP) is defined as a process leading to irreversible destruction of the pancreatic parenchyma and loss of exocrine function. Most patients have a history of recurrent pancreatitis before the irreversible changes in pancreatic anatomy and function become apparent. Most cases are characterized by recurrent episodes of acute epigastric or diffuse abdominal pain, which may be associated with nausea and vomiting. Since these symptoms are a frequent complaint in children, childhood pancreatitis is a clinical diagnostic challenge. Methods: The incidence and prevalence of CP in children has not been clearly defined. In adults incidence has been reported anywhere between 5-10 cases per 10,000 in the United States. Up to 80% of cases were found to be secondary to alcohol abuse, an uncommon condition in pediatrics. In

children, known causes include hereditary, metabolic disorder, trauma, cystic fibrosis, inflammatory bowel disease and anatomic anomalies. In about 50% cases a definitive cause is unclear and are termed "idiopathic". Results: We present the unusual case of an 8 year-old male with history of bi-annual episodes of acute abdominal pain associated with constipation since 4 years ago. Patient was diagnosed with chronic pancreatitis after he was noted to have diffuse atrophy of the pancreas with extensive parenchymal calcifications on abdominal CT scan. Conclusion: Additional findings of dilation of the pancreatic duct, cyst at pancreatic tail and a fistulous communication to spleen were also found. MRCP revealed pancreatic duct dilatation with large intra-ductal calculus. The rarity of chronic pancreatitis with large calculus in the pancreatic duct is noted. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors have no conflict of interests, no funding sources and no disclosures to reveal at this time.

A-140 Hip Injury in a Young Male Triathlete

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Background & Objectives: To describe the case of a 30 y/o male triathlete who suffered a left intertrochanteric fracture after slow speed, low impact fall from bicycle due to the use of clipless pedals. Patient is a 30 y/o male triathlete without any systemic illness or previous injury that fell on his left side during a slow speed left sided turn on wet pavement. During the fall, he was unable to unclip his feet from the clipless pedal and consequently suffered direct trauma to his left hip. Methods: On initial examination he was complaining of severe pain in his left hip. The left leg was externally rotated with periarticular swelling. The left hip was tender to palpation, decreased passive and active range of motion due to pain. Imaging showed mildly displaced comminuted intertrochanteric fracture. He was taken to OR and intramedullary nail fixation was performed. Results: Initial differential diagnosis was more suggestive of a hip contusion, considering the mechanism of injury. Then physical exam and imaging studies showed the hip fracture. Conclusion: Hip fractures are disabling injuries and can occur from high impact trauma, or low impact falls in high risk population (post-menopausal women aged 50 years or older and on osteoporotic bone). Only 5 cases have been described regarding hip injury associated to the use of clipless bicycle pedals and the ages ranged from 37-43. Prevention of this types of injuries is an important factor to avoid disability. Adequate fitting and testing of the pedals is necessary.

A-141 A Case Series Of Peripartum Cardiomyopathy At The University District Hospital

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Background & Objectives: Peripartum cardiomyopathy (PPCM) is an uncommon disease characterized by impaired myocardial function in pregnant women. It's associated to high morbidity and significant mortality. The etiology and risk factors for the condition are not well understood. Aim: To describe maternal morbidity and mortality of patients diagnosed with peripartum cardiomyopathy at the University District Hospital and to compare these with the published literature. Methods: Retrospective case series of patients diagnosed with PCM from 2006 to 2013 at UDH. Results: Seven cases were identified, one was diagnosed with PPCM antepartum and pregnancy was terminated after diagnosis, while the remaining were diagnosed postpartum. The mean ejection fraction upon diagnosis was 36 %. Two patients had premature deliveries. Two patients died from the disease in the postpartum period, one had other comorbidities (systemic lupus, scleroderma and rheumatoid arthritis). The other patient developed pneumonia, a deep venous thromboembolism and a wound infection. These comorbidities may have contributed to the progressive heart failure and eventually death in these cases. Characteristics of our patients as compared with the one reported in the literature coincide in: older than 30 years and multiparity. Due to the limited numbers of patients, a correlation between premature deliveries and PPCM cannot be adequately assessed. Conclusion: Since this is an uncommon disease, its etiology, risk factors, comorbidities and complications have not been well characterized. Larger multicenter studies to accurately assess the risk factors and etiology of PPCM as well as its outcomes in terms of maternal and fetal morbidity and mortality are needed.

A-142 Pediatric autoimmune neuropsychiatric disorder associated with streptococci: A Case Report

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Background & Objectives: The term known as PANDAS (pediatric autoimmune neuropsychiatric disorder associated with group A streptococci) is a rare syndrome that described a group of neuropsychiatric disorder that are exacerbated by group A streptococci (GAS) infection. The diagnostic criteria for this disorder include acute onset of obsessive-compulsive disorder and/or tic disorder, pediatric onset between 3 years and onset of puberty, abrupt onset and episodic course of symptoms and a temporal relation between a GAS infection and onset and/or exacerbation. Methods: In this report, we described a 5 years old healthy girl with the abrupt onset of obsessive compulsive behaviors 2 weeks after she was diagnosed with a pharyngitis that was accompanied by a generalized erythematous skin rash diagnosed as scarlet fever. Results: Patient was initially observed and admitted to institution to rule out any other etiology as encephalitis, but patient continues with worsening symptoms as she developed tics. Patient initially started in Risperdal therapy with minimally respond with

eventually gradual respond to intravenous immunoglobulin. Conclusion: Patient was discharge home with Risperdal with follow up with the service of neurology.

A-143 Programa Para Evaluar la Satisfacción con los Servicios de Salud General y Reproductiva en Mujeres sin Hogar

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Background & Objectives: Las últimas décadas de estadísticas sobre la mujer sin hogar (MSH), señalan ésta se ha convertido, en el segmento poblacional de mayor crecimiento. Múltiples circunstancias provocan esta situación, particularmente en edad reproductiva, creando un serio problema de salud pública general y particular de esta población; desconociéndose la calidad de servicios de salud ofrecida. Implantar un plan para evaluar la satisfacción con los servicios de salud general y reproductiva, de las MSH en el Programa Para Personas Sin Hogar, Departamento de Desarrollo Comunal (DDC) del Gobierno Municipal Autónomo de Carolina (GMAC). Methods: Se revisó la literatura, se analizaron prioridades y criterios, desarrollándose un plan para implantar y evaluar la satisfacción con los servicios de salud general y salud reproductiva de las mujeres sin hogar, en la agencia seleccionada utilizando un instrumento creado y validado para ello. Results: Al presentar el plan de implantación a la organización seleccionada, ésta mostró sumo interés en adoptarlo. Según los hallazgos de la entrevista, el personal profesional del programa y la agencia poseen las destrezas necesarias de adaptación a los cambios sugeridos. Además, el programa cuenta con el apoyo necesario para desarrollar nuevas estrategias, basadas en evidencia científica, dirigidas a atender oportunidades relacionadas con proyectos en salud pública de madres y niños. Conclusion: Resulta viable implantar el Plan, e integrar recursos y análisis académicos con los de la Sociedad. Beneficiaría a la población total y a la MSH, en particular. Identificamos alianzas facilitadoras de las condiciones actuales de los servicios prestados a las MSH.

A-144 Evaluación del impacto del Programa de Salud del Viajero en la comunidad universitaria UPR-RP

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Background & Objectives: La Universidad de Puerto Rico es posiblemente la institución gubernamental puertorriqueña que presenta mayor desplazamiento internacional entre los miembros de su comunidad. Las razones para esto obedecen al intercambio académico, social y cultural que le es propio a una institución de esta naturaleza. Es la intención que esta comunidad esté debidamente preparada para hacer frente a los retos de salud que conlleva estar en lugares tan próximos como el Caribe o tan distantes como Asia o África. A tales efectos, el objetivo de esta ide lnvestigación fue medir el impacto de un Programa de Salud en Viajes a comunidad de la Universidad de Puerto Rico, Recinto de Río Piedras. Methods: Siguiendo las guías de la OMS y el CDC se realizó una evaluación holística de los riesgos grupales, seguido por una comunicación oral y escrita de los riesgos de salud al realizar el viaje. Por último, se manejaron los riesgos individuales mediante la selección/administración de tratamientos y educación al paciente. Al cabo de aproximadamente 6 meses se encuestó a los participantes sobre cómo la intervención de salud había cambiado el conocimiento, sus comportamientos de salud y si habían sufrido alguna condición de salud. Results: Los resultados muestran que la intervención de salud logró modificar el conocimiento y las conductas de riesgo de entre el 75 – 90% de los participantes. De igual forma, solo el 6% de los participantes tuvo complicaciones de salud al estar en un escenario internacional. Pruebas de ANOVA muestran que no hubo diferencias significativas del impacto de las intervenciones luego de ajustar por los países visitados, haber buscado información previamente o haber visitado el país anteriormente, edad o género de los participantes ($p > .05$). Conclusion: Independientemente de las características sociodemográficas de los participantes del Programa y sus experiencias previas luego de la intervención, todos/as reportaron cambios en conocimiento y modificación de conductas de riesgos teniendo un mejor estado de salud durante la travesía.

A-145 Preparacion de Planes de Emergencias para las Facilidades de Salud de Puerto Rico, 2011-2013

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Background & Objectives: La vulnerabilidad de Puerto Rico a diversas amenazas de origen natural y humano requiere que las facilidades de salud estén preparadas. Para esto es necesario que cuenten con planes de emergencias que les ofrezcan un nivel de preparación y una capacidad de respuesta adecuados para atender a la ciudadanía, particularmente ante eventos con víctimas en masa. El objetivo principal del proyecto fue capacitar el personal clave de las facilidades de salud de Puerto Rico en el desarrollo de tres planes de emergencias: Plan de Descontaminación en Masa, Plan de Desalojo y Plan de Mortalidad en Masa. Methods: Se diseñó una serie de adiestramientos en múltiples sesiones y utilizando diversas estrategias didácticas para el desarrollo de los tres planes. Las estrategias educativas incluyeron: conferencias, ejercicios de mesa, redacción, discusiones de grupo, consultoría telefónica y electrónica, mentoría individualizada, presentaciones de los participantes y exámenes cortos, todas empleadas en múltiples sesiones grupales e individuales. Results: Unas 65 facilidades de salud, distribuidas en las siete regiones del Departamento de Salud, fueron impactadas en la capacitación. La gran ma-

yoría de las facilidades participantes sometieron borradores finales de los planes al culminar la capacitación. Sobre un 90% de los participantes manifestaron que los adiestramientos consiguieron alcanzar su objetivo y lo recomendarían a otros profesionales. Conclusion: La estrategias didácticas y de múltiples sesiones empleadas en el proyecto demostraron ser efectivas en la preparación de la audiencia en el desarrollo de planes de emergencias. Se continúa ofreciendo seguimiento a algunas de estas instituciones para asistirles en la culminación de los planes. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Este proyecto fue sufragado en un cien por ciento por una subvención federal de la Oficina del Sub-Secretario para Preparación y Respuesta (ASPR, por sus siglas en inglés) del Departamento de Salud y Servicios Humanos federal administrada por la Oficina de Preparación y Coordinación de Respuesta en Salud Pública (OPCRSP) del Departamento de Salud (DS) de Puerto Rico.

A-146 Retos en facilidades de salud de Puerto Rico para desarrollar un plan de descontaminación en masa

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Background & Objectives: En la fase de planificación para la preparación y respuesta a emergencias no sólo se fomenta el manejo de desastres naturales sino que se consideran emergencias creadas por el hombre. Puerto Rico es vulnerable a un evento de contaminación en masa. La respuesta a estos podría requerir una descontaminación de las víctimas en las salas de emergencias de las facilidades de salud; protocolos de seguridad deben ser implementados. Las facilidades deben tener los recursos, el personal y el peritaje para realizar una descontaminación de emergencia. Existen retos para estas facilidades lograr planificar y desarrollar un plan efectivo. Los objetivos del proyecto fueron adiestrar y capacitar a facilidades de salud de la Isla en el desarrollo del plan de descontaminación en masa y recopilar información sobre los retos que experimentan. Methods: Se diseñó un adiestramiento en 2 fases, 4 sesiones cada una. Se ofreció en las 7 regiones del Departamento de Salud. Se utilizaron varias estrategias educativas para lograr la capacitación de los participantes. Results: 65 instituciones de salud y 212 personas participaron del proyecto. Se desarrollaron 54 borradores del plan de descontaminación en masa. Se documentaron los retos que presentaron los participantes para desarrollar e implementar el plan y las necesidades de equipos y de personal capacitado. Conclusion: Existe una gran necesidad de adiestramientos continuos sobre desarrollo y preparación de planes de descontaminación en masa ya que la mayoría de las facilidades de salud de Puerto Rico enfrentan serios retos para lograr responder efectivamente a una emergencia de este tipo. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): A todo el equipo del Centro de Preparación en Salud Pública del Recinto de Ciencias Médicas de la Universidad de Puerto Rico, por su gran apoyo y aportación durante la implementación del proyecto. En especial, al Sr Iván García Muñiz, por su disponibilidad y excelentes recomendaciones durante el proceso de desarrollo e implementación de esta investigación.

A-147 Non-STEM Undergraduates Engaged in Active Learning through Molecular Biology Laboratory Experiences

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Background & Objectives: The Department of Biological Sciences (DBS) is offering a novel introductory course Science, Biotechnology and Society (CIBI 3028), to introduce non-STEM undergraduates to biotechnology and the new trends in this scientific field. Scientific methodology, chemistry of life, cell physiology, molecular biology and biotechnology are the main topics in CIBI 3028 presented from an interdisciplinary approach. The students are engaged in active learning, which will be involving themselves in the discussion of current socioeconomic, environmental and bioethical issues related to biotech. As part of the laboratory component, students perform a novel sequence of experiences in basic microbiology and DNA technology resembling a research project. Methods: The non-STEM students are randomly enrolled in CIBI 3028. Participants knowledge and comprehension achievement are evaluated through pre-test/post-test on scientific aspects such as experimental design and fundamentals in DNA technology. A pre/post questionnaire was administered to evaluate the transition in their level of interest towards postgraduate and professional commitments. Results: The pre-test/post-test show significant gain in outcomes in knowledge and comprehension. Meanwhile, pre/post questionnaire shows remarkable increase in the participant interest towards post graduate and professional commitments. The questionnaire posed items that allowed the authors to correlate the student interest transition to their participation in the course and laboratory experiences. Conclusion: The authors are working to validate an assessment instrument, which consider students attitudes and values towards Biosciences and Biotech research. This would be the first step to study the possibility to integrate an authentic research project in the CIBI 3028 laboratory component.

A-148 Estudio sobre eventos de desalojo reportados por las facilidades de salud en Puerto Rico (2011-2013)

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Background & Objectives: La planificación para el desalojo en una facilidad de salud es un componente crítico y esencial en el desarrollo de un plan integral de emergencias. Durante un desalojo, la seguridad y salud de los pacientes, visitantes y personal es fundamental. Hasta este proyecto, no se había realizado un estudio para documentar las experiencias de desalojo en las facilidades de salud en Puerto Rico y las lecciones aprendidas de estos. Recopilar y analizar información sobre la experiencia de eventos de desalojo de facilidades de salud en Puerto Rico. Methods: Se desarrolló el cuestionario Experiencia de Desalojo, que recoge información sobre eventos de desalojos que han experimentado las distintas facilidades de salud. El cuestionario consiste de quince preguntas sobre: el año de desalojo; razones; tipo de desalojo; tiempo que tomó el mismo; medios utilizados; lugares de movilización; y lecciones aprendidas. Results: Un total de sesenta y un (n=61) facilidades de salud completaron el cuestionario de las sesenta y cinco (n=65) que participaron en el proyecto desarrollado por el CPSP-UPR. El 64% reportó haber tenido que desalojar en al menos una ocasión. Durante el proyecto, se documentaron sesenta y ocho (n=68) eventos de desalojo, en las instalaciones de salud. Conclusion: Este análisis demuestra la frecuencia con que han ocurrido eventos de desalojo en facilidades de salud en Puerto Rico. La recolección de datos permite conocer y analizar información importante sobre este tipo de eventos, contribuyendo al mejoramiento de los esfuerzos de preparación en las instalaciones de salud de la Isla. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): A todo el equipo del Centro de Preparación en Salud Pública del Recinto de Ciencias Médicas de la Universidad de Puerto Rico, por su gran apoyo y aportación durante la implementación del proyecto. En especial, a la Dra. Nannette M. Lugo Amador por sus excelentes recomendaciones y disponibilidad consistente hasta completar esta investigación.

A-149 Percepción del adulto mayor en Puerto Rico sobre el consumo excesivo de medicamentos

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Background & Objectives: Para el 2050, se espera que 39% de la población sea de adultos mayores (Censo, 2010). Con el aumento en la población de edad avanzada ha aumentado el consumo de medicamentos (Shah y Hajjar, 2012). El uso excesivo de medicamentos puede provocar reacciones adversas y uso inapropiado (Holmes, 2012). Para estudiar esta situación, se trabajó el siguiente objetivo: describir la percepción del adulto mayor sobre el consumo excesivo de medicamentos e identificar factores que influencian su percepción. Methods: Diseño descriptivo, por disponibilidad. Se recogieron los datos en octubre del 2013 con una muestra de 40 participantes mayores de 65 años, no dependientes a cuidados de salud. El instrumento utilizado diseñado por la investigadora titulado: "Estimado de percepción del consumo excesivo de medicamentos en adultos mayores". Results: De los 40 participantes, 25 (62%) presentaron una percepción adecuada y 15 (38%) una percepción moderadamente adecuada. La muestra indicó un consumo promedio de 6 medicamentos diarios. El 57% contestó estar totalmente de acuerdo y de acuerdo con que el tomar té no afecta las demás medicinas ya que éste es natural y un 60% indicó que toma todas las medicinas a la vez en la mañana para que no se le olvide ninguna. Conclusion: Los resultados sugieren desconocimiento particularmente sobre las interacciones entre los medicamentos convencionales y naturales. La memoria puede considerarse un factor que interfiere con la ingesta correcta de los medicamentos. Se recomienda un estudio que considere obtener información sobre consumo de medicinas naturales y convencionales.

A-150 An Assessment of the Neurology Research Curriculum during the 2009 to 2013

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Background & Objectives: In 2009, the Neurology Training Program reviewed and established a new research curriculum to promote the research participation of the neurology residents and faculty to fulfill the ACGME requirements in research experience. Prior to 2009, the Neurology residents had a limit exposure to research where most works consisted of case presentations. This responsibility was delegated to the Research Committee, who developed the curriculum and designed the strategies as part of the Neurology Training Program curriculum. Methods: The curriculum included a basic principles research course, guided the residents in the research design and development, and supported the faculty mentors. All senior residents completed the research project including generating a proposal, IRB approval, data gathering and analysis, and presentation. The Research Committee monitored the resident's research activity by monthly meetings and follow up with their mentors. A mentor's form was implemented document all activities. Results: During 2009 to 2013, the residents' participation in scientific meetings increased significantly (62%). Overall, between faculty and residents, there were 64 presentations among them: RCM Research Forum (24), American Academy of Neurology Annual Meeting (9), American Epilepsy Society (5), ISNV (5), and SNIP (5). Several awards were obtained included special presentations and highlight discussions in focal groups. This work generated 27 manuscripts (93%), 25 of them were peer review in 16 journals. Conclusion: The research activity in the Neurology Training Program significantly increased over the past five years supporting that the strategies implemented were effective. These positive outcomes placed the Program in compliance with the ACGME requirements. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): We thank the Neurology Research Committee, Dr. Carlos Luciano (Chair, Neurology Section), Neurology Faculty and Neurology Residents.

A-151 Advanced Communication Skills During The Pediatrics Clerkship: A Five Year Experience

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Background & Objectives: Being competent in basic and advanced communication skills is an accreditation requirement and a licensing requirement. The Association of American Medical Colleges has recommended that advanced clinical skills should be taught and assessed throughout the medical school curriculum.. Basic skills are taught and assessed during the first two years of medical school and the advanced skills during third year. Few articles are found on curricula to train students for difficult situations. Describe the Pediatrics Clerkship educational strategy in which students demonstrate advanced communication skills. Methods: A formative clinical experience using standardized patients has been integrated to the pediatrics clerkship. Two 20-minute clinical scenarios have been developed: a mother who is not satisfied with services offered; and the parents of a baby refuse immunizations due to a recent acute life threatening event. Feedback on performance was offered. Results: During 2008-2013 a total of 475 medical students enrolled in the Pediatrics Clerkship have completed the activity. Students agree the experience is relevant to the medical practice (95%). Students perceive adequate difficulty level (85%). Students perceive that previous courses prepare in advanced communication skills (81%). A hundred percent of the students find valuable the feedback. Conclusion: The strategy using standardized clinical scenarios to teach advanced communications skills during the pediatrics clerkship serve as a tool to reinforce competency among medical students. Students perceive the activity as necessary. As a formative exercise allows the student to engage in the learning experience in a stress-free environment and prepare them for the realism of patient care in challenging situations. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Clinical Skills Center, University of Puerto Rico School of Medicine

A-152 Transitioning to Smart Rooms on Campus

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Background & Objectives: The teaching learning process in higher education is been transformed by the use of innovative technology. One component of Title V project funded smart rooms' technology for three of six medical sciences schools on campus. Faculty satisfaction with the use of this media was assessed. Objective: An assessment strategy was implemented to evidence outcomes on two Title V project objectives: 1) increase the number of faculty integrating technology into teaching learning process and 2) improve the instructional and technological support facilities. Methods: An electronic survey was designed and administered to 157 faculty members from participating schools after training sessions on mobile devices, wi-fi components, and smart boards. Ten questions were included: nine closed questions probed satisfaction and one open ended question gathered recommendations on how to improve the use of smart rooms. Results: Response rate was 30 %. Respondents stated they use smart boards (48%), have integrated the use of smart rooms to the teaching learning process (60%), felt confident of new skills (48%), needed additional training (73%); and rated quality of equipment as excellent (70%). Salient recommendations were: additional hands-on training sessions to maximize the use of this technology in teaching; improve access to technological support; provide specialized training to support personnel; and further improve infrastructure to facilitate the implementation of technology. Conclusions: Faculty seems to be eager to integrate smart room technology to the teaching learning process. To enhance and keep up faculty engagement an ongoing training process is recommended both for faculty and technical support staff. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by the US Department of Education: Title V Grant Award Number# PO31SS100092

A-153 Estudio sobre el consumo de alcohol en menores de Vega Baja

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Background & Objectives: El consumo de alcohol en menores es socialmente aceptado en PR. Para fortalecer la infraestructura de prevención a nivel comunitario y prevenir el consumo de alcohol en menores; Iniciativa Comunitaria (ICI) con su programa Barrio Vivo participa del PR Strategic Prevention Framework – State Incentive Grant. Con el fin de conocer factores de riesgo y protección de los jóvenes y monitorear el impacto de un plan estratégico de prevención de alcohol, se realizó una encuesta en escuelas de Vega Baja. Objetivo: Presentar los datos sobre el consumo de alcohol por menores de Vega Baja. Methods: Se seleccionaron aleatoriamente 10 grupos en cada una de las 4 escuelas que participaron en la Encuesta Juvenil. Los cuestionarios fueron desarrollados por el Puerto Rico Epidemiological Outcome Group y administrado por el personal de Barrio Vivo durante el 2012. Results: Se encuestaron 309 estudiantes. El 53.4% indicó el alcohol como la sustancia más utilizada en algún momento de su vida. El 42.6% indicó que consumió alcohol durante el pasado año. El 66.7% inició el consumo de alcohol antes de los 15 años. El 53.4% percibe que se le haría fácil conseguir bebidas alcohólicas y el 85.4% de los que consumieron alcohol informó que no se le pidió identificación a la hora de comprar la bebidas alcohólicas. Conclusion: El consumo de alcohol por los menores y su fácil acceso es una problemática social existente en Vega Baja que justifica el desarrollo de un plan estratégico de prevención

de alcohol a nivel individual y ambiental. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): ASSMCA es el auspiciador del proyecto Barrio Vivo.

A-154 Implementing a "Learning Styles Questionnaire" as a Learner Diagnosis Tool within the Pediatrics Residency Program

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Background & Objectives: In medical education, there is now more awareness that residents are self-directed life-long learners who must take ownership of their own learning experiences. In their Individual Learning Plans (ILP), they are expected to establish academic objectives and to design learning experiences in accordance. The development of the ILP is viewed by residents as just another requirement and the result is a plan full of unspecific learning activities and goals. The aim of this project is to identify a learner assessment instrument that provides practical information that residents can use to design a more complete ILP. Methods: Three pediatrics residents completed five Learning Styles assessment instruments and selected the survey they found to be most practical. A learning activities toolbox was then designed to match each possible learning style. Afterwards, ten residents completed the survey and used the toolbox to design their ILP. A focus group with these residents and the Program Director (PD) ensued to evaluate these tools' effectiveness. Results: Residents strongly favor using a learning styles assessment as a tool to enhance self-awareness and emphasized the importance of having a toolbox available to use as guidance in developing learning activities. The PD reported that the residents wrote more specific and detailed objectives than in their initial plans. Conclusion: This activity increases the residents' understanding of the concept of an ILP and it probably enhances compliance with this program requirement. Residents were extremely satisfied with these tools and recommend their formal implementation in the residency program.

A-155 Profiling Puerto Rico's Environmental Threats using Local Newspapers

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Background & Objectives: Environmental threats (ET) are one of the most relevant concerns worldwide. Indeed healthy people 2020 recognize the urgency of working with ET at a community level. The aim of this research was to observe the most relevant ET being documented in the 3 most relevant Puerto Rico newspapers. Also this research intended to contrast documented ET against published scientific research made by environmental health practitioners. Methods: Following the communication theory, six months cross-sectional research was made to analyze what ET were being communicated to the civil society. Only news related to Puerto Rico were included in the analysis excluding news documenting ET's taking place elsewhere. Results: Results were tabulated using STATA 12.0 showing that most of the ET being documented were related to policy and regulation violations/complaints (23.42%) and emergency preparedness issues (17.10%). These were followed by environmental epidemiology (14.75%) and solid and liquid wastes management (11.24%) news. Higher volumes of this news were reported among the moths of September and October having a lower report by December. After contrasting the information in newspapers to against published scientific research made differences were observed, showing discrepancies in research priorities and ET impacting communities. Conclusion: In conclusion, civil society is being informed of ET events that seem to lack or had inappropriate legislation posing the need to increase the environmental policy evaluation projects in the island. These concerns should endeavor environmental health practitioners in order to be aligned to Healthy People 2020 objectives.

A-156 Modelo y Efectividad del Programa de Desarrollo de Facultad del DIDARP-Escuela de Salud Pública

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Background & Objectives: Desarrollarse en el ámbito académico implica el reto de mantenerse a la vanguardia en la adquisición y producción de conocimiento científico. Por tanto, resulta imprescindible contar con programas de capacitación que promuevan la inmersión de profesionales y estudiantes a la comunidad científica. Esta propuesta presentará el modelo y efectividad del Programa de Desarrollo de Facultad del DIDARP-Escuela de Salud Pública. Methods: Con un modelo basado principalmente en los principios de la andragogía y mentoría, el programa se vale de diversas estrategias instruccionales tales como talleres, group meetings, seminarios, Journal Clubs y web-based tools, entre otros. Estos buscan desarrollar 5 dominios principales de competencia en investigación que incluyen conocimiento científico, destrezas de investigación, comunicación, liderazgo y ética. Results: Al presente el programa ha ofrecido un total de 11 talleres, 8 seminarios, 11 Journal Clubs entre otras actividades educativas, adiestrando y desarrollado a un total de 13 investigadores, 29 estudiantes y 1 Post-Doc, aproximadamente. Generando así un espacio para que facultativos jóvenes y estudiantes graduados aumenten su capacidad en investigación relacionada al abuso de sustancias y justicia criminal en Puerto Rico. Herramientas evaluativas que van desde planes de desarrollo hasta reuniones y evaluaciones individuales dan cuenta de la efectividad de las diferentes estrategias utilizadas reportando entre un 75% a 100% de efectividad. Conclusion: Los resultados de diferentes estrategias de evaluación reflejan la efectividad y fortalezas del programa y sus actividades, destacando el impacto del mismo en el desarrollo de capacidades en investigación relacionada al abuso de sustancias y justicia criminal. Acknowledgements (Funding Sources, Conflict of

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A-157 Estudio de audiencia para diseñar una campaña a comerciantes para prevenir el alcohol en menores

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Background & Objectives: El desarrollar campañas de Mercadeo Social (MS) permite tratar problemas sociales a través de diversas estrategias. Iniciativa Comunitaria con su programa Barrio Vivo fue una de las organizaciones seleccionadas para implementar el Modelo de Prevención Estratégica de PR. Como parte del plan a nivel ambiental se diseñó una campaña de MS para comerciantes con el fin de prevenir el consumo de alcohol en menores de Vega Baja. Objetivo: Presentar un estudio de audiencia realizado a comerciantes del pueblo de Vega Baja para el desarrollo de una campaña que prevenga el acceso a bebidas alcohólicas a menores. Methods: Se reclutaron comerciantes cuyos negocios se encuentran en la jurisdicción del Código de Orden Público de Vega Baja. Los instrumentos fueron administrados en forma de entrevista por personal de Barrio Vivo. Results: Catorce comerciantes completaron los instrumentos. 36.4% de los comerciantes estaban solteros. 63.6% completaron un grado técnico. Los medios que más utilizan para comunicarse e informarse son el celular y la televisión. Se observó que ninguno de los comerciantes conoce a cuánto asciende la multa por vender alcohol a un menor, la mayoría desconoce los metros de distancia que debe estar una escuela de una barra y no piden identificación. A la hora de recibir información les interesa que sea a través de material impreso y orientación directa al negocio. Conclusion: Para desarrollar una campaña de MS es imprescindible conocer el perfil y comportamiento del mercado meta. Además, permite priorizar las estrategias a utilizar para impactar a la audiencia. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): ASSMCA es la organización que auspicia el Programa Barrio Vivo. El Centro de Investigación y Evaluación Sociomédica (CIES) es la organización que colabora y proporciona apoyo al Programa Barrio Vivo. La organización ILACS que nos apoyó en el diseño de la campaña de Mercadeo Social.

A-158 Conocimiento de estudiantes en el Manejo de Dolor de pacientes con cáncer

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Background & Objectives: El manejo del dolor como tema de investigación ha tomado gran auge (Messmer, 2009; Zavala Rodríguez, 2008; Sánchez Sánchez, 2005; Torres Reyes, 2012). Los profesionales de la enfermería, desde que son estudiantes deben aprender a manejar adecuadamente el dolor, particularmente en el paciente de cáncer. Este estudio contestó la siguiente interrogante: ¿Cuál es el nivel del conocimiento que poseen los estudiantes de cuarto año de bachillerato enfermería sobre el manejo del dolor en pacientes con cáncer? Los objetivos de la investigación fueron describir el nivel de conocimiento que poseían los estudiantes de cuarto año de bachillerato de enfermería. Methods: Estudio de diseño descriptivo, transversal (Polit, 2012) con una muestra por disponibilidad de 50 participantes de una población accesible de 100 estudiantes de cuarto año de bachillerato de enfermería de una escuela acreditada. El instrumento de medición (alpha de Cronbach de .80) fue: "Encuesta sobre el conocimiento y actitudes con relación al dolor". El proyecto aprobado por el IRB, recogió los datos durante el mes de octubre 2013. Results: Los participantes estuvieron entre las edades de 21 y 26 años de edad, con una media de 22. De acuerdo a las puntuaciones de la prueba, solo tres (3) participantes, un 6% de la muestra aprobaron la prueba con 70% o más. Conclusion: Se recomienda repetir este estudio con estudiantes de otras instituciones educativas y trabajar más con este tema en los currículos de enfermería.

A-159 Conocimiento, Creencias, Actitudes y Deseo de Promover la Lactancia en Estudiantes de Enfermería

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Background & Objectives: Una de cada cuatro madres se queja de no haber recibido ayuda o apoyo para la lactancia de parte del personal hospitalario (Cabrera, 2010). Para determinar si los estudiantes de enfermería poseen la preparación y deseo de ayudar a las madres lactantes se contestó la siguiente interrogante ¿Cuál es la relación entre el conocimiento, las creencias, las actitudes sobre la lactancia materna y la deseabilidad de promoverla que poseen los estudiantes de cuarto año de bachillerato de una intuición en el norte. Objetivos: Examinar las actitudes y creencias de los estudiantes en torno a la lactancia materna, determinar su nivel de deseabilidad para promoverla y establecer la relación entre el conocimiento, creencias, actitudes y deseabilidad. Methods: La muestra por disponibilidad estuvo constituida por 49 estudiantes de cuarto año de bachillerato mayores de 21 años. Los datos se recogieron por medio de dos instrumentos de medición. Results: Un 33% de los participantes logró completar el cuestionario de conocimiento de manera satisfactoria mientras que un 67% no lo aprobó. Un 93.6% indicó que es importante proveer apoyo a las madres lactantes, el 84.8 % lo consideró necesario mientras que un 87.2% opinó que es importante que la madre y el bebé logren el éxito en la lactancia materna. Conclusion: Los participantes tienen el deseo de promover la lactancia materna independientemente posean el conocimiento suficiente. Consideran importante que la madre y él bebe tengan éxito en el lactancia materna, siendo ellos una fuente de apoyo, teniendo una actitud positiva hacia la misma.

A-160 Implementation of the Pediatric Early Warning Score System to identify patient deterioration

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Background & Objectives: Hospitalized pediatric patients are at increased risk for deterioration that could end in cardio-respiratory arrest. Efforts shifted to develop an objective tool to identify early signs of deterioration before it requires the activation of a Rapid Response.. Our Study is a Pilot observational design that measure effectiveness of the PEW Score on quantifying severity of illness in pediatric patients on the University Pediatric Hospital. Methods: PEW score range from 0-11 and focus on three components: Child behavior, Cardiovascular status, Respiratory status. On the Education phase , nurses of pediatric ward were trained in how to use PEW score .On the Implementation Phase, Nurses were instructed to calculated the pew score to each new admission to ward, once in a shift of 8 hour, unless patient deteriorates. Results: Of 24 new admissions 54% were found to had a pew score of 0, 29.1% had a pew score from 1-2 and 16.6% had a pew score from 3-6, from which 12.5 % were transferred to ICU. In 20%, pew score was not calculated on the night shift. Conclusion: Rapid Response activations decreased from 3 to 0 during implementation compared to last year. It can be Attributed to the fact that all patients with higher pew score (>6) were admitted to ICU before an activation occurs. Effectiveness of tool was affected when nurses fail to calculated the pew score .We conclude that Pew score support early recognition of deterioration when collected adequately.

A-161 Evaluación de Adherencia a Bifosfonatos en Mujeres con Osteoporosis en Farmacia de Comunidad en P.R.

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Background & Objectives: La osteoporosis es una condición que afecta a 200 millones de personas en el mundo y 44 millones en EU. Se caracteriza por la disminución en la densidad ósea, resultando en fracturas. Los bifosfonatos son la primera línea de tratamiento aprobada. La mayoría de los pacientes no se adhieren a éstos por experimentar efectos adversos gastrointestinales, frecuencia de administración y falta de conocimiento. El propósito es evaluar la adherencia a los bifosfonatos, en una población de féminas en la Farmacia San José en Lares, P.R. Methods: La adherencia fue evaluada utilizando la escala de Morisky, validada para adherencia a medicamentos orales para tratar osteoporosis. Las féminas mayores de 50 años que vistan la Farmacia fueron invitadas a participar en este estudio descriptivo. Results: El 57% de las participantes reportó olvidar tomar el bifosfonato por su frecuencia de administración. El 70% tomó el bifosfonato en las últimas 4 semanas. El 54% indica que dejó de tomarlo cuando sintió que no le funcionó porque desconocen el efecto del mismo. El 53% reportó que siente presión al adherirse a su tratamiento y de vez en cuando se le dificulta acordarse tomarlo. Conclusion: La adherencia a los bifosfonatos se ve afectada debido a la falta de conocimiento sobre el efecto de estos en el tratamiento. La frecuencia de administración es otra de las razones principales. En el futuro se considera evaluar el impacto en la adherencia al tratamiento de un programa educativo sobre la osteoporosis y los bisfosfonatos.

A-162 "Caminando sin Estrés" CaSE: A Health Promotion Program

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Background & Objectives: Caminando sin estres is a project of health promotion. It is an initiative of IIPESAG to control the stress in the participants. It has been implemented on three occasions to complete the health promotion design and set the priorities for intervention. Caminando sin estres combined the weight control with exercise and good habits that can help to reduce the level of stress among participants. The objectives were: To identify indicators of the levels of stress. Contemplating integrate physical activity in the daily work. Change dietary habits. Methods: Employees of the Medical Sciences Campus were selected to participate in Caminando sin estres. Participants meet attended all educational activities and integrated all the recommendations into their daily lives. Some of these recommendations were to participate weekly in a group hike and in an educational activity. They received feedback during the process by the program facilitator and the program Director. Results: A group of ten (10) participants (walkers) was constituted. During the project the group used a distinctive logo that was represented through shirts, educational materials, a pedometer and a place matt (My PLATE). Indicators as: weight, body mass, food selection using " My Plate" for the selection of food, and the used of pedometers to count the steps to measure physical activity. Conclusion: After the program design and the definition of indicators Caminando sin estres (CaSE) will be state as a a research proposal to measure real changes in lifestyles and quality of life according with the indicators. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Graciela Marrero, Hector Rivera and Alexandra Concepcion

A-163 A Programs' Journey; MD PhD Combined Program between UPR MSC School of Medicine and UT M.D. Anderson

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Background & Objectives: The main objective of the combined Program is to develop a critical mass of physician-scientists who will lead cancer research, prevention and treatment in Puerto Rico. The collaborating institutions are: the UPR-Me-

dical Sciences Campus (MSC) and UT MD Anderson Cancer Center (MDACC). Methods: The Program formally started on 2008 with an interinstitutional agreement. The MD/PhD Program's structure is focused on translational research. The students earn the MD degree from the UPR-MSC School of Medicine (SOM), and the PhD degree from the UT Graduate School of Biomedical Sciences (GSBS) and MDACC, at Houston. A student must complete the 3rd year of the MD prior to starting the PhD, thus providing strong basis in clinical medicine that allows the trainee to conduct translational research. The student's recruitment starts in college with annual visits to the UPR Campuses. Results: Currently there are 15 students at the Program's pipeline; 8 at the SOM & 7 at UT GSBS and MDACC. Most of the students are conducting research with a Cancer Biology Major. The first 2 students will be completing the dual degree by May 2014. Conclusion: The success of this program relies in recruiting outstanding trainees, world renowned mentors and the dedication of the support personnel. The expectation is for the alumni of the Program to hold a faculty appointment at the UPR Cancer Center, for the improvement of the health and the availability of the best diagnostic and treatment protocols for cancer patients in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH NCI U54 Grant CA096297.

A-164 Drugs and Alcohol: Their Relative Crash Risk

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Background & Objectives: To determine (a) whether among sober (BAC=.00%) drivers, being drug positive increases the drivers' risk of being killed in a fatal crash; (b) whether among drinking (BAC>.00%) drivers, being drug positive increases the drivers' risk of being killed in a fatal crash; and (c) if alcohol and drugs interact in increasing crash risk. Methods: We compared blood alcohol concentration for the 2006, 2007, and 2008 crash cases drawn from the U.S. Fatality Analysis Reporting System (FARS) with control drug and blood alcohol data from participants in the 2007 U.S. National Roadside Survey (NRS). Only FARS drivers from states with drug information on 80% or more of the drivers that also participated in the 2007 NRS were selected. Results: For both sober and drinking drivers, being positive for a drug was found to increase the risk of being fatally injured. When the "drug positive" variable was separated into "marijuana" and other drugs, only the latter was found to contribute significantly to crash risk. In all cases, the contribution of drugs to crash risk was significantly lower than that by alcohol. Conclusion: Although overall, drugs contribute to crash risk regardless of the presence of alcohol, such a contribution is much lower than that by alcohol. The lower contribution of drugs to crash risk relative to that of alcohol suggests the inadvisability of focusing too much on drugged driving, potentially diverting scarce resources from curbing drunk driving. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Support for this effort was provided by the National Institute on Alcohol Abuse and Alcoholism (Grant Nos. R21 AA018158 and R01 AA018352-02).

A-165 Caries Experience of a Sample of PR Adolescents

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Background & Objectives: This cross sectional study of adolescents in Puerto Rico (PR) had aims to evaluate: (1) oral health status and (2) caries experience differences among obese, or overweight (OOVA) and healthy weight (HWA) adolescents. Methods: A convenience sample of 135 adolescents aged 13 to 18 years from 3 public schools were recruited. University of Puerto Rico's IRB approved the study and the consent and assent were completed for each participant. A single visit dental evaluation was performed at the school by a calibrated dentist with ICDAS criteria. The dental evaluation consisted of plaque index, ICDAS caries exam. Height, weight and waist circumference were measured. Statistical analysis was performed using SPSS for descriptive statistics and chi square test. Results: For the Total sample: Mean age =16.5 years; DMFS 3-6 =5.79; DS3-6 =1.9, FS= 3.74; and 26.2% had sealants. For the DMFS index D3-6 =33%. OOVA composed 51% of the sample. OOVA mean age=15.6 years, 51.6% female. The OOVA DMFS 3-6=5.93; DS3-6 =1.98, FS=3.88. HWA mean age=16.37 years; DMFS 3-6=5.66, DS3-6 =1.94, FS=3.59. No statistically significant differences were found for DMFS, DS, FS indexes between OOVA and HWA ($p > 0.05$). SIC index for OOVA was DMFS3-6=24.07, DS3-6 =5.2; 66% female. SIC index for HWA DMFS3-6=12.21; DS= 4.8; 73.7% female. Significant differences were found of obese and overweight children regarding SIC index ($p < 0.05$). Conclusion: No significant differences were found for the overall DMFS 3-6 for obese, overweight and healthy weight PR adolescents although specific caries analysis by SIC index highlighted poor oral health for obese and overweight PR adolescents. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): PR Trust of Research and Technology, Colgate Palmolive Research Donation and Triple S

A-166 Characterization of the relationship between weight and periodontal disease in PR Adolescents

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Background & Objectives: The aim of this cross sectional study was to evaluate the association of obesity and periodontal health status in a group of Puerto Rican (PR) adolescents. Methods: A convenience sample of 184 Puerto Rican (PR) adolescents ages 13 to 18 years from 3 PR public schools was recruited. The

University of Puerto Rico's IRB approved the study. A one visit dental evaluation was performed at the schools by a calibrated dentist. This evaluation included plaque index, ICDAS caries exam, bleeding on probing, probing pocket depth, and recession. Height, weight and waist circumference were measured. Statistical analysis was performed using SPSS. Results: Participants' distribution was: obese (32%), overweight (16%), healthy weight (50%) and underweight (1.5%); females were 62%. Mean number of sites with bleeding on probing, severity grade 3 were greater for obese (5.10) than healthy weight (3.9). Mean number of sites with pocket depth = 4 mm and bleeding on probing > 20% was greater for obese than for healthy weight adolescents. No statistically significant differences were found for severity of bleeding on probing when comparing obese vs healthy weight participants (p = 0.94) Categorization by BMI showed no statistically significant differences for obese and overweigth subjects compared to healthy weigth participants and total number of bleeding on probing sites (p = 0.0.85); periodontal disease (3 or more sites with pocket depth greater than 4 mm) (p = 0.44). Conclusion: Although no statistical significant differences were found for main periodontal parameters and obesity in adolescence, greater values were found for obese and overweight adolescents than healthy weight subjects. Early signs of periodontal disease diagnosis in adolescence may need other definitions of periodontal disease specific for these age group. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): PR Trust of Research and Technology, Colgate Palmolive Research Donation, Triple 2

A-167 Prevalence of Malocclusion of PR Adolescents in Selected Public Schools

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Background & Objectives: The aims of this cross sectional study of adolescents in Puerto Rico (PR) were to evaluate: (1) prevalence of malocclusion and (2) occlusal characteristics of 13-17 year old Puerto Rican adolescents from selected public schools in the municipality of San Juan during 2012-2013. Methods: A convenience sample of 135 adolescents aged 13 to 17 years from 3 public schools were recruited. University of Puerto Rico's IRB approved the study and the consent and assent were completed for each participant. A calibrated dentist performed a single visit dental evaluation at each school. Occlusal characteristics were measured and recorded according to the criteria adopted in the US National Health and Nutrition Examination Survey (NHANES III) and included overjet , overbite, anterior and posterior crossbites, incisor irregularity, maxillary midline diastema and Angle classification. Data were entered in MSExcel and statistical analysis was performed using SPSS for descriptive statistics. Results: 100% of the subjects showed at least one occlusal trait. 12% of the participants had severe overbite of 6mm or more and average overbite was 3.4mm. Maxillary midline diastema of 2mm or greater was found in 8.5% of 13-17-year-olds. 39% and 37% of subjects had 6 mm or more of maxillary and mandibular incisor irregularity, respectively. Posterior crossbite affects 9.2% of subjects and an overjet of 6mm or more was found in 5% of subjects. Regarding Angle molar classification, 74% percent of subjects presented with Class I malocclusion, 6% presented Class II malocclusion, and 19% presented Class III malocclusion. Conclusion: The results showed a high prevalence of malocclusion, highlighting the need to implement preventive measures to improve the oral health of this population. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): PR Trust of Research and Technology, Colgate Palmolive Research Donation and Triple S

A-168 Prevalence of Impacted Maxillary Canines of Puerto Rican Adolescents

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Background & Objectives: The aims of this cross sectional study of adolescents in Puerto Rico (PR) were to: (1) Estimate the prevalence of impacted maxillary canines (2) Calculate the percentage of maxillary canines with delayed eruption (3) Determine the association between gender and maxillary impacted canine. Methods: A convenience sample of 135 adolescents aged 13 to 18 years from 3 public schools was recruited. University of Puerto Rico's IRB approved the study and the consent and assent were completed for each participant. A single visit dental evaluation was performed at the school by a calibrated dentist. The dental evaluation consisted in determine presence or absence of maxillary canine into the maxillary arch and calculate the percentage of canines partially erupted. Periapical radiographs were taken to confirm presence of canine when impacted. When a bulge was present localization was registered as buccal or lingual if feasible. Participants received a behavioral risk questionnaire. Data were entered in MSExcel and statistical analysis was performed using SPSS for descriptive statistics. Results: For the Total sample: Mean age =16.5 years; a prevalence of 3.6 % of impacted canines and 2.2 % of delayed erupted canines , with a total of 5.9% patients that would need orthodontic treatment regarding the canine position. Males had the higher prevalence of impacted maxillary canines. Conclusion: The recent study provides results supported by previous studies of impaction and includes delayed eruption as a condition that combined, would need treatment eventually in 5.9% of the population. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): PR Trust of Research and Technology, Colgate Palmolive Research Donation and Triple S

A-169 Obesity, High Blood Pressure and HbA1c in Puerto Rican Adolescents

Sheira Ramos-Vélez, Lydia López del Valle, Rosana Hanke. University of Puerto Rico Medical Sciences Campus

Background & Objectives: The aim of this cross sectional study was to evaluate the prevalence of high blood pressure, pre diabetes and obesity in a group of Puerto Rican (PR) adolescents. Methods: A convenience sample of 135 Puerto Rican (PR) adolescents ages 13 to 18 years from 3 PR public schools was recruited. The University of Puerto Rico's IRB approved the study. One visit dental evaluation was performed at the schools by a calibrated dentist. Height, weight and waist circumference were measured. Blood pressure and HbA1c were measured. Statistical analysis was performed using SPSS. Results: Participants distribution were: obese(32%), overweight(16%), healthy weight(50%) and underweight(1.5%); females were 62%. Blood pressure greater than 130/100 was found for 13.6% of the total sample of adolescents: obese (38.5%), overweight (5.5%), healthy weight (3.4%) and underweight (0%). Five percent of the sample have HbA1c greater than 5.7 (range 5.7-6.5). Of this 5%, 4 were obese and 1 healthy weight. Of the 5% with high blood pressure, 2 subjects had HbA1c greater than 5.7 and were obese.Using t test and logistic regression analysis statistical significant differences were found for obesity and high blood pressure ($p < 0.001$). No significant differences were found for high levels of HbA1c and obesity ($p = 0.59$). Conclusion: The results of this study showed an important finding of high blood pressure measurements in obese adolescents. Metabolic syndrome may be a risk of future cardiovascular disease and diabetes in adolescence. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): PR Trust Of Research And Technology, Colgate Palmolive Research Donation and Triple S

A-170 Caries experience of a group of GDM Puerto Rican Pregnant Women

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Background & Objectives: No study has been performed on the caries experience on gestational diabetes mellitus pregnant women. The aim of this study was to determine the prevalence of dental caries and DMFT/DMFS indexes among PR gestational diabetes pregnant women. Methods: As a part of an on going clinical study, a cross-sectional data analysis was carried out for the caries prevalence and indexes of a sample of 69 PR gestational diabetes mellitus (GDM) pregnant women based on the baseline visit. At the baseline dental exam the following variables were recorded on each patient: age, weeks of pregnancy, the Decayed, Missing and Filled Teeth and Surfaces Indexes following ICDAS criteria, pocket depth and bleeding on probing, time of last dental visit and procedures performed at it and others. Statistical analysis was carried out with SPSS on an Excell data base. Descriptive statistics were reported. Results: The prevalence of dental caries for the GDM was 72.4%, 48.2% severe caries (DS5-6=3.3). Mean age of the sample was 29.33 years. Mean gestational weeks were 26.88. The D3-6T = 4.70 ± 5.36; FT= 6.96 ±4.97; MT=2.23±2.6, and D3-6MFT = 13.93 ± 7.31. The D3-6S = 7.22± 9.96; FS = 10.56± 8.5; D3-6MFS = 20.05 ± 11.87. Fifty five percent of the patients had more than 1 missing tooth (range 1=8) and 5% presented retained roots (range 1-6). Last time of dental visit ranged from 2 months to 10 years and the most prevalent procedure reported was dental cleaning (72%). Conclusion: High caries rate and dental disease was found in this group of pregnant women. Proper oral hygiene habits in GDM pregnant women should be encourage. Educational strategies on the importance of oral health during pregnancy should be implemented. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NCRR Administrative Supplement ARRA funds Parent Grant 5P20RR020145-05

A-171 Description of Inflammatory Bowel Disease in Pediatric Patients in Puerto Rico

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Background & Objectives: Recent evidence suggests that the natural history of pediatric inflammatory bowel disease (IBD), mainly Crohn's disease (CD) and ulcerative colitis (UC), varies significantly from adult IBD and between racial minorities. Our objective was to describe a pediatric IBD population in Puerto Rico. Methods: A cross sectional approach was utilized. A total of 70 subjects with a confirmed diagnosis of IBD up to 21 years old were recruited from 9 outpatient gastroenterology clinics throughout the island. Data was obtained from medical records by trained study personnel. Gender-specific means and frequency distributions of demographic and clinical characteristics were calculated in a standard fashion. Results: Our population had a mean age of 15.3 years (+ 4 SD) and a mean age at diagnosis of 12.2 years (+ 4 SD). Most were male (57.1% IBD, 62% UC and 55% CD) and 73.1% had CD. Furthermore, 42.8% had public health insurance while 38.5% had private. The most common symptoms upon diagnosis in both UC and CD patients were bloody diarrhea, loose stools and abdominal pain. Disease location in patients with UC was mostly limited to the rectosigmoid colon. The most frequent endoscopic finding in UC patients was backwash ileitis. Conversely, the majority of CD patients had ileocononic disease and had patchy colitis on endoscopy. Conclusion: Although our data is currently not comparable to other studies, our preliminary results suggest that there are demographic and clinical differences in our pediatric IBD population. Prospective, multicenter studies are warranted to further characterize and compare our population with Caucasians and other racial minorities.

A-172 Child, Adolescent, and Young Adult Suicide Trends in Puerto Rico: One Decade

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Background & Objectives: Suicide is a serious mental health problem whose prevalence has increased over the years in many countries including Puerto Rico. Given the scarce amount of descriptive statistics regarding completed suicide in Puerto Rico the purpose of our study was to describe the trends of children, adolescents, and young adults' suicide between the years 2000 and 2010 in the island regarding age, sex, judicial region, suicide method, month, and season of year. Methods: This was a descriptive, retrospective study about suicide prevalence among children, adolescents, and young adults (20 years and under) in Puerto Rico. Investigators reviewed existing data regarding suicide statistics provided by Puerto Rico's Forensic Science Institute. Data was gathered only for individuals under age 21 (n = 175). Various domains (age, sex, judicial region, suicide methods, month, and season of the year) were analyzed using descriptive statistics methods. Results: The preliminary findings show that suicide was more prevalent in the age group between 18 and 21 years of age, in males, during spring, and asphyxiation by suspension was the most common method employed. In the case of the 18 to 21 age group, Bayamon was the region with most completed suicides. However, Ponce was the region with the highest prevalence in those under age 18. Suicide was more prevalent in January for the age group younger than 18 years of age and March for those under 21. Conclusion: Thus, these preliminary findings point out that suicide, especially between these age groups is not something to be overlooked. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors thank Sonia I. Jimenez Mirles and Puerto Rico's Forensic Science Institute for providing the database. There is no potential conflict of interest identified.

A-173 Type 2 diabetes mellitus and colorectal neoplasia risk in Hispanics: A case-control study

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Background & Objectives: Epidemiological studies have provided inconclusive evidence regarding the potential link between type 2 diabetes mellitus (DM) and colorectal cancer (CRC). The association between type 2 DM and colorectal cancer and/or adenomas has not been well studied in Hispanics. The objective is to evaluate the association between type 2 DM and colorectal neoplasia (CRN) in Hispanic adults. Methods: The case-control study included patients with incident CRN and controls with negative colonoscopy and without previous history of CRC or adenomas diagnosed from January 1, 2005 to December 31, 2009. Diagnosis of type 2 DM was established by previous medical diagnosis and/or anti-diabetic medications use. Unconditional logistic regression was employed to estimate the odds ratio (OR) between type 2 DM and CRN using SPSS 17. Results: A total of 472 participants (mean age 60.3 ± 12.5 yrs., 58.5% males), prevalence of type 2 DM was 25.0%. 318 patients with CRN and 154 controls were evaluated. Cases and controls did not differ by median age (p=0.80), family history of CRC (p=0.65) and first degree of family history of DM (p=0.58). There was a statistical significant association between DM and CRN in women (OR=5.77; 95% CI: 1.26-26.42) on adjusted analysis. There was no a statistical significant association between DM and CRN in men (OR=1.17; 95% CI: 0.63-2.19) on adjusted analysis. Conclusion: A tendency towards an increased risk of colorectal neoplasia was observed among type 2 DM patients. We observe a statistically significant association between type 2 DM and CRN in women. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The project was supported by Award Number U54 RR026139 from the National Center for Research Resources, the Award Number 8U54MD 007587-03 from the National Institute on Minority Health, National Cancer Institute Award Number 5K22CA115913-03, R21CA167220-01 and U54CA096297. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

A-174 Health Determinants and Health Outcomes Disparities in Hispanics Older Adults Living in Puerto Rico

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Background & Objectives: Ethnic minority populations of older adults in the U.S. experience health disparities compared to their white counterpart. This study estimated the prevalence of health outcomes and health determinants between Hispanic Older Adult (HOA) living in PR and HOA living in the U.S. Methods: We used data from the 2010 BRFSS (land line only). The analysis was limited to 6,699 Hispanics aged 65 y/o and older. Prevalence measures and cross-tabulations were completed to look at social determinants of health by ethnicity. Results: Older Hispanics living in PR showed a greater proportion of not graduating from high school (HOA PR: 49.5% vs. HOA US: 40.9%) and income less than $25,000 (90.9% vs. 51.2%). They also reported being less likely to engage in physical activity (52.0% vs. 36.3%) and more likely to never have had a digital rectal exam for prostate cancer (25.3% vs 21.7%). They showed greater proportion of self-rated poor health (59.4% vs 43.9%) and a higher proportion of ever diagnosed with angina or coronary heart disease (17.3% vs 11.3%). Conclusion: HOA living in PR have a much higher prevalence of socioeconomic factors, health-risk behaviors and medical conditions than are

found in HOA living in the U.S. Improved health-care access, better preventive screenings, and targeted community-based health promotion programs and policies should be examined as possible ways to reduce health disparities. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by Grants 5S21MD000242 and 5S21MD000138, National Center for Minority Health and Health Disparities, National Institutes of Health. Endowed Health Services Research Center, School of Medicine.

A-175 Nutrition and environmental factors that influence the food pattern of children with autism

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Background & Objectives: To describe the nutritional profile of the population of children receiving services at an Autism Center of the Puerto Rico Metropolitan area. Methods: Data from 36 medical records of the Autism Center of UPR- Medical Science Campus were review. Anthropometric and demographic data, food selectivity, co-morbidities, supplements use, gastrointestinal problems, food allergies, diagnostic classification, behavior while feeding, lactation profile and other information that compose the nutritional profile were obtained. Mean, standard deviation and range was obtained for the anthropometric profile; while frequency described all other variables. Food selectivity and weight classification was compared to see if there was any correlation using Chi-Squared. Results: Food selectivity was present in 21 (58.3%) of participants. There was no statistical correlation between food selectivity and weight classification (chi-squared value of p=0.571 for children 2-5 years and value of p=0.248 when comparing for children 18 months-23 months). There was no identifiable preference for any food group, nevertheless, a predominant reason for food selectivity was observed to be texture. Conclusion: Our study found no association between food selectivity and weight classification, but the presence of food selectivity is a risk for this population of nutritional deficiencies or excess that are not reflected on weight status. It is our recommendation that a Licensed Dietitian makes part of the professional team of an Autism Center for proper nutritional assessment, diagnostic and intervention. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): No funding sources were used for the purpose of this research. The authors have no conflict of interest to disclose.

A-176 Association between Perceived Accessibility to Alcohol and Binge Drinking among Adolescents in PR

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Background & Objectives: Alcohol is the most commonly used substance among teens. Even more troubling, 1 out of every 5 US teens report binge drinking (≥5 drinks in a row) in the last month, a dangerous drinking pattern that increases their risk for several health problems and impairs their decision-making ability. The objective of this study was to estimate the prevalence of binge drinking among Puerto Rican adolescents and to evaluate the association between perceived accessibility to alcohol and binge drinking. Methods: This study is a secondary analysis of "Consulta Juvenil VIII", an island-wide cross-sectional survey. The sample (n=10,134) was selected using a multi-stage stratified cluster sampling design, and is representative of all 7th-12th grade students in PR. Data was collected using a pre-coded self-administered questionnaire. Multiple logistic regression models were fitted. Results: Approximately 93,643 adolescents (34.4%) in PR have recently consumed alcohol (last month), most of whom (61.2%) indulged in binge drinking at least once during that period. Binge drinking was more frequently reported by males and high school students. Over half (61.1%) the students believe that it would be easy or very easy to get alcohol. Over 80% of those who reported binge drinking find it easy to get alcohol. Students who reported easy accessibility to alcohol had 35% higher odds of binge drinking than those who found it hard after adjusting for socio-demographic characteristics (gender, school level, parents' education, and school system). Conclusion: Interventions targeted to limiting the availability of alcohol should have a great impact on decreasing risky drinking behavior among teens. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research supported by the Puerto Rico Mental Health Services and Drug Addiction Administration (ASSMCA, by its acronym in Spanish).

A-177 Malnourished Hemodialysis Patients Profile

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Background & Objectives: Over 40% of hemodialysis (HD) patients are malnourished due to protein-calorie malnutrition and it's related with morbidity and mortality. Project objective was to develop a profile of malnourished hemodialysis patients to facilitate their identification and management. Methods: A total of 177 patients with serum albumin levels of ≤3.5 g/dl were recruited. Patients were eligible to participate in a six months oral nutritional intervention. Baseline data from the oral nutritional intervention were used to create the profile. Results: Results showed a total of 44.1% females in the sample, a mean age of 67.43 years, diabetes mellitus prevalence (83.1%), history of cardiovascular disease (60.5%), history of previous nutritional supplementation (54.2%) and average time on dialysis 27.33 months. Average baseline levels of the nutritional and clinical parameters were: nPCR (0.99g/kg/day), blood hemoglobin (10.75 g/dl), serum albumin (3.22g/dl) and TIBC (183.14µg/

dl). Serum albumin levels confirmed a poor nutritional status among HD patients. Malnutrition Inflammation Score test showed 44% of the HD patients were severe malnourished. Conclusion: HD patient profile identified an elderly population with nutrition problems and identified several factors may be involved on the cause of malnutrition such as age, time in dialysis, diabetes and cardiovascular disease. Patient profile will help determine if oral nutritional supplementation is necessary for the hemodialysis patients. In conclusion achieving evidence-based consensus can help in implementing the progress of knowledge in clinical practice and will help to identify major risk factors that lead to the elderly hemodialysis patients to suffer malnutrition. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Authors express sincere gratitude to the Dialysis Company and its president Dr. Otegbola Ojo, Damaris Vázquez, director of the Department of Nutrition and Dietetics of the company, Ylene Rodríguez company epidemiologist, dietitians, social workers and nurses for providing all the support and helpful comments and suggestions.

A-178 Recommendations to Dental Professionals on a Social Level for Increasing OCS: A Qualitative Approach

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Background & Objectives: Puerto Rican men have one of the highest oral cancer (OC) rates in the Americas with evidence of a general delay in diagnosis. Increasing quality oral cancer screenings (OCS) in dental offices may partially address this delay. The aim of the study was to explore recommendations made from faculty at the University of Puerto Rico School Dental Medicine (UPR-SDM) and private practitioners residing in PR, on the social and organizational level to increase OCS. Methods: Two focus groups (FG) comprised of 7 academics; three with clinical practices and 9 private practice dentists, members of the PR Dental Society. These were overseen by two experienced qualitative researchers. Results: (1) The public needs to be empowered with knowledge of and expectations for OCS by dentists, (2) General Practitioners (GPs) should be able to bill for oral biopsies to all insurance companies, (3) in light of the mandated preventive services included in the Patient Protection and Affordable Care Act, the Puerto Rico College of Dental Surgeons (CCDPR) should promote discussions with health insurance companies regarding reimbursements for screening and adjunct diagnostic tests, (4) auxiliary dental staff could act as oral cancer screening resources. Conclusion: GPs in our FGs assure the quality and quantity of OCS in Puerto Rico can be increased through a change in oral health service system. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): University of Puerto Rico School of Dental Medicine (UPRSDM), New York University College of Dentistry (NYUCD), NIH Funds

A-179 Prevalence of allergic diseases in children living in communities adjacent to the Caño Martín Peña

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Background & Objectives: The prevalence of allergic diseases has increased worldwide, affecting the quality of life of children and posing a serious burden on families and society. However, few data are available on the current status of allergic disease prevalence in underserved children living in the communities adjacent to the Caño Martín Peña (CMP). This study described the prevalence of childhood allergic diseases in children aged 6-14 years living in the CMP. Methods: 147 consecutive children who received health services at a primary care center in Barrio Obrero were recruited between February and August 2013. Parents were interviewed to collect information on sociodemographic, residential and lifestyle characteristics. An adapted version of the International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire was used to determine the prevalence of asthma, allergic rhinitis, and eczema within the previous 12 months. Prevalence was estimated with 95% CI using the normal approach. Results: Mean age of participants was 9.6±2.4 years, and 52.4% were females. Prevalence of allergic diseases in the last 12 months, based on ISAAC, was 22.5% (95% CI: 15.9-30.0) for asthma and 44.2% (95% CI: 36.0-52.6) for eczema. Based on self-reported diagnosis, estimates were 48.9% (95% CI: 40.7-57.3) for asthma and 18.5% (95% CI: 12.5-25.7) for eczema. Prevalence of self-reported allergic rhinitis was 11.7% (95% CI: 6.98-18.1). Conclusion: Prevalence of self-reported asthma was higher than that based on ISAAC; however the opposite trend was observed for eczema. Further studies exploring the reasons of the observed differences are warranted. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): HealthproMed Clinic staff and Proyecto ENLACE del Caño Martín Peña. The study was approved by the UPR-MSC IRB (# 6050113)

A-180 Association between Metformin® and breast cancer in 30-79 year old women from San Juan Puerto Rico

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Background & Objectives: Breast cancer (BC) and diabetes are two of the most prevalent chronic diseases affecting Puerto Rican women. Recent studies have been indicating the possible relationship between the frequently used diabetic control drug Metformin® and BC risk modification. Our aim was to evaluate the relationship between BC and Metformin® among 30-79 years old women from San Juan, Puerto Rico. Methods: A case-

control study was conducted for type 2 diabetic women identified from the base-study entitled Epidemiology of breast cancer in Puerto Rico (Atabey). A telephone interview was performed to assess use of Metformin®. BC risk factors were obtained from Atabey database. Logistic regression analysis was performed to determine factors associated with BC risk. Results: The use of hormone replacement therapy was different among cases (40.0%) and controls (9.1%), but the difference was marginally significant (p=0.07). Results from the unadjusted logistic regression analysis suggests a small increase in BC in diabetic women who didn't use Metformin® (POR: 1.06, 95%CI: 0.18-5.97) when compared with diabetic controls that used Metformin®. When stratified by age we found a decreased risk, though not statistically significant, in women older than 64 years of age using Metformin® (OR: 0.83, 95%CI: 0.07-10.34). Conclusion: Our study suggests that Metformin® is protective for BC in women. The magnitude of the association and the lack of statistical significance may be explained by study limitation: small sample size. Future studies to further assess the association between Metformin® and BC are needed. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The content is solely the responsibility of the authors.

A-181 Birth Prevalence of Oral Clefts in Puerto Rico (2001-2010)

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Background & Objectives: Orofacial clefts (CL/P) are one of the most common birth defects in Puerto Rico. These malformations are located in the facial area including the nose, lips and palate of the individual. The aim of this study is to evaluate the birth prevalence rates of orofacial clefts in Puerto Rico and describe its time trends and patterns. Methods: An analysis of the birth prevalence of CL/P in Puerto Rico was performed to describe its time trends and patterns based upon data from the Puerto Rico Birth Defects Surveillance and Prevention System. The prevalence of CL/P from 2001-2010 was presented for two time periods (2001-2005 and 2006-2010) and analyzed using Fisher's Exact Test. Results: Overall prevalence for 2011 was 18.0/10,000 live births. Trend analysis showed a significant increase (p<0.05) in the birth prevalence of CL/P in Puerto Ricans during the last decade. Prevalence by gender was higher in males than females for cleft lip and cleft lip with cleft palate, but lower for cleft palate for both time periods. There was a cluster of municipalities that have greater birth prevalence than the entire Island (2005-2009) and this difference was statistically significant. When analyzing prevalence by region, we found a difference between Cuba and Puerto Rico. Conclusion: The differences found in the analysis can be a result of a variety of environmental and genetic factors and/or difference in reporting cases to the National Birth Surveillance System. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported by the National Institutes of Health (NIH), grants 3R37DE008559-23S1, R25RR017580, U54 RR026139, and 8U54MD 007587-03.

A-182 Diferenciales Sociodemográficos de la Mortalidad de Alzheimer en Puerto Rico: 2000-2008

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Background & Objectives: Desde el 1999 la mortalidad de Alzheimer ha aumentado, ocupando la cuarta causa de muerte en el 2008. Esta investigación tuvo como propósito identificar en el certificado de defunción la enfermedad de Alzheimer como causa principal o subyacente de muerte en Puerto Rico para el periodo de 2000-2008 e incluyó además, las características sociodemográficas de las personas fallecidas. Methods: La población bajo estudio fue toda persona fallecida en Puerto Rico que en su certificado de defunción se informe la enfermedad de Alzheimer como causa principal o subyacente de muerte en Puerto Rico durante el periodo de 2000-2008. Se utilizaron dos fuentes de información para el análisis, los archivos de Causas Múltiples del Centro Nacional de Estadísticas de Salud (NCHS, en inglés), y los archivos del Departamento de Salud, de éstos se determinó el municipio de residencia y de ocurrencia de los fallecidos, al no estar disponible esa información en NCHS. Results: En el periodo de estudio se registraron 10,551 muertes por enfermedad de Alzheimer como causa principal y 4,845 muertes como causa subyacente (NCHS). El Departamento de Salud informó en ese mismo periodo 2,875 fallecidos como causa subyacente. En ambas causas de muerte, principal o subyacente, el sexo femenino registró más de la mitad de las muertes. La mayoría de las muertes por la enfermedad de Alzheimer como causa principal o causa subyacente de muerte correspondieron a personas entre los 80 y 89 años. Conclusion: La mortalidad por la enfermedad de Alzheimer como causa principal de muerte duplica la mortalidad por causa subyacente.

A-183 Correlates of HIV-HCV coinfection among street-recruited injection drug users in the San Juan, PR

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Background & Objectives: HIV and HCV infections among injection drug users (IDUs) are major public health problems worldwide, particularly in Puerto Rico where risk of infection is very high. This study assessed correlates of coinfection among IDUs living in the San Juan metropolitan area. Methods: We performed a secondary data analysis of 394 IDUs who were recruited through street outreach strategies in 2004. Structured interviews collected information on sociodemographic characteristics, drug use patterns, and risk behaviors. HIV and HCV infections were identified with polymerase chain reaction and confirmed by Western blot. Multivariable ordinal logistic regression was used to assess correlates of

HIV-HCV coinfection. Results: Nearly 80% of IDUs were males, and the mean age was 33.2±9.4 years. Nearly 10% of IDUs were coinfected, 58.9% were monoinfected, and 31.5% were not infected. After adjusting for sociodemographic characteristics, HIV-HCV coinfection was significantly associated with increasing number of times injected in a shooting gallery (OR: 1.74, 95% CI: 1.13-2.69), increasing number of times that shared a cooker (OR: 2.11, 95% CI: 1.08-4.14), increasing number of times backloading (OR: 2.24, 95% CI: 1.07-4.68), increasing number of years of drug injection (OR: 2.62, 95% CI: 1.30-5.29), history of tattooing (OR: 2.78, 95% CI: 1.78-4.36), and increasing number of lifetime casual sexual partners (OR: 1.93, 95% CI: 1.10-3.39). Likelihood ratio test showed that interaction terms were not significant. Conclusion: This study supports the urgent need for more aggressive educational strategies to reduce the risk of HIV-HCV coinfection among IDUs in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.) Grant #5R24DA013335 and IRB Protocol #6050213

A-184 La salud de las personas casadas de edad mayor en Puerto Rico, Proyecto PREHCO: 2002 al 2008

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Background & Objectives: El envejecimiento de la población ha sido uno de los cambios demográficos más significativos que ha experimentado la sociedad puertorriqueña en las últimas décadas. Las ganancias en expectativas de vida han reestructurado los arreglos familiares. La literatura parece señalar que las personas casadas gozan de mejor salud. Este trabajo tiene como objetivos: examinar la salud de la vida en pareja de las persona de edad mayor y comparar la salud de la pareja. Methods: El Proyecto Condiciones de Salud de los Adultos Mayores en Puerto Rico, PREHCO por sus siglas en inglés (Puerto Rican Elderly Health Conditions), es un estudio longitudinal representativo de la población de 60 años o más llevado a cabo entre 2002-2008. Results: La base de datos de PREHCO provee la oportunidad de estudiar el estado de la salud de las personas casadas. Poco más de la mitad (54.2 por ciento) de la población de 60 años o más estaba casada. La proporción de hombres casados casi duplica la de las mujeres (71.4 vs 40.5). En dos terceras partes de las parejas ambos tienen al menos una enfermedad. En 32.5 por ciento tanto el hombre como la mujer padecen de hipertensión y en 8.5 por ciento los dos son diabéticos. Conclusion: Los hombres casados tienen en promedio una enfermedad menos que las mujeres (2.8, 1.6). En menos de cinco por ciento (3.8) por ciento de las parejas ninguno de los dos expresó padecer de alguna enfermedad. La proporción de parejas libres de enfermedades decrece con la edad. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Proyecto sufragado por el National Institute on Aging (NIA), NIH / NIA RO1 AG1620901A2, Organización Panamericana de la Salud (OPS), Legislatura de Puerto Rico y MBRS-RISE(GM-61838)

A-185 Intervalos intergenésicos y características sociodemográficas y de salud de las madres, Puerto Rico: 2006-2011

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Background & Objectives: El intervalo intergenésico se define como el espacio de tiempo que existe entre la culminación de un embarazo y la concepción del siguiente embarazo. La literatura indica que intervalos muy cortos o largos se encuentran relacionados con riesgos para la salud de la madre. El intervalo óptimo se ha señalado como uno de 36 meses. El objetivo de este estudio es el analizar las características de las mujeres que tuvieron un segundo hijo en Puerto Rico para el periodo 2006-2011 así como sus intervalos intergenésicos. Methods: Las fuentes de datos utilizadas fueron los archivos de Nacimientos del Departamento de Salud de Puerto Rico para el periodo del 2006-2011. Results: La media general del intervalo intergenésico para las mujeres los fue 36.25 meses. Cuando se analizó el mismo por la edad que la madre tenía al nacimiento del primer hijo se encontró que quienes comenzaron su maternidad cuando tenían 30 años o más tuvieron un intervalo más corto (27.75 meses). Un poco más de la mitad de las mujeres con un intervalo corto tenían menos de escuela superior mientras que un porcentaje similar de las que tuvieron intervalos largos presentaron escuela superior o más. Un 48% de las mujeres que presentaron más de un riesgo durante su embarazo tuvieron intervalos intergenésicos largos. Dentro de los riesgos se destacaron la preeclampsia (54.8%) y la diabetes gestacional (54.0%). Conclusion: Estos hallazgos nos indican que es importante que se considere el tiempo que existe entre los nacimientos al momento de trabajar el cuidado prenatal de las mujeres.

A-186 Incidence of nasal colonization with community acquired MRSA in contact sports players

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Background & Objectives: Staphylococcus aureus is a bacteria that can be normal flora of the skin but that has been associated with skin infections among contact sports players mostly due to colonization of nares with a variant that is resistant to conventional antibiotic therapy. Staphylococcus aureus is a bacteria that can be normal flora of the skin but that has been associated with skin infections among contact sports players mostly due to colonization of nares with a variant that is resistant to conventional antibiotic therapy. Several risk factors for developing methicillin-resistant Staphylococcus aureus (MRSA) have been identified as responsible for outbreaks among teams. Methods: The purpose of this study was to evaluate if practicing contact sports is a risk factor for developing infections due to MRSA by identifying risky behavior and to correlate it with the incidence of positive nares cultures. Twenty five athletes were enrolled in the study. A questionnaire was handed in to evaluate some practices associated with skin infections. Samples

from nares were also collected from each athlete by means of swabs. Analysis of data revealed that most athletes practiced risky behavior such as sharing equipment with other teammates, body shaving, and not washing hands during games or practice. Results: Of the 25 athletes enrolled, 1 (4%) was identified as having nasal colonization with MRSA. Despite identification of risk factors among this population of athletes, the incidence of nasal colonization with MRSA was 4%, which correlates with a low incidence of previous skin infections (14%). Such a low incidence could be due to having a small sample of athletes for conducting the study. Conclusion: A larger population of players should be studied to evaluate the incidence of MRSA among Puertorrican athletes and to identify those who can be treated to prevent transmission among teammates.

A-187 Survival Analysis of Hospital Stay after Acute Stroke, Puerto Rico Cardiovascular Surveillance Study

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Background & Objectives: Stroke is a leading cause of death, placing a heavy burden on society at a cost of $38.6 billion annually. Length of stay is the major determinant of cost during acute stroke hospitalization. This study evaluated the relationship between length of stay and destination after discharge as outcomes measures of 518 stroke patients at six hospitals in four metropolitan municipalities and Mayagüez, during year 2011. Methods: This secondary analysis was based on data from the PR Cardiovascular Surveillance Study. Prolonged hospital stay (PHS) was defined as hospitalization for longer than 12 days after admission. Comparisons of proportions between groups of length of stay were based on Pearson's Chi-square test. Survival probabilities were determined using Kaplan-Meier curves and log-ranks test. Multivariate Cox proportional hazards models were fitted to identify predictors of length of stay. Results: PHS was recorded in 77 (14.9%) patients. Female gender and being discharged to a Rehabilitation Facility (RF) were significantly more frequent among patients with PHS. Male patients had a higher probability of being discharged within the first 70 days; however, patients discharged to RF showed the lowest probability. Elderly patients showed a decreased Hazard-Ratio of discharge. A significant difference between diagnosis groups with regard to length of stay was also observed (X^2 25.6, p<0.001). Those patients with intra-cerebral hemorrhage were least likely to have shorter length of stay. Conclusion: The survival distribution of length of stay in hospital was influenced by gender, age and discharge destination. Future studies plan to identify clinical predictors for PHS. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study is supported by the University of Puerto Rico Medical Sciences Campus, and the Endowed Health Services Research Center, Grants 5S21MD000242 and 5S21MD000138, National Center on Minority Health and Health Disparities, National Institutes of Health.

A-188 Association between smoking and anal human papillomavirus infection among women in Puerto Rico

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Background and Objectives: Human papillomavirus (HPV) is the most commonly diagnosed sexually transmitted disease worldwide. Tobacco usage is known to act as an immunosuppressant, increasing susceptibility to various diseases. In Puerto Rico, studies assessing the burden of HPV are scarce. Recent studies have shown a possible relation between smoking and anal HPV infection; however, these results remain inconclusive. The aim of this study is to evaluate the relationship between anal HPV and smoking among women 16-64 years living in the San Juan Metropolitan area of Puerto Rico. Methods: Secondary analysis of cross-sectional data (n=536) from the study titled HPV Infection in a Population-Based Sample of Puerto Rican Women. Logistic regression was used to estimate the magnitude of the association between smoking and anal HPV. Results: Mean age of participants was 42.2 years (±SD=13.23), 39.9% had anal HPV infection and 7.6% smoked ≥10 cigarettes per day. Women who smoked ≥10 cigarettes per day had 2.64 (PORA: 2.64, CI 95%: 1.31-5.33) times the possibility of being infected with anal HPV in comparison to their counterparts, after adjusting for potential confounders. Non-significant interaction terms where found in the logistic regression model (likelihood ratio test p>0.05). Conclusions: This study suggests a strong association between heavy smoking and anal HPV infection that warrants public health attention and further research in this area. Results reinforce the need for continued promotion of HPV vaccination in the population, including female smokers. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Study was approved by the UPR-MSC IRB (#A1810213) and partially funded by NIAID Grant # 1SC2AI090922-01.

A-189 Physical Functioning and Grip Strength influences on Bone Health

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Background & Objectives: Over the years, investigators have attempted to identify predictors of bone health in elderly populations. This knowledge could serve as potentially important information that could be used to prevent bone related diseases. The aim of this cross-sectional study is to predict total body, femoral neck and lumbar spine bone mineral density (BMD) in a population of elderly men and women. Methods: The study sample was compromised of a subset of 464 participants from the Fels Longitudinal Study. Measurements of physical functioning were collected using the Medical Outcomes Survey SF-36 form. Grip strength (kg) was measured

using a JAMAR hand dynamometer. BMD (g/cm^2) measurements were taken using a dual energy x-ray absorptiometry. All analyses and descriptive statistics were performed using JMP. Sex-stratified multiple regression models adjusting for significant covariates were used to examine the relationships of physical functioning and BMD. Results: The relationship between BMD and physical functioning was significant in the femoral neck area for men and in the total body for women. On the other hand, the relationship between grip strength and BMD was significant in the femoral neck for men and there was no evidence of significant association in any of the areas for women. Conclusion: Our results suggest that physical functioning and grip strength may be good indicators of femoral neck BMD in men. Surprisingly, physical functioning and grip strength were not significant among women. This was a cross-sectional study that contains certain limitations, therefore a longitudinal study would be recommended. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by NIH grants NICHD R01HD012252 and NIAMS R01 AR052147.

A-190 Health conditions and health care access in children with autism: Puerto Rico, 2011

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Background & Objectives: Autism is a highly prevalent condition in Puerto Rico (PR) with 1 of 62 children having this condition, based on a 2011 population-based survey 4 to 17 year old children. Little data are available on the associated conditions prevalent among children with autism and their access to health care services. The objective of this study is to identify the prevalence of health conditions in children with autism in PR, and their impact on the health system. Methods: A telephone-based random-digit-dial of the 8 health regions of PR using a structured survey based on questions of the National Survey of Children Health (NSCH) and the National Health Interview Survey (NHIS) translated to Spanish. Autism was defined based on parent or guardian report: a health care provider indicated that the child had autism. Results: Among children with autism, some conditions were highly prevalent: gastrointestinal conditions (30%, 95% CI 22%-38%), food allergies (23%, 95% CI 15%-31%), respiratory allergies (30%, 95% CI 22%-39%) and anxiety (47%, 95% CI 38-56) among others. A comparative analysis between public and private insurance coverage showed a difference in coverage of needed services by type of insurance (p value < 0.00). Conclusion: Parents of children with autism reported a varied comorbid conditions that require additional health services. These results highlight the urgent need to improve health care services toward families impacted by autism at all ages in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was funded by the Department of Health, Government of Puerto Rico (Contract No. 2010-DS 0683).

A-191 Is the Association between Physical Activity and C-reactive protein independent body composition?

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Background & Objectives: Epidemiologic evidence regarding the association between physical activity (PA) and C-reactive protein (CRP) is not consistent, particularly after adjusting for BMI. However, the contribution of fat distribution in this association has not been widely assessed. Objective: We assessed the cross-sectional association between PA and CRP adjusting for body fat percent (fat%) distribution in 1,388 overweight adults 40-65 years old participating in the Study of Overweight Adults Longitudinal Study. Methods: PA information was collected by interviewer-administered questionnaires, and was converted to metabolic equivalent hours per week. Information on age, gender, smoking and alcohol consumption status was also collected. Fat% was determined using Tanita's bioelectrical impedance analysis. DM and prediabetes status was determined using fasting plasma glucose, hemoglobin A1c, and oral glucose tolerance. CRP was determined using an ELISA. High density lipoprotein cholesterol (HDL-C) and triglycerides were measured from fasting blood draws. Multivariable linear regression was used to model the association between PA and CRP after adjusting for covariates. Results: In age- and gender-adjusted models, every unit increase in METs was associated with a decrease in CRP (β =-0.016, p<0.001). Additionally adjusting for smoking, diabetes, HDL-C, triglycerides, and fat%, METs remained associated with decreased levels of CRP (β =-0.009, p=0.03); however, when this model was adjusted for BMI instead of fat%, the decrease was no longer significant (β= -0.004, p=0.3). Conclusion: The present findings suggest that the association between PA and CRP remained significant after adjusting for fat% and several metabolic factors. However, BMI appears to be a mediator in this association. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH R01DE020111 & NIH-NCRR 1U54RR026139-01A1

A-192 Correlation of self-reported and measured weight and height and resulting BMI in an overweight population

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Background & Objectives: The purpose of this study was to evaluate the validity of self-reported weight and height and resulting BMI compared with standardized clinical measurements. Methods and Procedures: We analyzed data from 1,311 San Juan Overweight Longitudinal Study participants 40 to 65 years of age to compare the self-reported of weight, height and resulting BMI recorded during the screening process with standardized clinical measurements obtained by study personnel. Results: 71% of the participants were wo-

men with a mean age of 50 (SD: 6.8 years). Mean BMI based on self-reported data was slightly lower than BMI based on clinical measures (32.6 ± 6.2kg/m^2 and 33.5 ± 6.4 kg/m^2 respectively, p<0.001). Participants under-reported their weight (mean difference: -0.40 kg) and over-reported their height (mean difference: 0.42 cm). Women under-reported their weight more than men (-0.71 kg and -0.02 kg, respectively, p=0.08). Obese participants under-reported their weight, whereas overweight participants over-reported it (-1.1 kg and 0.63 kg, respectively, p<0.0001). Pearson correlation coefficients between self-reported and measured weight, height, and resulting BMI were: weight (r=0.95, p<0.0001), height (r=0.56, p<0.0001) and BMI (0.91, p<0.0001). Conclusion: Self-reported measures for BMI calculation are a good surrogate for epidemiological studies that may not have the resources or logistics to conduct standardized measurements. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH R01DE020111 & NIH-NCRR 1U54RR026139-01A1

A-193 Características sociodemográficas de la población inmigrante a Puerto Rico luego del año 2000

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Background & Objectives: La migración ocurrida en Puerto Rico ha estado asociada con el descenso en población observado en la última década. Los flujos migratorios de salida y entrada han tenido repercusiones demográficas, sociales y económicas para el país. El objetivo de la investigación fue examinar las características sociodemográficas de la población inmigrante en PR luego del año 2000. Methods: La fuente de información fue el "Puerto Rico Community Survey", 2005-2010. El tipo de estudio fue uno transversal descriptivo. Results: PR tiene un saldo neto migratorio negativo, salen más personas de las que entran. El 8% de la población residente en PR nació fuera del país. Del total de inmigrantes en PR, un 24% entró luego del año2000. Los principales grupos de inmigrantes corresponden a nacidos en Estados Unidos (62.9 %), Republica Dominicana (20.3%) y Cuba (5.3%). Los inmigrantes recientes provienen de estos países, aunque en menor proporción, adquiriendo importancia numérica personas provenientes de Colombia (2.7%), Venezuela (2.4%) y Méjico (2.2%). Los inmigrantes recientes son más jóvenes que la población total de PR y que el total de estos en la Isla. Tienen una mayor proporción de féminas y más de la mitad no ha completado la escuela superior. Este grupo posee una mediana de ingreso baja muy parecida a la de la población nativa. Cuatro de cada 10 son solteros. Conclusion: Es imprescindible tomar en consideración las características de la población inmigrante para el desarrollo adecuado de políticas dirigidas a lograr el bienestar de estos grupos, en particular de aquellos más vulnerables demográficamente.

A-194 La Obesidad y sus Determinantes Sociales en los Estados Unidos: Un Modelo de Predicción

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Background & Objectives: La literatura reciente sobre la epidemia de la obesidad ha señalado la necesidad de desarrollar modelos que incorporen los predictores constituyentes del macro-ambiente obesogénico para poder representar con más precisión su complejidad contextual y sistémica. Diversos estudios han detallado a saciedad los factores de riesgo de la obesidad tales como enfermedades cardiovasculares, actividad física, en fin, factores biológicos. Sin embargo, fallan en incorporar aquellos factores que mueven las poblaciones, por ende mueven a los individuos; factores sociales que inundan cada día las acciones del ser humano. Este estudio pretendió crear un modelo de regresión lineal múltiple para la predicción de la obesidad utilizando exclusivamente factores sociales. Methods: Se creó una matriz con datos del 2010 para los Estados Unidos por estado (incluyendo a Puerto Rico), detallando variables como: promedio de horas trabajadas, porciento de personas que reciben cupones ("food stamps"), porciento de trabajadores que caminan al trabajo, entre otras. Estas variables fueron extraídas del "American Community Survey 2005-2010" del Censo y de la base de datos del CDC. Results: Con una N=52, y siete variables independientes, pudimos concluir con un r= .853 p<.01, explicando un 72.83% de la variación en la obesidad. Conclusion: Por medio de este modelo de regresión lineal múltiple se pudo probar que existen factores sociales que inciden en la obesidad de los individuos a nivel poblacional. Demostrando así, que la medicina debe tomar un giro a considerar las composiciones sociales que existen a nuestro alrededor.

A-195 Determinant Factors for Parents Willingness to Accept the HPV Vaccine for Their Children

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Background & Objectives: Genital human papilloma virus (HPV) is the most common sexually transmitted infection and can cause serious health problems. HPV vaccines have been received with skepticism. Information on HPV infection and vaccination rates in children is limited in Puerto Rico. Our aim is to assess the knowledge of parents regarding HPV and its vaccine, their disposition to vaccinate their children and reasons for not doing so. Methods: A self-administered anonymous questionnaire was answered by parents of children ages 8-18 receiving medical care at the University Pediatric Hospital. Analysis was performed using Statistix 8.0 software. The study was approved by the IRB. Results: The study included 57 parents [mean age 38 years (range 26-57)]. Seventy-five percent (75%) had heard about the HPV vaccine and 45% have been offered it for their children. Sixty-one percent (61%) of parents planned to give

the vaccine to their children or had already done so. Having a child with a chronic disease (p=0.026) and thinking that the vaccine has dangerous side effects (p=0.031) made less likely the parents willingness to accept the vaccine. No association was found between accepting or not the vaccine and parental age, education, or type of health insurance. Conclusion: Parents whose children are affected by a chronic disease, or think the vaccine has dangerous side effects, are more prone to decline immunizing their children. It is important to create an educational strategy for parents in order to increase the immunization rates and prevent this infection among adolescents in Puerto Rico.

A-196 Puerto Rican Adolescents' Substance Use and Its Associated Risk and Protective Factors

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Background & Objectives: Youth drug use is a major public health issue in Puerto Rico. The most promising route to effectively develop strategies for prevention on adolescent substance use problems is through a risk and protective approach. This approach requires the identification of the risk and protective factors and the implementation of a science based program that address those factors effectively. Describe the socio-demographic characteristics of the adolescents' in the sample; Describe the prevalence of drug use among the Puerto Rican adolescents; Identify the risk and protective factors for drug use in the Puerto Rican school population. Methods: This cross-sectional study, "Consulta Juvenil VIII", was carried out during (2010 to 2012) in a multi-stage stratified cluster sample. A total of 10,134, 10th-12th grade students in public and private schools in PR answered a pre-coded self-administered questionnaire. Results were weighted to represent approximately 275,758 students. Results: The substance most used by adolescents was alcohol (48.6%) and tobacco (14.3%). Other drugs used by students were: marijuana (12.4%), non-prescription pills (6.1%), and inhalants (6.1%). The most significant risk factors identified were: involvement with peers that use drugs, family with history of substance use, and availability of alcohol, cigarettes and drugs. The protective factors identified were: unfavorable attitude toward drug and tobacco use, family unfavorable attitude toward tobacco and drug use, and perceived risk of tobacco. Conclusion: This study confirms that there are different factors involved in teenagers' decision-making of using drugs. The challenge is to stimulate teenagers' adopt lifelong behaviors that maintain their health and well-being. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research supported by the Puerto Rico Mental Health Services and Drug Addiction Administration (ASSMCA, by its acronym in Spanish).

A-197 The Southern Puerto Rico Homeless Sociodemographic & Health Survey 2013

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Background & Objectives: Given the insufficiency of studies regarding homeless people in Puerto Rico, specifically in the southern area of the island, and the necessity to recognize and characterize this population, a questionnaire was design to recognize this population socio-demograhic and health characteristics, habits, health care use and other uniqueness of this population, along with their needs for health services. 1. Provide a preliminary description of a socio-demographic and health profile of the homeless adults in the southern of Puerto Rico. Methods: Design- Cross-sectional study Sample- 99 - homeless people (83 men and 16 women), who at the time of the study where more than 21 years old, not pregnant & agreed to participate voluntarily. Sampling method- Non-probabilistic convenience sample Data Recollection Technique- Questionnaire interview Statistical Analysis- Frequency Distributions. Results: Average age of the homeless, was 47.67 years. Only 28% complete their high school achievement, and 13% have higher education, which means that 59% can be classified as dropouts. The reasons most often contributed to cause the abandonment of their homes were: drug use (62.6%) and family problems (54.5%). The health conditions that most affect homeless people are depression (31.3%), hypertension (24.2%), liver diseases (19.2%). Conclusion: A short questionnaire (that could be completed in 5 to 8 minutes) was design and culturally adapted for the Puerto Rican homeless population. It is important to continue obtaining data in the most lagging zones in Puerto Rico, to create projects that will help this population. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): We would like to thank Prof. Himilce Velez, from the DBE//PRCTRC for all her support in the statistical and methodological advice. We also want to recognize the MPH 1st year students of Ponce School of Medicine and Health Sciences for their collaboration in the interview process.

A-198 Sensibilidad a aéreo-alérgenos y grado de severidad de asma en niños de 5 a 18 años, Red de Asma Infantil de PR: 2004-2009

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Background & Objectives: El asma es la condición más prevalente en la población pediátrica de Puerto Rico (Prevalencia: 20.1%; IC 95%=19.4,20.9). Estudios han encontrado una asociación entre sensibilidad atópica y severidad de asma. El objetivo de este estudio fue determinar si existía asociación entre la sensibilidad a al menos un alérgeno y el grado de seve-

ridad de asma en niños de 5-18 años luego de haber completado un año de participación en La Red de Asma Infantil de Puerto Rico 2004-2005. Methods: La Red adaptó intervenciones desarrolladas en poblaciones estadounidenses manteniendo en perspectiva la idiosincrasia de las comunidades participantes. La muestra para este estudio transversal consistió de participantes de La Red identificados en un censo de asmáticos que accedieron a realizarse pruebas de alergia y que completaron una entrevista de salida. Los 97 participantes se clasificaron según la severidad de asma (leve o moderada/severa) y según el resultado de las pruebas de alergias (atopía presente vs. atopía ausente). Results: El 71% presentó asma leve y el 29% presentó asma moderada/severa. Luego de haber completado un año de intervención, la posibilidad de tener asma moderada/severa fue 29% (PORcrudo=1.29; IC95%:0.45-3.70; p=0.630) mayor en los niños asmáticos con atopía en comparación con los niños asmáticos sin atopía. La magnitud de la asociación varió en función del sexo (PORmasc=2.96; IC95%: 0.57-15.28; PORfem=0.44; IC 95%: 0.09-2.09). Conclusion: La asociación entre la sensibilidad atópica y la severidad del asma después de una intervención debe ser evaluada por estudios analíticos con un tamaño de muestra mayor.

A-199 Modulación sensorial en andarines de Puerto Rico, aspectos conductuales y estrés durante el embarazo

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Background & Objectives: El desorden de modulación sensorial limita la capacidad del niño para responder en congruencia con los estímulos sensoriales de sus ambientes cotidianos (e.j., hogar, escuela, espacios de juego). Este estudio tuvo como propósito describir los patrones de modulación sensorial de una muestra de andarines de PR considerando sus expresiones conductuales-emocionales y el estrés de sus madres durante el embarazo. Methods: Participaron 104 madres de andarines reclutadas en centros de cuido y una oficina de pediatra completando los siguientes instrumentos: cuestionario sociodemográfico, Perfil Sensorial para Infantes y Trotones, Lista de Cotejo del Comportamiento Infantil (CBCL, en inglés) y Escala de Reajuste Social (medida de estrés). Results: Un 26% de la muestra presentó problemas de modulación sensorial. Los participantes en el rango clínico de conductas internalizantes del CBCL presentaron puntuaciones indicativas de dificultades de modulación sensorial relacionadas con conductas de Registro, Búsqueda y Evitación. Se encontró diferencia significativa en la escala de estrés entre los participantes con diferencia probable y diferencia definitiva en el Perfil Sensorial. Aquellos con diferencia definitiva obtuvieron puntuaciones indicativas de mayor estrés durante el embarazo. Conclusion: Estos hallazgos sustentan hallazgos previos sobre la relación entre las variables modulación sensorial y aspectos conductuales emocionales. Este es el primer estudio en considerar la variable estrés en el embarazo al examinar los problemas de modulación sensorial, basándose en información provista por participantes humanos (estudios previos han utilizado modelos animales). Se requiere de mayor evidencia que sustente las relaciones entre estos factores y viabilice el diseño de programas de prevención.

A-200 Pharmacy Type as a Determinant of Medication Adherence in Puerto Rico for Selected Chronic Condition

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Background & Objectives: Medication non-adherence to cancer, human immunodeficiency virus (HIV), multiple sclerosis (MS), and rheumatoid arthritis (RA) prescriptions leads to adverse health outcomes. We examined the proportion-of-days-covered (PDC), its determinants, and the impact of filling these prescriptions through specialty pharmacies compared to traditional retail pharmacies for each disease state among Medicare and Commercial beneficiaries. Methods: We assessed adequate adherence as having a PDC ≥ 80% among beneficiaries in Abarca Health's book-of-business with at least two (2) pharmacy claims for cancer (n=4,217), HIV (n=461), MS (n=106), or RA (n=401) drugs using Medi-Span's Generic Product Identifier (GPI), from January 1st, 2012 through June 30th, 2013. Logistic regression odds ratios (ORs) and a 95% confidence intervals (CI) were calculated, adjusting for demographic factors. Results: "Pharmacy type" was not associated with adequate levels adherence (PDC ≥ 80%) among Medicare beneficiaries. However, Commercial beneficiaries served by a specialty pharmacy were more likely to have improved adherence (OR=5.03, 1.05–24.15) if they suffered from HIV, and reduced adherence (OR=0.75, 0.57–0.99) if they had cancer or RA (OR=0.58, 0.34–0.97), respectively. Conclusion: Medication adherence is suboptimal among Medicare patients suffering from these conditions in Puerto Rico regardless of "Pharmacy type". Specialty pharmacy management was associated with mixed adherence results for HIV, cancer and RA patients. Local specialty pharmacies' role on the overall medical resource utilization and subsequent associated costs should be examined further. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors thank Alga S. Ramos, Pharm Dc and Irma Echevarría, Pharm D for their support in this project. This work was supported by a research grant from Abarca Health, LLC. All authors are employees of Abarca Health LLC, which manages Medicare Part D pharmacy benefits in Puerto Rico. Opinions expressed here are only those of the authors and do not necessarily reflect those of the sponsor.

A-201 Association of Sleep Duration with Serum Cholesterol in San Juan Overweight/Obese Adults (2011-2013)

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Background & Objectives: Sleep duration is associated with lipid metabolism, obesity and cardiovascular diseases. The aim of this analysis is to determine the association between sleep duration and serum cholesterol. Methods: A cohort study of overweight/obese adults aged 40-65 years was conducted. After excluding those taking lipid medications, 1198 were included for the analyses. Socio-demographics and sleep pattern characteristics were collected using a questionnaire administered by an interviewer. Fasting blood was used for lipid panel testing. Results: Mean age was 50.0 ± 6.6. Most of the participants were women (72.7%), and below poverty level (59.6%). Duration of sleep was categorized as short (< 6 hours), medium (6-8 hours), and long (> 8 hours). Individual association between sleep duration and each one of the lipid panel components (low density lipoprotein, very low density lipoprotein, high density lipoprotein, triglycerides, and total cholesterol) were evaluated. Only VLDL was significantly associated with sleep in the univariate analysis. A logistic model was created using VLDL (2-30 mg/dL normal and >30 high mg/dL) as outcome. The odds ratio of relating high level of VLDL in participants with sleep duration was greater than 8 hours compared to < 6 hours was 2.30 (95% CI: 1.41-3.74), after adjusting for income, gender, age, BMI, smoking habits and interactions of age with gender, BMI and smoking habits. Conclusion: Our findings supports that long sleep duration is associated with high level of VLDL. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH R01DE020111, NIH-NCRR 1U54RR026139-01A1 & NIMHD 8U54MD 007587-03.

A-202 Anti-D Alloimmunization After D- Incompatible RBC Transfusions: a 6-Year Retrospective Review

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Background & Objectives: Uncrossmatched type-O-negative red blood cells is recommended for the immediate transfusion in emergency situations when the patient's blood group is unknown. In order to preserve the O-negative inventory, O-positive blood is given to females older than 45 and all males. Transfusion of D-positive RBCs to D-negative recipients can lead to alloimmunization with associated risks of hemolytic reactions from subsequent mismatched transfusions. The incidence of anti-D-alloimmunization among massively transfused trauma patients remains to be quantified. Methods: Transfusion Service database and electronic patient files were linked to perform a retrospective analysis of every emergency transfusion to trauma patients during a six year period. Rh-typing and antibody screening were reviewed for each patient to determine whether potential sensitizing events occurred. Results: 51 D-negative patients (out of 1,359 patients identified) received D-positive RBC transfusions; 27 of those patients had an antibody screen performed after 4 days of Rh-incompatible transfusion and 24 patients were excluded from analysis due to presence of prior anti-D and lack of follow-up antibody screening. Of 27 eligible D-negative patients, 22% (6 patients) developed anti-D. A significant observation was that 2 patients who received incompatible D-positive RBCs with evidence of prior anti-D did not manifest any severe transfusion reactions. Conclusion: No clear correlation was found between Rh-antibody response and the number of Rh-positive transfusions. In a significant number of patients, follow-up anti-D antibody screening was not performed, which has lead us to revise the emergency transfusion protocol to establish a norm in which Rh-incompatible transfusions must be followed-up at 3 months for sensitization.

A-203 Desarrollo de un currículo educativo de clases de parto Lamaze en las clínicas prenatales de COSSMA

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Background & Objectives: El parto es un evento de suma importancia en la vida de la mujer, dado que constituye un momento único para el binomio madre-hijo. Una experiencia negativa afecta la toma de decisión para un embarazo subsiguiente y aumenta el riesgo de depresión antenatal durante el segundo embarazo. Objetivo: Presentar un plan de implementación de un currículo educativo de parto Lamaze para la región Caguas. Methods: Se realizó una revisión sistemática de literatura sobre las experiencias de parto y el impacto del mismo en la vida de la mujer, infante y familia . Se analizaron los resultados y la discusión de un estudio sobre las experiencias de parto humanizado vs parto medicalizado en un grupo de mujeres primíparas. Se diseñó un plan de trabajo para la implementación un currículo educativo de clases de parto Lamaze. Results: Al presentar el plan de implantación de un currículo educativo de clases de parto Lamaze, en las clínicas prenatales de COSSMA, mostraron interés en adoptar el plan. Según los hallazgos de la entrevista, el personal profesional del programa y la agencia poseen las destrezas necesarias para adaptarse a los cambios sugeridos. Puerto Rico tuvo para el 2006 un 48.4% de cesáreas. 63.7% cesáreas primarias, 40.9% primerizas, 22.7% primera cesáreas en 2ndo, 3er, 4to hijo, 36.3% cesáreas repetidas. Conclusion: Es vital que en Puerto Rico se tomé acción en este tema, comenzando por educar a la mujer con información sustentada con base científica. Entre todos los currículos existente Lamaze ofrece un currículo educativo basado en evidencia científica.

A-204 Caring for the Caregiver of Cancer Patients

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Background & Objectives: The caregiver is the person who daily helps, without pay or training, a person who suffers from a disease. Since cancer is a highly prevalent and severe condition, the caregiver for a cancer patient faces a great physical and emotional challenge. The objectives of this presentation are to discuss the role of the caregiver for a cancer patient, caregiver's strain and burden, and the recommendations and therapeutic interventions to treat the strain and burden of a cancer caregiver. Methods: A systematic literature review was done using PubMed, a free scientific literature database that is developed and maintained by the National Center for Biotechnology Information. Literature from the American Cancer Society and the National Cancer Institute were also considered. Results: Hispanic households have the highest prevalence of a caregiver caring for a patient when compared with other groups. The caregiver helps and supports the cancer patient in many ways: helps in personal hygiene and other needs, gives medications and observes its effects, provides transportation, among others. Unfortunately, this role may lead to caregiver's strain and burden, which can be harmful for both the caregiver and the patient. Fortunately, there are many ways for the caregiver to face them for the benefit of both the patient and him/herself: support groups, temporary relief breaks, psychotherapy, among others. Conclusion: It is important to educate and train physicians and other health professionals about the needs of the caregivers of cancer patients and consider them in the routine care of their patients.

A-205 Quantitative Detection of Bacteria Pro-Inflammatory Genes Directly in Human Stool Samples

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Background & Objectives: Numerous studies have established the definitive association between the presence of certain bacteria in the human intestinal flora and the development of chronic gastrointestinal diseases. In this work, we developed a rtPCR assay for the detection of bacteria pro-inflammatory genes directly from human stool samples. As a test case, we chose the pks island genes that are present in some strains of intestinal Escherichia coli, and have been shown to induce DNA damage and aberrant inflammatory response. Methods: Metagenomic DNA was extracted from anonymous stool samples and used as the template for a rtPCR reaction. The fluorophore SYBR Green I was used to visualize the real time amplification response. Results: The linearity for the SYBR Green I response with increasing amounts of input DNA was recorded in a standard curve with a correlation value of 0.9952. The fluorescence signal was detected in all pks+ samples after 19 cycles for HUO22, 16 cycles for HUO38, 22 cycles for HUO58 and 20 cycles for HUO71. As for the pks- samples, two of the four samples the fluorescence signal was detected at cycle 25 for HUO51 and cycle 27 for HUO59. Conclusion: The fluorescence signal detected in pks- sample could be attributed to contamination between sample or non-specific amplification. However, no fluorescence signal was detected in the negative control and the blank. Work is underway for the optimization of this assay towards the screening of patient samples. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by NSF grant CHE0953254 to ABO and NIH grant R25GM061838 (MBRS RISE Program) to RGM.

A-206 Toll-like Receptor Signaling Pathway in the Sea Anemone Nematostella vectensis

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Background & Objectives: The Toll-Like Receptor 4 (TLR4) is a transmembrane protein that recognizes lipopolysaccharide, which is located on the cell membrane of gram-negative bacteria. The TLR4 plays a fundamental role in the activation of the innate immune system (IIS) in humans, which serves as the first line of defense against infections. Pathogen recognition activates a cascade of intracellular molecules that eventually lead to the activation NF-κB, that is the primary transcription factor responsible of activating innate immune response genes. To elucidate the evolutionary origins of the IIS, this research focuses on the TLR4 signaling pathway in the sea anemone Nematostella vectensis (Nv). This anemone is emerging as the leading model organism for the phylum Cnidaria (including corals). Methods: The Nv sequenced genome revealed to share many genes and genomic features with vertebrate genomes. Using bioinformatics, we identified a TLR4 sequence with extensive amino acid similarity to the human TLR4 protein. To clone the Nv-TLR4 gene, we purified gDNA from adult anenomes, amplified the Nv-TLR4 gene in two fragments by PCR, and subcloned the gene. Results: Results establish that our predicted sequence was correct, and only the 5' fragment was successfully subcloned. Conclusion: Ongoing studies aim to subclone the full-length Nv-TLR gene into a eukaryotic expression vector to characterize the Nv-TLR protein using mammalian cell-based and biochemical systems. This study is important for the development of novel anti-microbial agents and for understanding how simple marine organisms respond to environmental stress. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by NSF-REU program.

A-207 Zebrafish Skeletal Muscle Thick Filaments; Preservation of Tissue with Refined Isolation Technique

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Background & Objectives: Mutations in skeletal muscle thick filament associated proteins, such as slow Myosin-binding Protein C 1 (MYBPC1), are major cause of distal arthrogryposis

type 1 and the mechanisms by which mutations of this protein occur are unknown. Zebrafish (Danio rerio) has become an alternative system to the mammalian model to examine the development and functioning of the musculoskeletal system. Our main objective is to establish an isolation method and further improve it to examine the structure of both native zebrafish skeletal myosin thick filaments and filaments with mutations in the thick filament associated proteins. Therefore, to understand mutations in thick filament associated proteins, we must first determine the normal structure of the zebrafish skeletal thick filaments. Methods: We were able to isolate the zebrafish skeletal thick filaments without the use of proteolytic enzymes, as a modification of previously described techniques. We have analyzed the preservation of these filaments with the use of electron microscopy, Fourier transforms, and SDS- electrophoresis gels. Results: Electron microscopy of filaments after negative staining has shown to preserve the typical 43nm axial repeat and the quasi-helical strands. Fourier transforms show a series of layer lines from the thick filaments confirming that the unique relaxed patterns has been preserved. SDS-Gels also show evidence of the preservation of thick filament associated proteins. Conclusion: The isolation technique was effective in the preservation of tissue and the thick filaments retained their relaxed structure. We plan to further make comparisons of normal skeletal tissue against mutated skeletal tissue and state structural differences between them. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH grant SC1HL096017 to RWK and UPR-RCM RISE Program to MGS.

A-208 BOX-PCR DNA fingerprinting used to characterize diversity of termite nest associated actinobacteria

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Background & Objectives: Nasutitermes is a genus of higher termites within the eusocial insects. Their condition makes them vulnerable to pathogenic attacks because their nests are constructed among common waste buildup and because they are genetically more similar between themselves than to other populations. It has been shown that other social insects (e.g. ants, bees) developed symbiotic relationships with actinobacteria to protect themselves from such attacks. Methods: To investigate this type of relationship in termites we isolated actinobacteria from two species of termites, N. costalis and N. acajutlae, from three different habitats: mangrove, humid and dry forest. BOX-PCR fingerprinting techniques were implemented for the identification of actinobacteria strains present in the nests of Nasutitermes termites. A phylogenetic tree was constructed by computing the transitive closure between each strain using a presence/absence matrix and applying the Neighbor-Joining cluster method. Habitat and termite species from where each strain was isolated were mapped on the tree to assess what factors contribute to the diversity of actinobacteria. Results: Twelve distinct clusters were identified; two of them were found to contain actinobacteria strains associated exclusively with N. costalis in two ecological zones: the humid forest and mangrove. Conclusion: The data support a direct association between these strains and N. costalis and demonstrates that the determining factor in the diversity of Actinobacteria strains is most probably the species that they associate with and not so much the environmental conditions under which they live. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the University of Puerto Rico Mayagüez Campus Symbiosis Laboratory and the National Science Foundation.

A-209 Effects of the Overexpression of Programmed Cell Death Related Genes MmBid, MmBax and Cytc in Plants

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Background & Objectives: Program Cell Death plays a vital role in the annihilation of undesirable cells in eukaryotic species. Plant PCD is essential for plant development and stress response. In contrast to apoptosis, plant PCD is poorly understood at the molecular level. However, several morphological and function similarities between them have been described. Two factors, Bid and BAX, have been shown as essential for cytochrome c release in apoptosis. A model is proposed, in which cytochrome c, BID and BAX cooperate to promote the redistribution of Cardiolipin via vesicles in PCD. Here we plan to analyze the localization of these three proteins during PCD. Mice factors Bid,Bax and Arabidopsis Cytochrome c will be overexpressed in Arabidopsis thaliana to elucidate the Plant PCD. Methods: The coding sequences of these proteins were amplified and cloned using Gateway Cloning System. Using Agrobacterium Transformation the genes were transferred to Arabidopsis. Results: The overexpression of the mammalian protein Bax in N-terminal display leaf necrosis, while the overexpression of Bid did not showed any sign of cell death. Using fluorescence microscopy the localization of the PCD related proteins were analyzed, YFP-Bax and t-Bid were localized in mitochondria. Conclusion: The overexpression of mammalian protein factor Bax induced cell death in Nicotiana tabacum. These results showed that plants contain an analogous structure to mammalian protein Bax. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the Plant Genomic Program at MSU and the Rise Program, NHI grant R25 GM059429.

A-210 IGF1R loss promotes cell cycle arrest in the small intestinal crypts following radiation

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Background & Objectives: Insulin-like growth factor 1 receptor (IGF1R) is known to exert mitogenic and anti-apoptotic actions on intestinal epithelial cells (IEC). IGF1R mediates survival or proliferation of intestinal crypt cells following genetic damage has not been directly demonstrated. We hypothesized that loss of IGF1R in the intestinal epithelium would enhance cell cycle arrest in the crypts of the small and large intestines after radiation-induced DNA damage. Methods: Mice with Villin-Cre mediated deletion of IGF1R in entire intestinal epithelium (VC-IGF1RΔ/Δ) and littermate controls with floxed but intact IGF1R (WT-IGF1Rfl/fl) were irradiated with a dose of 5 Gy and euthanized for hours later, a time of maximal cell cycle arrest. Animals were injected with the S-phase marker 5-ethynyl-2'-deoxyuridine (EdU) 90 minutes prior to euthanasia and small intestine and colon were collected. Mitosis in the intestinal crypts was quantified by immunofluorescence using the G2/M-phase marker phospo-histone 3B (pH3B). Results: Loss of IGF1R significantly and dramatically decreased the number of pH3B positive cells per crypt in the small intestine. However, loss of IGF1R did not affect numbers of pH3B positive cells in the colonic crypts. The small intestine of VC-IGF1RΔ/Δ mice showed a small but significant decrease in the number of EdU positive cells per crypt. Conclusion: Our study provides novel evidence that after radiation-induced DNA damage, IGF1R loss favors cell cycle arrest with predominant effects in the small intestine on pH3B, which marks G2/M phases of the cell cycle. This suggests that IGF1R loss has region-specific effects on cell cycle arrest in the intestine after genetic damage. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project is funded by NIH/NIDDK, R01-DK040247-19 (PI Lund), at UNC. Thanks to RISE program at University of Puerto Rico at Cayey R25 GM059429.

A-211 Patient knowledge related to acetaminophen recognition, dosing, and toxicity

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Background & Objectives: Acetaminophen is one of the most widely used pharmaceutical analgesic and antipyretic agent in the US, leading to more overdoses and deaths due to liver toxicity, than any other drug. The purpose of this study was to determine knowledge about acetaminophen among patients from two community pharmacies in Puerto Rico. Methods: A convenience and anonymous sample of 100 patients (18 years and older) completed a 13-item questionnaire assesing sociodemographic information and knowledge. The results were analyzed using SPSS V.20. Results: The majority of participants (71%) reported pain in the last three months. Seventy five percent (75%) reported use of acetaminophen in the past three months, one to six times per week. Only 2% of patients correctly identified the maximum daily dose of extra-strength acetaminophen. Approximately 71% of participants either had not received or were unsure of having received information on the possible danger of high doses of acetaminophen. The top sources of information were physicians/pharmacists (17%) and the media (11%). A total of 36% of patients indicated the liver would be affected but 40% were not sure of possible side effects. The majority of the patients (67%) recognized Panadol as containing acetaminophen, but fewer than 15% correctly identified Ultracet, Percocet, Fioricet, Dologesic and Comtrex. Conclusion: This study found deficiencies in patient knowledge related to acetaminophen, including only 17% participants reporting ever receiving information. Since pharmacists were among the top sources of this information, they must take an active role in counseling.

A-212 Role of Neuregulin 1β and Epidermal Growth Factor Receptor in Resistance to ErbB therapies

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Background & Objectives: ErbB has proved to be a potent target for anticancer therapies, including inhibition of its kinase activity. Unfortunately, a large percentage of ErbB-positive cancers demonstrate predisposition to resistance to ErbB-targeted therapeutics. Epidermal Growth Factor Receptor (EGFR), which is a member of ErbB family of oncoproteins, is over expressed in breast cancer cells and was found to induce unrestricted proliferation in this malignancy. Neuregulins (NRGs), which are activators of ErbB3 and ErbB4, have been implicated in resistant to anti-ErbB therapies. Our hypothesis is that overexpression of EGFR by the effect of Neuregulin-1β is associated with breast cancer resistance to ErbB therapies. Methods: To study the effect of the ligand on response to TKIs MCF-7, ZR-75-1 and MDA-MB-231 breast cancer cell lines were treated with different concentrations of NRG1β and selected concentrations of tyrosine kinase inhibitors (Erlotinib or Lapatinib) using XTT cell proliferation assay. Results: The effect of NRG-1β in the proliferation of breast cancer cells and resistance to the inhibitors tested depends on cell type and is affected by the doses of both, dose and inhibitor. For instance, MCF-7 response to Lapatinib treatment was affected by the effect of NRG1β which was not observed in MDA-MB-231. Conclusion: Our data suggest that NRG1β plays a role in the response of breast cancer cell lines to TKIs. Current efforts are directed to demonstrate that the effect of NRG1β on TKIs effectiveness is associated with the increase of EGFR at mRNA and protein levels. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research support was provided by a grant from National Institute of Minority Health and Health Disparities (8G12MD007600).

A-213 Response of A. fumigatus-specific T-cells to other Fungi

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Background & Objectives: Aspergillus fumigatus is a mold that works as an opportunistic pathogen, and affects immunocompromised individuals with a wide spectrum of diseases which includes invasive aspergillosis (IA), meningitis, and allergic bronchopulmonary aspergillosis. Previously, a transgenic mouse that possesses only A. fumigatus-specific T-cells (Af 3.16 T-cells) was created in order to assess T-cell response in aspergillosis. It has been shown that these Af3.16 T-cells proliferate in draining lymphoid tissues (spleen and mediastinal lymph nodes) upon Aspergillus infection; we hypothesized that the Af 3.16 T-cells would recognize other fungal pathogens. Methods: Using adoptive-transferred CFSE-labeled Af 3.16 T-cells on a wild-type mice and flow cytometry we have challenged in vivo these Af 3.16 T cells against other fungal species. Results: We found that Af 3.16 T-cells cross-reacts against A. terreus, A. flavus and A. niger. However, Af 3.16 T-cells do not recognize Cryptococcus neoformans, Exserohilum rostratum, Histoplasma capsulatum and Candida albicans. Conclusion: This suggests that there is a common antigen conserved among Aspergillus species, which is not present or similar enough in C. neoformans, E. rostratum, H. capsulatum and C. albicans to be recognized by Af 3.16 T cells. As a future direction, we shall try to identify the antigen recognized by these Af 3.16 T-cells, which is yet unknown, but necessary for a better understanding of the host-fungi interaction in a T-cell-mediated immune response. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The research was supported by the RISE Program Grant #R25 GM059429 and NIH, NCI grants K22 CA160874 and R21 CA167238-01A1 to AR.

A-214 Interleukin-15 Inhibits Prostate Cancer Cell Migration

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Background & Objectives: Prostate cancer (PCa) is the second-leading cause of cancer-related deaths in the United States and it is the most frequently diagnosed. Inflammation has been related to cancer progression. Chemokines such as IL-15 have been found differentially expressed among patients that did not show PCa recurrence. In this study we aim to determine the role of IL-15 in the progression of PCa using in vitro and in vivo models. Methods: PC3 (androgen-independent) and 22RV1 (androgen-dependent) cell lines were treated with IL-15 at concentrations of 0.0013ng/mL and 0.1ng/mL and subjected to migration and invasion assays. Tumor progression was evaluated using a xenograft model in which the anterior prostate lobes of SCID mice were injected with 250,000 22RV1 cells or 500,000 PC3 cells. IL-15 was administered bi-weekly at concentrations of 0.0013ng/mL and 0.1ng/mL with intraperitoneal injections during 4 weeks (22RV1) or 8 weeks (PC3). Tumor tissue was collected for gross examination, immunohistochemical, and gene expression analysis. Results: In vitro results showed that IL-15 decreased invasion and migration of PCa cells at both concentrations. In vivo, IL-15 increased tumor volume when compared with tumors generated in mice treated with vehicle. Tumors developed with IL-15 showed an increased expression of desmin and alpha-smooth muscle actin (α-sma) and a decreased expression of phospho histone 3 (pH3). Gene expression analysis showed that IL-15 decreased MMP-2 and MMP-9. Conclusion: IL-15 inhibits PCa migration and invasion, the decreased expression of MMP-2 and MMP-9 suggests a possible mechanism. Decreased phosphorylation of histone 3 suggests that increased tumor volume is not due to mitosis. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported by: MBRS RISE R25-GM061638, NIH/NCI K01 CA140711 (MMF), and start-up funds from the UPR Comprehensive Cancer Center (MMF). There is no conflict of interest working on this project.

A-215 Identification and Expression Analysis of Two Homologs from Xenopus laevis of the Tumorhead Putative

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Background & Objectives: Tumorhead (TH) is a maternal factor that regulates cell proliferation during early embryogenesis in Xenopus laevis. To understand how TH functions at the molecular level, we have been studying its relationship with the novel F-Box containing protein FBXO30, found in a two-hybrid screen for TH binding proteins. Methods: Using primers based on the sequence we obtained, along with primers based on the 5' and 3' UTRs of the Xenopus tropicalis FBXO3O mRNA, we obtained RT-PCR products with total RNA samples from eggs and embryos at early developmental stages. Results: Using this approach, we uncovered the presence of two FBXO30 homolog genes in X. laevis, FBXO30-A and FBXO30-B, which encode proteins that are 91% identical. The FBXO30-A and FBXO30-B proteins share 64% and 63% identity with their Homo sapiens protein homolog, respectively. FBXO30 proteins contain very conserved Traf-like zinc finger-containing domains at their N-terminus, and F-Box domains at their C-terminus, while the internal part of the proteins diverge extensively. We found through RT-PCR that FBXO30-A and FBXO30-B are maternal factors as their messages are present in the unfertilized egg. Their mRNAs persist during the cleavage stages, decrease dramatically once gastrulation starts, and reappear at the mid-tailbud stages. Using antibodies raised

against a synthetic FBXO30-A peptide, the FBXO30-A protein was detected in the nuclei of cells at the gastrula (st. 12) stage. Conclusion: Our studies show the presence of two homologs of FBXO30 in X. laevis that are maternally expressed, which could be key regulators of early development, working with TH to promote cell proliferation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH-SCORE Program (Grant 5SC2GM092656-02) PR Louis Stokes Alliance for Minority Participation Program, UPR-Humacao Intramural Funds for Research Program, NIH-RISE Program (Grant 5R25GM075348-06), NIH-MARC Program (Grant 2T34GM008156-21), BioMinds Amgen Foundation Program McNair Scholars Program, Students Amneris Castro and Ricardo Torres for technical assistance.

A-216 Non-coding RNAs in EGFR therapy resistance in breast cancer

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Background & Objectives: The purpose of this study is to investigate the dysregulation of non-coding RNAs (ncRNAs) as a novel mechanism of resistance to epidermal growth factor receptor (EGFR) targeted therapies in breast cancer (BC). Methods: Therefore, we used human BC cell lines SKBR3 and BT-474 to create paired therapy sensitive and resistant clones to the currently prescribed anti-EGFR therapeutics, gefitinib and lapatinib. Differentially expressed ncRNAs in resistant and sensitive cells were identified from quantitative RT-PCR analysis and their targets detected by Western blot. Results: MicroRNA miR-221/222 was upregulated in parallel with decreased expression of the recently identified long ncRNA (lncRNA) Colon Cancer Associated Transcript 2 (CCAT2). Increased miR-221/222 and decreased miR-200 family have been associated with cancer malignancy and epithelial to mesenchymal transition (EMT), a hallmark of therapy resistance. Accordingly, miR-200a was downregulated in EGFR therapy resistant BC cells. miR-200 family plays an important role in suppression of EMT by downregulation of the negative regulator of E-cadherin, zinc finger E-box binding homeobox (Zeb)1/2, and transcriptional activator β-catenin. Results show upregulation of Zeb1, β-catenin and its transcriptional effector c-Myc, and stem cell-like marker CD44, while E-cadherin was downregulated in the E-cadherin positive BT-474 cells. We also found downregulation of miR-221/222 targets, PTEN and APAF1, in SKBR3 resistant variants, which is consistent with upregulation of miR-221/222 expression. Conclusion: In conclusion, this data suggest that downregulation of CCAT2 and miR-200 family, and upregulation of miR-221/222 contributes to EGFR targeted therapy resistance. Therefore, targeting these ncRNAs maybe a viable alternative to overcoming therapy resistance in BC. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Support by grants from NIH/NIGMS SC3GM094824 to SD, RCMI Programs 2G12RR003035 to UCC and G12RR03051 to UPR MSC, UCC Postdoctoral Program sponsored by the PR Science, Technology and Research Trust and MBRS Program RISE.

A-217 Anxiety-Related Behaviors in Mice during Methimazole treatment

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Background & Objectives: Anxiety is an abnormal and overwhelming sense of apprehension and fear often marked by physiological signs. These abnormalities have been linked to the malfunction of the thyroid gland and production of its hormones. In the present work we model the human pathological anxiety in rodents treated with Methimazole (MMI) a drug that inhibits the synthesis of thyroid hormones and thus is effective in the treatment of hyperthyroidism. Methods: We used a successful open field exploration experimental paradigm (successful in rodents) that provides a unique opportunity to systematically assess novel environment exploration, general locomotor activity, and provide an initial screen for anxiety-related behavior in rodents. The acquisition of the locomotors activity was automatically synchronized to a digitalization system to be analyzed. Results: The effect of MMI on euthyroid specimens may give insight about neurological disorder observed in the treatment of hyperthyroidism. The anxious-like behavior were evaluated in the FVB mice exposed to methimazole (MMI) acutely (24, 48, 72 hrs.) and chronically (1 month). The results were normalized by the fluctuation in weight of the animals. Our results confirmed that the weight of the animals exposed to MMI decreased significantly ($p \leq 0.001$) during the acute treatment by 11.8% at 48 h of treatment. The Duration in centered perimeter was reduced statistically ($p \leq 0.001$) from 21.47±1.20 (N=11) to 13.69±0.30 (N=10) s/gr in the chronic treatment, however during the acute treatment the dispersion of the results was drastically elevated. Conclusion: Time spent investigating the central region indicated that MMI reduced the anxiety-like behavior during chronic treatment. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by grants NCRR (5G12 RR 003035-27) and NIMHHD-(8G12 MD 007583-27) from the National Institute of Health.

A-218 Altered GSH levels affect P. berghei parasite development

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Background & Objectives: Plasmodium parasites are exposed to oxidative stress during its life cycle. To cope with stress, the parasite utilizes the glutathione (GSH) and thioredoxin

pathways as primary antioxidant defenses. Silencing of key genes in the glutathione pathway, γ-glutamylcysteine synthetase (pbggcs) and glutathione reductase (pbgr), resulted in altered GSH levels and interruption of parasite development in the mosquito. pbggcs- mutants contained significantly lower GSH levels and presented slight growth delay in blood stages as compared to wild type (WT). This study aims to identify mechanisms contributing to the parasite growth delay during erythrocytic stages. The underlying hypothesis is that a reduced antioxidant capacity adversely affects parasite development resulting in growth delay. Methods: The growth rate of pbggcs- parasites was analyzed in in vitro synchronized cultures during blood stages development revealing a slight growth delay as compared to WT. The oxidative stress status was assessed by protein carbonylation, nuclear, and mitochondrial DNA damage. Results: Results showed altered oxidative stress levels in the mutant parasites. These results suggest that oxidative stress plays a role negatively affecting blood stages parasite development. Conclusion: Our studies provide new insights into the contribution and relevance of the glutathione system to parasite development, which could translate into novel interventions. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Research partially supported by NIGMS/MBRS award GM08224, the RCMI award 2G12-RR003051 and 8G12-MD007600, and MBRS-RISE award GM-061838. There is no conflict of interest in this poster.

A-219 Identifying Protein Interactors of a novel protease, Polyserase-1, using Yeast Two-Hybrid Screening

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Background & Objectives: Whole genome sequencing identified compound heterozygous nonsense mutations of TMPRSS9 in a girl with developmental regression starting at 2.5 years of age, leading to intellectual disability and autism. TMPRSS9 encodes for polyserase-1, a transmembrane protein with three serine protease domains. The physiological function of polyserase-1 remains largely unknown. Thus we decided to identify its protein interactors to better understand its function. Methods: The GAL4-based Yeast Two-Hybrid system was used to identify interaction partners of polyserase-1. Prior to the screening of this protease, the system and the quality of the library was tested in a pilot experiment using ATXN1 as a positive control, a protein well studied in the Zoghbi lab. Four reporter assays were performed to reduce the false positive rate of this screening. The prey plasmids isolated from positive clones were sent for sequencing. Results: The sequencing showed that 90% of the cDNA clones had 5'UTR, 3'UTR or intronic sequence. Although 10% were found to contain exonic sequence of a gene, none of them was present in the database of known ATXN1 interactors. This suggested problems with the cDNA library because of an overrepresentation of non-protein-coding sequences. Conclusion: Further studies must be performed using other cDNA libraries for Yeast Two-Hybrid Screening. The protein interactors of polyserase-1 will be analyzed by screening each domain independently. This study will allow a better understanding of its function and help in the development of future experiments that focus on characterizing this enzyme and its relationship to human disease phenotypes. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was possible thanks to the Exceptional Research Opportunity Program (EXROP) of the Howard Hughes Medical Institute (HHMI), Dr. Huda Y. Zoghbi and her laboratory in the Texas Children's Jan and Dan Duncan Neurological Research Institute, and the SMART program of Baylor College of Medicine.

A-220 Mitochondrial DNA Damage and Mitochondrial Function During Acute Oxidative Stress induced by H2O2

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Background & Objectives: Mitochondrial DNA (mtDNA) is particularly susceptible to reactive oxygen species (ROS)-induced damage. Base excision repair (BER) is the main repair mechanism responsible for the removal of mtDNA oxidative damage; however, the relationship between mtDNA damage and mitochondrial function is not fully understood. Methods: We seek to determine the effect of mtDNA damage in mitochondrial function in Saccharomyces cerevisiae strains harboring mutations in BER genes after acute oxidative stress induced by H2O2. Results: We observed that, compared to a Wt strain, mtDNA lesions increased 4.3 fold in an ogg1Δ strain and 4.1 fold in an apn1Δ treated 1 hour with 0.3mM H2O2. However, in a double mutant ogg1Δapn1Δ strain, mtDNA lesions increased 21.2 fold. Similarly, mtDNA mutation rate increased in cells treated with 0.5mM H2O2 in the following manner: Wt strain, 7.7 fold; ogg1Δ strain, 11.9 fold; apn1Δ strain, 19.9 fold, and ogg1Δapn1Δ strain, 30.6 fold. H2O2 treatment (0.3 mM) disrupted mitochondrial function as determined by mitochondrial membrane potential measurements: Wt 15% reduction; ogg1Δ 15% reduction; apn1Δ 10% reduction, and ogg1Δapn1Δ 24% reduction. Finally, an increase in the generation of superoxide was observed in the BER double mutant strain treated with 0.5mM H2O2 (1.8 fold increase compared to 1.5 fold, in the Wt strain and 1.4 fold increase in the ogg1Δ and apn1Δ single mutant strains). Conclusion: We can conclude that a synergistic interaction between the OGG1 and APN1 genes is required for the maintenance of mitochondrial DNA integrity and function after an acute oxidative stress insult. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Sponsored by 5SC3GM08475902, R25GM068138 and G12RR03051.

A-221 Clinical mutation proline-21 as a structure-function probe of SRY

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Background & Objectives: The mammalian Y chromosome encodes the male-determining factor SRY, a transcription factor which initiates male development. SRY contains a high mobility group (HMG) box domain, required for specific DNA binding and bending. The structure of the HMG box domain contains three α-helices, separated by loops, a structurally conserved domain among an entire family of transcriptions factors. Clinical mutations in SRY are associated with sex-reversal, which can be genetically sub-grouped. Characterization of these mutations elucidates the molecular functions governing this developmental pathway. We exploit a proline mutation in an α-helix, clinically identified, as probe of the structure-function relationship in the HMG box. The amino-acid proline typically attenuates helices, hence its designation as an α-helical "breaker". However, this mutation, an Arg (R) to Pro (P), is tolerated. We hypothesize it happens because the mutation is at the beginning of the HMG box, in the 21st position. Furthermore, initial DNA binding studies suggest that this mutation does not detrimentally affect DNA binding. Therefore we sought to further characterize this mutation, focusing on various faucets of HMG box structure and function. Methods: To do this, our primary methods are spectroscopic related and include: intrinsic tryptophan fluorescence, circular dichroism, and fluorescence energy resonance transfer (FRET). Results: Similar to previously characterized inherited mutations, the R21P mutant displays a variety of moderate defects in a broad range of HMG box functions such as: conformation, secondary structure, DNA binding and bending. Conclusion: To be sure of our mutant genetic group "in vivo" tests should be done.

A-222 Pitx2 Directly Regulates Bmp4 Transcription to Restrict Facial Bone Deposition

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Background & Objectives: Pitx2, a paired-related homeobox gene, was shown to be the gene mutated in Axenfeld-Rieger syndrome. The observation that human patients with one mutated copy of Pitx2 had severe craniofacial phenotypes supported the idea that Pitx2 was an important developmental control gene in craniofacial morphogenesis. Methods: We performed a ChIP-Sequencing analysis using mandibles of E13.5 Pitx2Flag mice. This analysis revealed several potential target genes including Bmp4. Embryos that expressed different levels of Pitx2 and Bmp4 were also used in this study. Results: abhypoc/abcnull embryos expressed the lowest Pitx2 levels that were necessary to survive late embryogenesis. These mutants exhibited ectopic bone formation that resulted in the fusion of the maxilla and mandibular bone. This Pitx2 embryo shows a significant decrease of Bmp4 levels. We corroborated the increased the Bmp activity by immunofluorescence of p-Smad activity, a known downstream target of Bmp signaling. This data suggest the following hypothesis: Pitx2 inhibits Bmp4 expression in order to control osteogenesis in the mandible-maxillary region. Next, we genetically induced the over-expression of Bmp4 in the oral ectoderm. In this model, we observed ectopic bone formation that recapitulated the Pitx2 mutant phenotype. Finally, we genetically reduced Bmp4 levels in Pitx2 mutants, resulting in the suppression of ectopic bone formation. Conclusion: These data suggest that Pitx2 represses Bmp4-signaling in craniofacial bone precursors revealing a role for Pitx2 and Bmp4 in the regulation of craniofacial bone size and shape. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by the National Institutes of Health (NIH) [2R01DE/HD12324-14 to J.F.M. and 5T32DE015355 to M.B.C.]

A-223 Hypochlorous acid resistance in the bioluminescent bacterium Vibrio fischeri

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Background & Objectives: Vibrio fischeri is a Gram-negative bioluminescent marine bacterium that forms a specific symbiosis with the Hawaiian squid Euprymna scolopes. The host has a light-organ internal structure colonized by the V. fischeri symbiont. The squid host produces reactive oxygen species (ROS), such as hypochlorous acid (HOCl) in response to V. fischeri colonization. Defense mechanisms to HOCl in V. fischeri are unknown. The objective of this work is to identify and characterize V. fischeri genes involved in HOCl stress response. Methods: The minimum inhibitory concentration (MIC) of HOCl for the wild-type and mutants strains of V. fischeri was determined. Results: We found that the MIC for the wild-type strain and a dark mutant strain is 0.12M HOCl, suggesting that the bioluminescence is not involved in resistance to HOCl. Several mutants in the oxidative stress response of V. fischeri showed an MIC of 0.06M HOCl, including a catalase (kat) mutant, a methionine sulfoxide reductase (msrABC) mutant and an msrABC kat mutant. Moreover, the msrABC kat mutant strain is hypersensitive to hydrogen peroxide and superoxide, and affected in competitive host colonization. Conclusion: Our results suggest that V. fischeri possesses genes that confer resistance to HOCl, some of which are important in symbiotic fitness, and is exposed to inhibitory concentrations of ROS during symbiotic interaction. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): FIPI 8 80 805 and NSF 0905813 awarded to ZFC.

A-224 Human Papillomavirus infection in colorectal cancers in relation to CpG island methylator phenotype

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Background & Objectives: To test the possible correlation between epigenetic modulations in colorectal cancer (CRC) and HPV infection, we conducted a MSP- PCR methylation analysis. The aim of this study was to examine the presence of DNA sequences of human papillomavirus (HPV) in CRC and correlate this data with their CIMP status. Methods: Thirty-seven colorectal adenocarcinomas were screened for HPV infection using nested-PCR (PGMY09/11-GP5+/6+). Eight CpG island methylator phenotype (CIMP) genes specific to sporadic colorectal cancer (MLH1, CACNA1G, NEUROG1, IGF2, SOCS1, RUNX3, CDKN2A and CRABP1) were assessed by methylation-specific PCR. Results: Thirty-seven CRC cases (mean age at diagnosis 63.2 ± 11.7 years; 17 males) were evaluated. Tumors were mostly located in the left colon (73.0%), and moderate differentiated (61.1%). HPV's DNA was identified in 23 of 37 (62.2%) CRC studied cases. CRABP1 (59.5%), CDKN2A (37.8%), MLH1 (13.5%), and NEUROG1 (10.8%) were the most commonly methylated genes with a discrete clinic-pathological phenotype and gene methylation pattern. No statistical associations between HPV status and methylation patterns were found, after correlation with tumor staging, cell differentiation, tumor location, and life style. Conclusion: We reported that the CIMP-hypermethylation may be less frequent among Puerto Ricans Hispanics than previously reported in other racial and/or ethnic groups. However, a correlation could not be established ($p>0.5$) between HPV infection and the aberrant methylation pattern in the genes panel. We observed the trend that HPV is more prevalent in CRC without aberrant methylation patterns. This might suggest that hypermethylation could be a protective factor for HPV infection. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): 8U54MD007587-03 (RCMI Clinical and Translational Research award, and 1R21CA167220-01

A-225 Diet Factors and Weight Gain in Pregnant Women participating in the Research Project "PROTECT"

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Background & Objectives: Pregestational body mass index (BMI) and gestational weight gain (GWG) represent the most important anthropometric indicators used during pregnancy, which reflects maternal nutritional status. Diet quality is also a strong determinant of maternal health; intake of energy dense food is associated with increased GWG while consumption of fruit and vegetables is inversely associated. Objectives: Describe dietary patterns of pregnant woman participating in the research project "Puerto Rico Testsite for Exploring Contamination Threats (PROTECT)" and explore its association with GWG. Methods: This is a secondary analysis of data collected in PROTECT, which is a prospective longitudinal cohort study of pregnant women to explore the risk factors for preterm birth. Data is collected from interviews during their gestational period. A self-reported food frequency questionnaire was completed in 20-28 weeks and data was analyzed using SPSS. Results: Preliminary results in 170 women show that pregestational mean BMI was 26% (overweight) and the average GWG between the first and third trimester visits was 4.5 kg. More than 50% of the study subjects were classified as overweight or obese. Only 1.2% and 5.8% consumed vegetables and fruits 2 or more per day, respectively. In addition, only 14% consumed dairy products once per day; 24% consumed refined carbohydrates 3-4 times a week. Bivariate correlations between food group intake and GWG resulted in a significant correlation between higher coffee consumption and less GWG. Conclusion: Only coffee consumption was related to GWG. Further analyses are needed to ascertain these preliminary results. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project is supported by award number P42ES017198-01A1 Superfund Research Program for the National Institute of Environmental Health Sciences (NIEHS) and grant number G12RR03051 (RCMI Program, UPR Medical Sciences).

A-226 Expression of genes related to WNT signaling in colorectal cancer Infected with Human Papillomavirus

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Background & Objectives: The alterations in the Wnt signaling pathways, including mutations in the APC and β-catenin genes, and genetic instability play important roles in colorectal carcinogenesis. Several studies support a possible role of Human Papillomavirus (HPV) in colorectal carcinogenesis. The aim of this study was to identify the expression profiles of Wnt signaling components in HPV-positive and HPV-negative CRC cases. Methods: We conducted an age-matched case study in four

HPV-positive and four HPV-negative CRC cases. We employed the Human WNT Signaling Pathway RT^2 Array (Qiagen) to assay the expression of 84 genes related to WNT-mediated signal transduction. Results: Four HPV-positive CRC cases (mean ages 56 ± 2 years) and four HPV-negative CRC cases (mean ages 57 ± 2 years), were analyzed using the RT^2 Profiler™ PCR Array (Qiagen). We detected a decrease in the expression levels of three WNT-canonical signaling molecules in HPV-positive CRC cases compared to HPV-negative cases. The BCL9, LRP5 and WNT3 showed a 39% ($p = 0.049$), 43% ($p = 0.020$) and 60% ($p=0.038$) decrease in expression in HPV-positive cases, respectively. Reduced expression of three WNT negative regulator genes was also observed: CTMP1 decreased 49% ($p= 0.006$), CXXC4 decreased 49% ($p=0.029$) and FBXW11 expression decreased 41% ($p = 0.041$). Conclusion: Our findings suggest that CRC infected with HPV could define a non-described subtype of CRC based in the expression of a focused panel of genes related to WNT-mediated signal transduction. These results suggest an alteration of the WNT canonical pathway as a consequence of HPV infection in CRC. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): 8U54MD007587-03 (RCMI Clinical and Translational Research award, and 1R21CA167220-01

A-227 Diet Factors and Pregnancy Complications in a Sample of Pregnant Women in "PROTECT" Research Project

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Background & Objectives: Pregnant women should have a good nutritional status before and during pregnancy to optimize their health and prevent pregnancy-related complications. Consumption of certain foods (fruits, vegetables, and fish) could reduce the risk of pregnancy-related complications while consumption of other foods (refined cereals and red meat) may increase such risk. The aim of this study is to describe the dietary patterns of pregnant women participating in the Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) research project and explore its association with pregnancy complications. Methods: This is a secondary analysis of data collected from a prospective longitudinal cohort exploring the risk factors for preterm birth. Data was collected from interviews during their pregnancy. A self-reported food frequency questionnaire (FFQ) was completed around 20-28 weeks. The data was analyzed using SPSS. Results: Preliminary results in 170 women (41%) that have completed the FFQ so far shows that 33% consumed rice 3 to 4 times weekly, 31% consumed red meat and 32% consumed fish only 2 to 3 times monthly. However, 21% and 25% of the participants reported a consumption of fruits and vegetables only 2 to 3 times monthly, respectively. A significant association was found between lower consumption of vegetables, fish and milk with having anemia ($p<0.05$). No apparent associations were found with preeclampsia or gestational diabetes in these preliminary results. Conclusion: Low consumption of fruits, vegetables and fish are associated with the development of anemia in this group of women. More analyses are needed to confirm these results. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project is supported by award number P42ES017198-01A1 Superfund Research Program for the National Institute of Environmental Health Sciences (NIEHS) and grant number G12RR03051 (RCMI Program, UPR Medical Sciences).

A-228 Expression of cathepsin B interactome in post-mortem brain from HIV-associated dementia patients

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Background & Objectives: Human Immunodeficiency Virus (HIV) targets CD4+T lymphocytes and cells of monocytic lineage such as monocytes, macrophages and microglia. Early in the infection, the blood brain barrier is compromised permitting entry of HIV-infected macrophages into central nervous system, triggering the development of HIV-associated neurocognitive disorders. Previously we have demonstrated, that blood monocyte-derived macrophages infected with HIV in vitro secrete the lysosomal protease cathepsin B that contributes to neuronal death. We sought to determine the protein-protein interactions of cathepsin B in the extracellular space and its association to HIV-associated neurocognitive disorders. Methods: To determine the mechanism of cathepsin B induced neuronal death, we determined the macrophage-derived cathepsin B extracellular interactome by proteomics and validated the results by immunofluorescence of post-mortem brain tissue samples provided by the National NeuroAIDS Tissue Consortium (NNTC). Results: We observed that cathepsin B interaction with matrix metalloprotease 9 (MMP9) is decreased in the supernatants of HIV-infected macrophages, while the interaction with serum amyloid component (SAPC) is increased. SAPC was over-experessed in HIVE/Dementia deep frontal white matter. MMP9 was expressed in both uninfected and HIVE/Dementia tissues, but the immunofluorescence was higher in uninfected tissue. Macrophage/microglia Iba-1 positive cells were increased in HIVE tissues over uninfected controls. Serum amyloid p component was increased in a tissue sample from an Alzheimer's disease patient compared to healthy tissues. Conclusion: The decreased interaction of cathepsin B with MMP9 may facilitate brain tissue damage, while increased interaction with SAPC may promote amyloid deposition and early Alzheimer's disease in patients with HIVE. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Sponsored by grants from the National Institutes of Health R01MH083516 (L.M.M.), U54NS043011, R25GM061838 (Y.C.).SNRP-NINDS-1-U54NS431, INBRE P20RR016470-12 and NIMHHD 8G12-MD007600 Transla-

tional Proteomics Center. Laboratory space provided by Grants U54 from the Comprehensive Cancer Center. Additional funding was provided by UPR Vice President (M.P.) and the Associate Deanship of Biomedical Sciences institutional funds at the UPR Medical Sciences Campus.

A-229 Compaction of Lipid Nanoparticles into Tablets: Impact on Physicochemical Properties

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Background & Objectives: The compression of nanoparticles into tablets is a parameter that has not been fully explored. The objectives of this research are to better understand the deformation and consolidation mechanism during compaction of the nanoparticles into tablets, investigate the effect of compressional force on phase transformation of both drug and lipid and to investigate the stability of the tablets during storage. Methods: Formulations composed of nanoparticles containing the equivalent of 100 mg ketoprofen, Ac-Di-Sol (2%, 4 and 6 %), and Avicel PH-102 up to 100% are compacted into tablets. Carver press machine is used and the tablets are compacted under different compressional forces. The tablets are tested for physicochemical properties and dissolution. Differential Scanning Calorimetry (DSC), SSNMR, Raman and X-ray Diffraction are used to determine if there is interaction between the drug and the the lipid and to detect any phase transformation. Results: Data obtained demonstrate that nanoparticles compacted into tablets had good physicochemical properties. The percent of drug released from the tablets was 61.48% at 6 hours of testing dissolution in phosphate buffer (pH=6.80) at 50rpm, 37°C. DSC, SSNMR, Raman and X-ray Diffraction results have shown that there is an interaction and changes in crystalline forms of the components but this interaction did not affect the release of the drug. Conclusion: Nanoparticles are successfully compacted into tablets and showed good physicochemical properties. The dissolution of the tablets has showed a controlled release profile. Also, the interaction between the components has not affected the release of the drug. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Authors acknowledge Dane O. Kildsig Center for Pharmaceutical Research (CPPR) for funding the project.

A-230 Autism and Mealtime behaviors: parent's perception of how this may improve their child's health

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Background & Objectives: Autism is characterized by heterogeneous impairments in communication, social interaction and repetitive or stereotypical behaviors. Children with this condition present atypical mealtime behaviors such as food selectivity. The aim of this study is to describe and identify this type of behavior in children diagnosed with Autism and their parent's perception regarding the improvement this may have on the overall children's health that participating in the Center of Autism (UPR-RCM). Methods: Mealtime behavior was classified as food refusal, limited variety of food repertoire and features of autism during using adapted BAMBI and BPFAS questionnaires. Nutritional Adequacy was analyzed with a 5 Day Food Record and the Dietary References Intake. Results: Preliminaries results show that most of the parents belong to a low-socio-economic stratum. Diagnosed children were more likely to be males and all participants presented either obesity or overweight. Children in the study also report mealtime behaviors as per tests administrated, thus nutritional adequacy of diets are questionable. Conclusion: Preliminary results of this study demonstrated that all children present weight problems that increase odds of future health complications. Further research is needed to obtain other associations among physical status, mealtime behavior and nutritional adequacy.

A-231 CRISPR/Cas9-mediated Gene Targeting in Mammalian Fibroblasts

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Background & Objectives: The CRISPR (clustered regularly interspaced short palindromic repeats)/Cas systems are adaptive immune systems which are found in bacteria and archea. These systems provide acquired immunity against bacteriophages by targeting nucleic acid in a sequence specific manner. Cas9 encodes an RNA-guided nuclease and together with an engineered RNA, with 20 bases that match a target gene, will result in small deletions. Genome editing by CRISPR has been shown effective in many model organisms such as mouse, but little has been done in other mammalian species. Our purpose is to open up new genome editing mutagenesis methods in species that are not currently amenable to targeted gene manipulation. We hypothesize that the CRISPR/Cas9 system can induce a targeted mutation in a specific locus in fibroblasts derived from various mammalian species. Methods: Here, we co-expressed Cas9 and a chimeric guide RNA to target the HPRT locus in cultured mammalian cells from diverse species. Oligonucleotides were designed based on the target site sequence and inserted into the CRISPR/Cas9 plasmid. Results: We generated multiple CRISPR/Cas9 plasmids for the Hprt locus of 4 diverse mammalian species. These plasmids included 6 potential CRISPR sites in 5' exons. Each plasmid was verified by DNA sequencing. The plasmids were introduced into mammalian cells and HPRT-deficient cells were selected in medium using 6-thioguanine. Conclusion: Our studies will determine the feasibility of genome editing in diverse mammalian species. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the National Cancer Institute through the U54 CA096297/CA096300, UPR/MDACC Partnership for Excellence in Cancer Research Training Program.

A-232 Contributing factors for adherence and non-adherence to treatment in a Puerto Rican IBD population

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Background & Objectives: Adherence to medications in patients with Inflammatory Bowel Disease (IBD) has been well studied in different countries. Several investigators have been interested in determining the risk and predictive factors associated to medication adherence in these patients. However, such study has not been conducted in the Puerto Rican population. These international studies have shown an occurrence of medication non-adherence, defined as intentional and unintentional, ranging from 32-69% of the individuals studied. Several studies in the Puerto Rican population had been conducted regarding the incidence and prevalence of Chron's Disease (CD) and Ulcerative Colitis (UC) showing that since the last decade the incidence has increased. Recently, a randomized controlled trial was performed in this population to determine the contribution of pharmacy students' interventions on medication adherence in IBD patients from the University of Puerto Rico (UPR) Center for IBD. It revealed that the pharmacy students' interventions contributed to promote medication adherence in patients from this center although the results were not statistically significant. Also, they were able to determine preliminary factors for non-adherence to pharmacological treatment, being problems with medical insurance and availability of the medications in the pharmacy, and adverse effects to medications the most common. The aim of this study is to determine contributing factors for adherence and non-adherence to treatment in a Puerto Rican IBD population. A secondary aim is to develop gain-framed messages for Puerto Rican patients with IBD based on the factors identified. Gain-framed messages are "efforts to get patients to take actions that would forestall the onset of a health problem and generally maintain a patient's current status, so patients view these types of interventions as less risky." Methods: The study proposed is a cohort investigation that consists of three parts: recruitment of IBD patients, evaluation of adherence and administration of questionnaires to selected patients, and data analysis. Selected patients who meet the inclusion criteria will receive and informative sheet and will be evaluated by the Morisky Medication Adherence Scale 8 (MMAS-8) to discriminate adherent patients from non-adherent patients. Subsequently, they will complete another questionnaire to determine contributing factors for compliance and non-compliance with the medication regimen. Gain-framed messages will be created to promote disease prevention behaviors and medication adherence, and will be based on the contributing factors identified. All data analysis will be anonymous and performed considering all the variables. A Pearsons chi-square and Mann-Whitney test will be performed for the categorical and ordinal variables, respectively. A p-value equal or less than 0.05 will be considered statistically significant. Results: Since June 2013, twenty six patients have been recruited to participate in our study. Of these, 15 were classified as adherent (MMAS-8 score ≥ 6) and 11 as non-adherent (MMAS-8 score < 6). The majority of participants were male (n=16, 61.5%) with a mean age between 25-34 years, 50% (n=13) resided in a non-metropolitan area, and 73% (n=19) had a college degree. Most of the patients had a diagnosis of IBD for more than 7 years (n=13, 50%) and 100% (n=26) had regimens consisting of 1 to 2 medications for IBD. The most common factor for non-adherence in both groups were patients related factors (43.5%, n=50), such as: patient forgets to take medicine, does not want dependence on medicines, does not want to follow orders and/or does not like to take medicines. Other common factors for non-adherence in order of occurrence were: therapy-related factors (24.3%, n=28), economical factors (19.1%, n=22), and health system factors (13.0%, n=15). The most common factor associated with adherence in the adherent group is oral route of administration followed by being covered by a private health insurance. These results show preliminary and descriptive data that is still being gathered and analyzed. Conclusion: Preliminary results had shown that a major contributing factors for non-adherence is patient related factors, such as the patient forgets to take the medication, the patient does not want to become dependent on medication, the patient does not want to follow orders and/or does not like to take medicines. Other factors were younger age, highest scholarly level of education, recent diagnosis, complex therapy (more frequent administration and non oral administration), annual incomes of $15,000 or over (busy working life) and poor medical insurance coverage. On the other hand, contributing factors for adherence are private health insurance, 7 years or more with the condition, less frequent administration and oral route of administration. Gain framed messages related to treatment economical/social issues can be geared toward those patients identified in the clinic as adherent while non adherent patients could be exposed to those developed for therapy related factors. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

A-233 Real Time Imaging of Dkk3b Tumor Suppressor Action in Human Prostate Cancer Cells

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Background & Objectives: The Wnt pathway plays an essential role for cell growth, and its anomalous activation is a key player in oncogenesis. Expression of Dickkopf-3b (DKK3b) is frequently lost in human cancer cells suggesting that it is a tumor suppressor. In the Wnt/b-catenin signaling cascade, DKK3b in partnership with β-TrCP binds unphosphorylated β-catenin in the cytoplasm and prevents its nuclear import. This effectively silences proliferation initiated by the transcription coactivator β-catenin. Methods: To determine the tumor suppres-

sor function of dkk3b, growth of prostate cancer cell lines harboring a tet-inducible DKK3b (PC3p29) or infected with replication-deficient adenovirus carrying the DKK3b (DU145 and LnCap) was monitored by time lapse photomicroscopy. DKK3b expression was induced by addition of doxycycline (Doxy); an adenovirus vector was used to deliver the DKK3b cDNA in LnCap and DU145 cells. Immunocytochemical analysis confirmed the Doxycycline-dependent expression of DKK3b. The cells were imaged by DIC at 10x and 20x magnification over a 72-hour period after DKK3b treatment. Image sets were used to examine the effect of DKK3b on cell proliferation. PC3p29 cells over-expressing. Results: DKK3b showed arrested division and cell death within 48 hours Time-lapse microscopy revealed that PC3 cells expressing DKK3b failed to divide, showed interrupted cytokinesis, unstable growth and cell death. Conclusion: These data suggest that DKK3b acts to block cell proliferation by arresting mitosis and ultimately leads to cell death. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors declare that there is no conflict of interest. This work is supported by NIH grant NIH-5RO1AA018814.

A-234 Genetic Background of Klebsiella pneumoniae Carbapenemase (KPC)-Producing Acinetobacter baumannii

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Background & Objectives: Carbapenems are the last resort antibiotics to treat infections caused by multidrug resistant gram-negative bacilli. The KPC enzymes hydrolyze all known beta-lactam antibiotics including the carbapenems, and have been detected in Enterobacteriacea and Pseudomonas aeruginosa isolates worldwide. They are associated to transposon Tn4401 commonly located in plasmids. KPC-producing Acinetobacter baumannii (Ab) have been reported only in Puerto Rico. During a six month island-wide beta-lactam resistance surveillance study, four KPC-producing Ab with identical pulsetype were identified from patients hospitalized in a single institution. The objectives of this study were to characterize the KPC genetic background and the allelic diversity of one of the isolates. Methods: PCR screening for the detection of bets-lactamases and transposon Tn4401, DNA sequencing, Southern Blot, Multilocus Sequence Typing (MLST) and conjugation experiments were performed. Results: Molecular characterization of the isolate demonstrated the presence of the KPC gene in the Tn4401 isoform b. MLST shows the novel sequence type, ST250. Experiments to identify the genomic or plasmid location of Tn4401 gave inconclusive results. Conclusion: This is the first report of a novel MLST Ab carrying the KPC gene in Tn4401. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by MBRS/RISE R25GM061838, RCMI/NIH 2G12-RR003051 and 8G12-MD007600, Associate Deanship for Biomedical Sciences Graduate Program School of Medicine, MSC-UPR, Ortho-McNeil Janssen, Merck, Inc., Pfizer Caribbean and PR Dept. of Health.

A-235 What are the characteristics of the kidney organ donor in Puerto Rico?

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Background & Objectives: Describe kidney donor characteristics in Puerto Rico and examine their relation to successful kidney transplantation. Methods: Retrospective cohort of kidney donors from 2008-2011 examined for age, gender, comorbidities (diabetes mellitus, cardiovascular disease and hypertension), creatinine and successful kidney transplantation. Comparisons of proportions between groups were based on Fisher Exact/Pearson Chi-square test. T test and ANOVA were used to compare means. Results: Average age was 57.71 for males and 42.29 for females. Average age of donors with kidneys discarded was 54.51+ 16.3, and with at least one kidney transplanted was 38.86+ 17.7 (p=0.00). 19.9% of females had no kidney transplanted, versus 6.29% of males ($P < 0.001$). Average initial, peak and final creatinine(mg) for non-transplants were 0.87 +0.25, 1.22 + 0.41 and 0.99 respectively; 0.98+ 0.36, 1.44+ 0.61 and 1.17 for one kidney; and 0.82 + 0.33, 1.14 + 0.47, and 0.85 for two kidneys. Diabetes was present in 11.11%, 3.58% had cardiovascular disease, and 37.28% had hypertension. In diabetics, 25.81% had no kidney transplanted, 9.68% had only one, and 64.52% had both kidneys transplanted ($p = 0.045$). Of donors with hypertension, 22.55% did not have any kidney transplanted, 12.75 only one, and 64.71 had both ($p = 0.0001$). In regression analysis, gender and age were highly significantly associated with kidneys transplanted. Conclusion: Male gender is significantly associated with a kidney being transplanted. Male kidney donors are younger that female kidney donors and there are more male donors. A regression analysis found them both to be statistically significant modifiers. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by Grants 5S21MD000242 and 5S21MD000138, National Center for Minority Health and Health Disparities, National Institutes of Health. Endowed Health Services Research Center, School of Medicine.

A-236 Ligand specific dwell times and its manipulation for β2-adrenergic receptors in HEK293 cells

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Background & Objectives: β2-Adrenergic Receptors (β2-AR) are members of the G protein-coupled receptors (GPCRs) superfamily. They are membrane proteins involved in signal transduction distributed throughout the body. It is known that ligand binding initiates endocytosis of GPCRs; however, the time the receptor spends in the cell surface and its manipulation related to signaling remains unknown. We assed the hypothesis that pharmacological manipulation of internalization can differentially control signaling of β2-AR by G protein or

β-arrestin cascades. Methods: We used total internal reflection fluorescence microscopy (TIRF-m) to record human embryonic kidney cells (HEK293 cells) overexpressing β2-AR. Individual endocytic pits dwell times were analyzed in the presence of isoprotenerol (Iso), norepinephrine (NE) and epinephrine (Epi). Western blots were done to measure P-Erk activation with Iso 10μM versus a group of Dyngo 30 μM + Iso 10μM for different time frames. Results: Live-imaging results showed significantly different dwell times, with an average of 102.24s for Iso and 228.3s for NE at a 10μM concentration. No significant difference between Iso 10μM and Epi 10μM. Preliminary data showed differences in P-Erk activation comparing Dyngo + Iso with the control, Iso group. Conclusion: These results suggest that dwell times of β2-AR in HEK293 cells are ligand specific. Most importantly, it suggests that through dwell time manipulation of β2-AR signaling can be controlled. However, further analysis must be done to verify phosphorylation of other MAPKs via β-arrestins in HEK293 cells using gene-silencing techniques, to test if this prolonged signaling is via G protein or β-arrestins. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Puerto Rico Science Trust

A-237 Characterization of ahpC in Vibrio fischeri

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Background & Objectives: A unique symbiosis is observed between the bioluminescent bacterium Vibrio fischeri and the Hawaiian Bobtail squid, Euprymna scolopes. The host has a specialized internal light-organ that is exclusively colonized by V. fischeri. Previous studies showed that the squid generates reactive oxygen species, including hydrogen peroxide, in symbiotic tissues. Oxidative stress response proteins have been identified in proteomic studies of symbiotic V. fischeri cells. Among the identified proteins are well-studied hydrogen peroxide scavengers catalase (KatA) and alkyl hydroperoxide reductase (AhpC). In V. fischeri, katA is necessary for hydrogen peroxide survival and competitive symbiotic fitness. AhpC is the fifth most abundant protein and the most abundant oxidative stress response protein in symbiotic V. fischeri, however it has not been characterized in this bacterium. We hypothesize that AhpC is an important hydrogen peroxide scavenger in V. fischeri. Methods: To characterize the function of ahpC in V. fischeri we generated an ahpC mutant, and a katA/ahpC double mutant. The strains were grown in broth medium, and OD and luminescence were documented. Results: Both mutants grew as well as the wild-type parental strain in broth culture. However, the katA/ahpC double mutant was 2.6x brighter in culture than the wild-type parent or the katA and ahpC mutants. During symbiosis the katA mutant is 4x brighter than wild type. Conclusion: These results suggest that oxidative stress induces bioluminescence, which may protect the cell from oxidative damage in the absence of scavenging enzymes. Future research will focus in identifying the role of ahpC in symbiosis, hydrogen peroxide survival, and bioluminescence regulation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Bridge to the Graduate Studies Fellowship, Vice Presidency of Research and Technology of the University of Puerto Rico awarded to MFDO, FIPI 8 80 805 awarded to ZFC.

A-238 Design and Synthesis of 2-Amino-Nicotinamide Derivatives and their Use as Anti-cancer Compounds

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Background & Objectives: Several 2-amino-nicotinamide derivatives have been reported with potential utility for the treatment of hypercholesterolemia, inflammatory and cancer diseases. The Rac GTPase inhibitor EHop-016 is a flexible molecule that adopts a "U-shaped conformation" when docked into the Rac binding site and, when tested in vitro in MDA-MB-435 cells, the cell viability was decreased to 50% at 10 μM. We hypothesized that compounds with a more rigid structural conformation mimicking this "U-shape" conformation would improve the antiproliferative activity. Our objective is to synthesize and test in vitro the antiproliferative activity of 2-amino-nicotinamide derivatives in MCF-7 breast cancer and SH-SY5Y neuroblastoma cells. Methods: All of compounds were synthesized by reacting 3-amino-9-ethylcarbazole (or primary and secondary amines) with 2-chloronicotinic acid through nucleophilic aromatic substitution and the carboxylic acid intermediate was coupled with primary or secondary aliphatic amines (or with 3-amino-9-ethylcarbazole. All compounds were tested for their growth inhibitory activity against SH-SY5Y neuroblastoma and MCF-7 breast cancer cells via a Sulphorhodamine B -based protocol assay. For each compound, GI50 was calculated from sigmoidal dose-response curves that were generated from experiments carried out in triplicates. Results: Among the ten compounds synthesized and examined, six compounds showed GI50 in the range of 16.8-44.1 μM on the MCF-7 breast cancer cells. As for SH-SY5Y cells, one compound showed GI50 of 32.4 μM. Conclusion: From the ten compounds at least seven were active against the growth of breast cancer and neuroblastoma cells. The results showed that new leads from 2-amino-nicotinamides can be potentially developed as anti-cancer agents. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was supported by NIA AACP Grant and RCMI Grant # 8G12MD007600 /G12 RR 03051. Authors of this presentation have nothing to disclose.

A-239 Plasma membrane sensors of PKC1 pathway share novel interacting protein partners

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Background & Objectives: The PKC1 cell wall integrity pathway (CWIP) is essential for survival and maintenance of cell wall integrity in yeast cells. Upon exposure to cell wall stress, signaling proteins (sensors) in the plasma membrane activate this pathway by interacting with other signaling proteins (interactors). The objective of this study is to know if interactors previously identified by the iMYTH technique are shared between these sensors. Our hypothesis is that any interactors shared between two or more sensors represent a potential antifungal drug target. Methods: To test this hypothesis, a bait dependency test was performed. This test consists of testing the prey plasmids (encoding interactors) in bait strains (expressing tagged Wsc1, Mid2 and Wsc2 sensors) under normal and thermal stress (at 37˚C) conditions. The prey plasmids used were confirmed as positive interactors for at least one of these sensors. Shared interactions were compared to positive and negative control plasmids and an artificial bait strain. Results: 15 out of 23 prey plasmids tested shared interactions with stress sensors Wsc1, Mid2 and Wsc2. A novel common interaction by the protein Pst2 with Wsc1p and Mid2p was discovered. The molecular chaperones Ssb1 and Ssb2, which interacted with sensor Wsc2 at 30˚C, and Rps31 and Zeo1 that interacted with Mid2 at 30˚C, lost their interaction under thermal stress. Conclusion: A majority of the proteins shared interactions with all the stress sensors under normal and thermal stress conditions. Work is underway to test if these interactions are relevant for survival from cell wall stress. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by the UPR School of Medicine, NIGMS/NIAID (05-SC1AI081658-04), NCRR-RCMI (G12RR03051), MBRS-RISE (R25GM061838) & University of Toronto.

A-240 Design and Synthesis of New Carbazole Derivatives as Anti-cancer Compounds

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Background & Objectives: The cytotoxic activity of many carbazole derivatives has been related to their polycyclic, planar and aromatic structure. For many carbazoles, cytotoxicity can be related to topoisomerase I/II, telomerase, cyclin-dependent kinases and estrogen receptors. We hypothesized that carbazole derivative cytotoxicity can be also related to inhibition of Rac activity. Our objective was to design and synthesize new 3-substituted carbazole derivatives and study their antiproliferative activity against MCF-7 breast cancer and SH-SY5Y neuroblastoma cell lines. Methods: A first series of compounds was synthesized reacting 3-azido-9-ethylcarbazole and 3-butynyl-amines via 1,3-dipolar cycloaddition (click chemistry) to produce 3-triazolyl-carbazole derivatives, and a second series of compounds was synthesized by coupling primary amines with 9-ethyl-carbazole-3-carboxylic acid to produce carbazole-3-carboxamide derivatives. All compounds were tested for their growth inhibitory activity against neuroblastoma SYSH-5Y cancer cells and MCF-7 breast cancer cells via a Sulphorhodamine B -based protocol assay. For each compound, 50% growth inhibition (GI50) was calculated from sigmoidal dose-response curves that were generated with data obtained from experiments carried out in triplicates. Results: Among the fifteen compounds synthesized and examined, four compounds showed GI50 in the range of 13.9-36 μM on the MCF-7 breast cancer cells. As for SH-SY5Y neuroblastoma cells, one compound showed GI50 of 38.9 μM. Conclusion: From the fifteen compounds synthesized at least five compounds were active against the growth of breast cancer and neuroblastoma cells. The results showed that new leads of carbazole derivatives can be potentially developed as anti-cancer agents. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was supported by NIA AACP Grant and RCMI Grant # 8G12MD007600 /G12 RR 03051. Authors of this presentation have nothing to disclose.

A-241 Inhibition of the AT1 Receptor by Losartan and Levels of Carbonylated Proteins in Rhesus Monkeys

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Background & Objectives: While the mechanisms of aging remain controversial, a leading hypothesis is that increased oxidative damage to macromolecules impairs normal physiological functions and compromises tissue function in aging. During oxidative stress increased levels of reactive oxygen species can lead to the addition of carbonyl groups to proteins causing the formation of carbonylated proteins. Carbonylations lead to protein loss of function and are implicated in the pathogenesis of aging. Both pharmacological and genetic inhibition of the renin-angiotensin system (RAS) decreases oxidative stress and extends lifespan in rodents. However, whether RAS inhibition results in decreased levels of protein carbonylations is unknown. We have previously shown that liver from middle age rhesus monkeys (Macaca mulatta) exhibit significantly higher levels of carbonylated proteins compared to young animals. We hypothesize that RAS inhibition precludes oxidative stress in liver of middle age rhesus by reducing the levels of carbonylated proteins. Methods: To test our hypothesis, we isolated liver proteins from untreated and monkeys treated for 3 months with losartan, an angiotensin II receptor 1 (AT1) blocker and measured levels of protein carbonylations using the OxyBlot analysis. Results: Our preliminary results with 3 monkeys per treatment group show that Losartan exerts a robust tendency to decrease the levels of carbonylations compared to untreated controls. Conclusion: Our preliminary results raise the possibility that RAS inhibition may represent a therapeutic strategy to reduce oxidative stress during aging. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Support from NIH P40RR003640, G12RR003051 and 8G12-MD007600 grants.

A-242 Allergic Reactivity of Human Sera against Cytoplasmic Extracts of Ganoderma applanatum

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Background & Objectives: Puerto Rico has a high prevalence of asthma and other allergic conditions. Fungal spores are the main outdoor aeroallergen in Puerto Rico, with basidiospores representing almost 70%. However, there are still no commercial diagnostic methods for detection of basidiomycete sensitization. We confirmed skin test sensitization of Puerto Rican atopic patients to crude basidiospore's extracts of Ganoderma applanatum, a common basidiomycete found in Puerto Rico. In this work, our objective was to study the allergenicity of G.applanatum basidiospore extracts against human sera. Methods: Indirect ELISA test was used to detect serological reactivity of atopic and non-atopic patients against crude cytoplasmic extract of G. applanatum spores. The study population includes 133 sera from individuals with both allergic and non-allergic profiles. These profiles consist of 10 sera from individuals with specific IgE (sIgE) against fungal allergens (Group 1), 53 sera from individuals with sIgE against other allergens but not fungi (Group 2), and 50 sera from individuals with no sIgE to the allergens tested (Group 3). A negative control group was composed of 20 sera from individuals with no history in allergic disease. Results: Results show serological reactivity to cytoplasmic components of G. applanatum spores, with 80% of Group 1, 43% of Group 2, and 42% of Group 3 having a positive ELISA. Conclusion: Therefore, we can conclude that cytoplasmic extracts of G. applanatum spores have allergenic components recognizable by Puerto Ricans. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by RCMI/NIH 2G12-RR003051 and 8G12-MD007600 and the Associate Deanship for Biomedical Sciences Graduate Program School of Medicine, MSC-UPR.

A-243 Detection of Acaricide Activity of Essential Oils and Polar Plant Extracts against Rhizoglyphus sp

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Background & Objectives: Mites are very small arthropods (often microscopic) and are among the most diverse invertebrates. Even though they can be found in a wide variety of habitats (soil, freshwater, animals and plants), most of the time they go unnoticed. Bulb mites of the genus Rhizoglyphus attack onion crops in the United States. As a result, toxic fumigants such as Vapam® are frequently applied as pest controlling agents. The main goal of our project is the identification of safer alternatives to control or eradicate this crop pest. Methods: We have tested essential oils and aqueous extracts of medicinal plants, which are known for their larvicide/insecticide activities, to determine their effects against Rhizoglyphus sp. Essential oils from Cananga odorata flowers and Syzygium aromaticum cloves were obtained by steam distillation. Aqueous extracts of Solanum torvum, Justicia pectoralis, Jatropha gossypifolia L. , Annona muricata, Randia aculeata and Piper aduncum were also tested. Ten individuals were placed over treated filtered paper (5 plates per treatment). We used a 5% DMSO aqueous solution as the negative control of our screening. Results: Although treatment with 100% of Syzygium aromaticum essential oil was lethal for every individual, no activity was detected for subsequent dilutions of 5% and 2.5% of essential oils in control solution. Aqueous extracts of the plants mentioned previously were not displayed acaricidal activity. Conclusion: Further studies using other essential oils and aqueous plant extracts are currently under investigation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported by the NIH-RISE. Grant Number: 5R25GM075348-08

A-244 Detection of Allergic Human Serological Reactivity against Aspergillus penicillioides

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Background & Objectives: Prevalence of asthma and other respiratory conditions in PR is one of the highest in the world. In these patients, allergy to fungi is commonly under diagnosed due to the lack of reagents to the most common fungal spores in the tropics. Studies of indoor air quality conducted by our laboratory revealed that Aspergilllus penicillioides (Apen), a xerophilic mold, is one of the most commonly recovered. No previous work had been done with Apen as an allergen. Methods: Indirect ELISA was used to evaluate possible sensitization of atopic and non-atopic individuals against mycelial mat extract of Apen. The population used for the study included 133 sera of patients with allergic and non-allergic profiles. The analyzed sera included 10 sera from individuals with specific IgE (sIgE) against fungal allergens (Group 1), 50 from patients with sIgE for other allergens but not to fungi (Group 2), 53 from individuals with no sIgE for the allergens tested (Group 3) and 20 sera from individuals with no allergy history used as negative control. Results: Results show that 90% of Group 1, 48% of Group 2, and 44% of Group 3 showed reactivity to Apen. Conclusion: At this moment, we can conclude that Puertorrican atopic patients are recognizing allergenic component(s) of Apen. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was supported by RCMI/NIH 2G12-RR003051 and 8G12-MD007600 and the Associate Deanship for Biomedical Sciences Graduate Program School of Medicine, MSC-UPR.

A-245 Valoración del delirio: Percepción y prácticas de enfermería con pacientes en cuidado intensivo

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Background & Objectives: La mayoría de los pacientes en estado crítico desarrolla el estado de delirio. Sin embargo, ha habido dificultad que se detecte a tiempo retrasando la selección del mejor tratamiento. Dentro de las causas posibles se menciona la falta de detección rutinaria por parte del personal de enfer-

mería. A pesar de esto, no hay evidencia de que esta situación sea igual en Puerto Rico. Objetivos: Describir la percepción del personal de enfermería sobre delirio en pacientes en unidades de cuidado intensivo; determinar cuáles son las prácticas de valoración que usa el personal de enfermería y establecer la relación entre ambas variables. Methods: Se realizó una encuesta en una muestra por disponibilidad de 41 enfermeros (as) de UCI utilizando el instrumento titulado: Prácticas y Percepciones de Enfermería sobre el Delirio* en la Unidad de Cuidado Intensivo. Results: La presencia de delirio fue la condición de menor importancia (5.4%) a ser evaluada en contraposición a la de dolor (43.2) por el personal de UCI. A pesar de que sobre el 40.0% contestó que existe un protocolo/guía de delirio, solo el 27.0% manifiesta que es capaz de evaluar delirio. De igual forma, el 42.5% evalúa siempre el nivel de sedación, sin embargo solo el 5.3% evalúa el delirio. Conclusion: La mayor parte de los participantes de esta muestra no valoran la importancia del delirio como tampoco evalúan el estado en los pacientes de intensivo. Urge una revisión o implementación de un mecanismo para su pleno reconocimiento y detección a tiempo.

A-246 Use of supplementation in children with Autism Spectrum Disorder in Puerto Rico

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Background & Objectives: The aim of this research is to evaluate how the use of nutritional supplements can affect the nutritional adequacy of children between diagnosed with Autism Spectrum Disorder in the Center of Autism (UPR-RCM) and how parent's perceive their children's improvement in behavior and overall health . Objectives: Describe the socio-demographic characteristic of the population study which includes parents of children with neurodevelopmental disabilities from the Center of Autism (UPR-RCM). Describe the nutritional adequacy of children with Autism Spectrum Disorder from the Center of Autism (UPR-RCM). Explore the behavioral patterns in children with Autism Spectrum Disorder from the Center of Autism (UPR-RCM). Identify the supplements being used children with Autism Spectrum Disorder from the Center of Autism (UPR-RCM). Explore the parent's perceptions of how these supplements affect the behavioral patterns in children with autism spectrum disorder from the Center of Autism (UPR-RCM). Determine if an association exists between the socio-demographic characteristics and the use of supplements. 7) Determine if an association exists between the most common supplements used and the nutritional adequacy in children with autism spectrum disorder from the Center of Autism (UPR-RCM). Methods: The study will be a cross-sectional descriptive and correlational-non-causal design. The Center of Autism-RCM staff will contact the parents of the children already diagnosed with autism, they will be invited to participate in the research. The parents interested in participating on the study will be contacted via phone call, to administer a 30 minute questionnaire. This questionnaire is divided in two parts, the first parts consist of the socio-demographic information of the parents and children, the second part will describe identifies what types of nutritional supplements parents are offering to their children and their respective perception of the changes in behavior caused by the diets and/or the supplements. A 5 five day food record will be sent by email or mail, the instructions of how to fill this record will be in the folder along with a booklet of food measurements. The population of Children Diagnosed with Autism in the Center of Autism (UPR-RCM) consists of a total of 57 children diagnosed with Autism. Results: Based on preliminary findings (a total of 6 participants) 66.7% of parent's cohabitate and 33.3% are married. Most of the parents are from a low socio economic background 66.7% with a high school diploma and 16.7% with a bachelor's degree and 83.3% with an annual income less than $11,000. Most of the children diagnosed are male (5/6, 83.3%) and one female (1/6, 16.7%). A total of 50% of the children were breastfed and 66.7% have been diagnosed with other conditions aside from Autism. According to these preliminary results only 1(16.7%) child is currently supplemented with multivitamins. Conclusion: These preliminary findings show that the parents from this population are predominantly of low educational and socioeconomic status who might not be aware of the use of nutritional supplements in children with Autism. The use use of nutritional supplements can be out of reach for these parents because of their high cost and lack of information based on their educational background.

A-247 Structural Optimization of the Rac GTPase inhibitor EHop-016

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Background & Objectives: Previously, our laboratory synthesized EHop-016, the first known inhibitor of Vav2-Rac1 interaction in MDA-MB-435 metastatic cancer cells at low micromolar concentrations. Inhibition of this interaction by EHop-016 prevents the activation of Rac signaling, and reduces lamellipodia formation, cell migration, and metastasis. The objective of the current research is to design new derivatives of EHop-016 in order to further optimize the activity, reduce the toxicity, and improve physicochemical parameters. Methods: We utilized molecular docking with Autodock to aid in the design of novel EHop-016 derivatives, and MolSoft to predict cLogP and drug-likeness. From previous experiments, the carbazole group of EHop-016 appeared to be required for inhibitory activity. Therefore, it was maintained as a core fragment in further design. Results: Two series of compounds were synthesized and tested for biological activity. In the first series, both the carbazole group and the central pyrimidine ring of EHop-016 were maintained, while changes were made to the 2-amino substituent. Not unexpectedly, these compounds docked in a very similar postion as EHop-016, and also appeared to have very

similar inhibitory activity towards MCF-7 cells as EHop-016. In the docking experiments, a second series of compounds was discovered which were calculated to bind to Rac1 more tightly, and give a predicted Ki between 10 and 100 times more potent than EHop-016. In these series, the central pyrimidine core is replaced by an ortho diamide group. Based on the fact that these compounds also were calculated to have favorable predicted physicochemical parameters, these series were selected for synthesis. The results presented will describe a new synthetic procedure that was developed in the laboratory. Conclusion: Novel molecules, that according to docking results bind better to Rac1, and have more favorable physicochemical properties than EHop-016, and the development of a new synthetic route to these compounds will be presented. These proposed improved inhibitors of Rac activity could lead to novel antimetastatic cancer therapies Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was supported by NIA AACP Grant and RCMI Grant # 8G12MD007600 / G12 RR 03051.

A-248 Curcumin and its Chalcone Analogues Enhance Cell-Mediated Cytotoxicity against Human Prostate Cancer

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Background & Objectives: Prostate cancer is the second leading cause of cancer-related deaths in the United States, and is often diagnosed only after metastatic tumors have formed in other organs. Most drugs currently available for the treatment of prostate cancer have limited potential because they are very toxic and more important damage the immune system. Treatments without these disadvantages are needed. Curcumin, a major component of turmeric, has been shown to possess antitumor and immunomodulatory effects by regulating a diverse range of molecular targets. We hypothesized that curcumin and its chalcone analogues may improve the anti-tumor activity against prostate cancer. Objective: In the present study, we demonstrated that curcumin and two analogues enhance anti-tumor activity of peripheral blood mononuclear cells (PBMC) against metastatic human prostate cancer cells. Methods: We isolated PBMC from healthy volunteers and stimulated them with prostate tumor antigen (2μg/ml) and curcumin or its chalcone analogues (5-15μg/ml) for three days. Following activation, PBMC were challenged with human prostate cancer cells (PC-3). After 24 hours, MTT assay was used to measure tumor cytotoxicity. Results: We found that PBMC treated with prostate tumor antigen, curcumin or its analogues showed higher cytotoxicity against prostate cancer cells as compared to control. We observed a 55% cytotoxic potential of PBMC treated with 15μg/ml of curcumin. Conclusion: Our findings suggest that curcumin and its analogues could exert their antitumor activity by modulating immune pathways, which is highly desirable in cancer immunotherapy. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by INBRE/8P20GM103475 and NIH/RCMI/G12MD007583.

A-249 Dibutyl phthalate and chromium increase aggressive behavior of the freshwater prawn M. rosenbergii

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Background & Objectives: Freshwater ecosystems are being affected by many sources of pollution related to anthropogenic activities, particularly in highly developed urbanized areas. Dominance and fighting behavior in crustaceans vary depending on a number of circumstances such as food availability, shelter, reproductive partners, environment, health status, and exposure to contaminants. The impact of urban contaminants on crustacean behavior has not been thoroughly studied yet and may serve as a means to monitor potential contamination in rivers in highly populated regions, such as the island of Puerto Rico, We hypothesized that organic compounds, such as phthalates, and heavy metal contaminants present in urban rivers of Puerto Rico can affect interactive behaviors of the freshwater prawn even at relatively low concentrations. Methods: Submissive prawns of interacting pairs were injected with dibutyl phthalate (DBP) or chromium (Cr III), at levels allowed by the Environmental Protection Agency for drinking water. Results: Results show that low concentrations of both DBP and Cr III increase levels of aggression of submissive prawns in a reversible and repeatable manner. Conclusion: It is possible that these contaminants may have an effect in the mechanisms and neural circuitry underlying aggression in the freshwater prawn. Additional studies using immunohistochemistry and electrophysiology approaches will be conducted to test this possibility. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NSF HRD-1137725; NSF DBI-0932955; NIH NIGMS 5SC3GM084763

A-250 Obesidad, Ambiente físico percibido y Estilos de vida en la comunidad Juana Matos, Cataño, PR

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Background & Objectives: Existe evidencia que sugiere que los factores físicos y sociales que componen el ambiente de la comunidad pueden influenciar el no adoptar estilos de vida saludables (nivel de actividad física, consumo de frutas y vegetales) y en el desarrollo de sobrepeso/obesidad. El estudio está dirigi-

do a determinar la asociación entre la obesidad, las percepciones del ambiente físico y los factores del comportamiento como la actividad física y la dieta en los adultos de 21 años o más de la comunidad Juana Matos en Cataño, Puerto Rico. Methods: El estudio tiene un diseño transversal con una muestra de 150 adultos residentes de la comunidad y se obtuvo por medio de un muestreo aleatorio sistemático escogiendo cada 4 casas. Los datos se recolectaron a través de un cuestionario administrado en el cual se incluye el peso y estatura, percepciones del ambiente físico para crear una puntuación, nivel de actividad física, y un recordatorio de 24 horas para medir el consumo de frutas y vegetales. El índice de masa corporal fue calculado a partir del peso y estatura auto reportados. Results: Los resultados preliminares muestran que el 71.4 % de los entrevistados se categorizan con obesidad y el 60.5% tienen una percepción moderada del ambiente físico de su comunidad. Conclusion: Los resultados muestran que el ambiente físico de la comunidad influye en el peso, nivel de actividad física y dieta de los residentes. Entender estos factores contribuirá a crear programas efectivos dirigidos a mejorar la calidad de vida de la comunidad.

A-251 Lipid Levels and Prostate Cancer Severity Association in a sample of Hispanic men in Puerto Rico

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Background & Objectives: Obesity and fat intake have been associated with increased mortality and aggressiveness in prostate cancer (PCa). However, the effects of obesity and fat intake on PCa development remain unclear. Reports about the association between serum lipid levels and PCa severity vary among different populations, with scarce data regarding this association in Hispanics. This study aims to address this void by determining the association of lipid levels with PCa severity in a sample of Puerto Rican patients. Methods: A retrospective medical record review study of 180 PCa patients who underwent radical prostatectomy (RP) was conducted between 2005 and 2012. Data analyzed included age at PCa diagnosis, BMI, pre-operative serum lipid panel and clinical parameters such as prostatectomy tumor stage (TS) and Gleason score (GS). PCa severity (GS>7, TS>pT2) was calculated using GS and TS. Unadjusted and adjusted logistic regression models were used to define the association between demographic and clinical characteristics with PCa severity. Results: Overall, 50.6% of men were ≥ 60 years, 78.9% were overweight/obese, 36.7% have hypertriglyceridemia and 32.0% have hypoalphalipoproteinemia. In the unadjusted logistic regression analysis, hypertriglyceridemia (OR: 2.20, 95% CI=1.14-4.26) and hypoalphalipoproteinemia (OR: 2.11, 95% CI=1.08-4.12) was significantly associated with PCa severity. Meanwhile, obesity (OR: 2.75, 95% CI=1.00-7.54) was marginally associated with PCa severity. However, in the adjusted logistic regression analysis, age, obesity and hypertriglyceridemia was marginally associated with PCa severity ($0.05>p<0.10$). Conclusion: These findings suggest that obesity and hypertriglyceridemia may be associated with PCa, relevant information for patient management. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was approved by the IRB (8860211) of the UPR MSC and was fully supported by the U54CA96297 and U54CA96300 from the UPR/MDACC Partnership for Excellence in Cancer Research and by The Puerto Rico Clinical and Translational Research Consortium (PRCTRC) 8U54MD007587-03 RCMI Clinical and Translational Research award, University of Puerto Rico Medical Sciences Campus.

A-252 Changes on abundance and behavior of local prawns in urban rivers

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Background & Objectives: Stressors related with high levels of urbanization, such as water contamination, are contributing to the degradation of various ecosystems. It is not known whether such contamination of rivers in urban areas of Puerto Rico is affecting the survival, physiology, behaviors and nervous system functions of native aquatic fauna, such as freshwater prawns. Methods: Prawns of the species most prevalent in the rivers of Puerto Rico, Macrobrahium carcinus, were extracted from non-urban rivers and exposed in the lab to specific pollutants known to be present in local urban streams. Dominance and general locomotion were measured before and after exposure to these pollutants. To gain insight regarding the impact of urbanization near streams on prawn abundance and distribution, we are also conducting a longitudinal population study in two local rivers with different degrees of urbanism. Results: Adult male prawns injected with a low concentration (the limit allowed by the EPA for drinking water) of dibutyl phthalate, a common plasticizer, or chromium, increase their levels of aggression and alter their patterns of locomotion. Preliminary results on the prawn census thus far suggest that the abundance of M. carcinus may be significantly reduced in urban streams. Conclusion: These results suggest that anthropogenic pollutants in urban rivers can affect interactive behaviors and general activity of adult male prawns, as well as their population levels, even at concentrations lower than those presently found in some of our rivers. Further experiments are being conducted to better understand the underlying neural or physiological mechanisms that may be affected by these pollutants. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NSF HRD-1137725 (CREST); NIH NIGMS 5SC3GM084763 (MBRS SCORE)

A-253 Measuring locomotor activity of prawn larvae following exposure to river contaminants

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Background & Objectives: As the population grows, so does the drive for urbanization. Urbanization and the resulting anthropogenic activities have an impact on the quality of nearby water resources. Puerto Rico's population density is one of the highest in the world. We seek to develop a protocol to measure how Puerto Rico´s high level of urban development has impacted the behavior and nervous system function of river fauna. Methods: We have started by recording movement trajectory and velocity of freshwater prawn larvae during five consecutive periods of 10-minutes light/dark cycles, using ViewPoint´s Zebrabox. Recordings were then made before and after exposure to two contaminants found in Puerto Rico´s urban rivers, chromium (Cr3+) and dibutyl phthalate (DBP), in levels allowed by the EPA for drinking water. Results: Larvae of Macrobrachium rosenbergii, a species raised through aquaculture in Puerto Rico, were more active during dark cycles, whereas those of M. carcinus, the prawn species found most commonly in Puerto Rico´s rivers, were more active during the light cycles. Exposure of M. rosenbergii larvae to Cr3+ did not produce any significant changes in locomotion, whereas exposure of M. carcinus larvae to DBP did, affecting parameters such as total distance travelled at slow and fast speeds. Conclusion: This protocol will continue to be used to test effects of other river contaminants on locomotion at various developmental stages of prawns. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NSF HRD-1137725; NIH NIGMS 5SC3GM084763

A-254 Características y Percepciones del Ambiente Alimentario en la Comunidad Juana Matos en Cataño, PR

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Background & Objectives: La localización y las características del ambiente en una comunidad pueden ser barreras para una alimentación saludable, al igual de estar asociadas con el estatus del peso de sus miembros. Las percepciones del ambiente alimentario/nutricional en este estudio incluyen las dimensiones del costo, el medio de transporte, la calidad de los alimentos, la variedad, y la localización de la comunidad. Este estudio está concentrado en describir las características y percepciones del ambiente alimentario de la Comunidad Juana Matos en Cataño. Methods: La población de estudio comprende de adultos de 21 años o más, miembros de esta comunidad. El muestreo fue uno aleatorio sistemático. La data fue extraída de un cuestionario administrado, el cual consistió de 7 partes que incluyeron preguntas socio-demográficas y percepciones y características del ambiente alimentario. El tamaño de muestra fue de 150 personas, el margen de error seleccionado es de 0.05 y el nivel de confianza es de 0.95. Results: Entre los datos preliminares de este estudio se señala que un 67.2% de los participantes indicó que realiza las compras de alimentos en supermercados de otros pueblos, 87.6% de estos indican que el supermercado más cercano está localizado a más de una milla o 20 minutos caminando de su hogar. Los participantes indicaron una percepción moderada sobre su ambiente nutricional. El 71% de la población se ubicó con obesidad. Conclusion: Este estudio brindará información importante para crear programas dirigidos a la nutrición y para el entendimiento del comportamiento nutricional influenciado por el ambiente.

A-255 Next-Generation Sequencing combined with Primer ID to Reveal Genetic Structure of HIV Population

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Background & Objectives: The human immunodeficiency virus (HIV) has been proven to cause the acquired immunodeficiency syndrome (AIDS). HIV uses a glycoprotein on its surface, gp120, that infects two major receptors in T cells and macrophages which are CD4 receptors and either co-receptors CCR5 or CXCR4. In gp120 there are variable loop regions that allow the virus to infect human immune cells. After the CD4 and gp120 bind, there can be either two co-receptors, CCR5 or CXCR4. Viruses that use the CCR5 are called R5 viruses and viruses that use the CXCR4 are called X4 viruses. HIV can show extensive genetic diversity in a single host. Genetic diversity plays an important role in disease progression, vaccine design, and drug resistance development. Methods: We used two late stage samples, C02 and C07, to do the experiments. The C02 sample is an R5 virus and the C07 sample is an R5/X4 virus. In order to reveal the genetic structure of the population we used cDNA synthesis with a long Primer ID and a regular Primer ID to compare if it resulted in a longer and deeper sequence. After that, we used MiSeq 250 pair-end sequencing to get a deep sequence of the cDNA with the Primer ID attached. Results: We could also correlate the viral template and number of consensus sequences. With the processed data we obtained phylogenetic trees of the virus population in the host. Conclusion: Using a longer Primer ID can have a deeper sequencing depth without bias in sampling. It provides a tool to study the phylogenetic structure of the viral population. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): SOLAR Program from University of North Carolina – Chapel Hill. RISE from University of Puerto Rico at Cayey.

A-256 In Silico Discovery of Dengue Virus Protease Inhibitors

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Background & Objectives: An estimated 2.5 billion people live in regions at high risk for Dengue virus (DENV) related epidemic transmission and up to 100 million people are infected annually. Long-term goal of this project is to provide a therapeutic alternative that can be used for effective treatment of DENV infections. Working hypothesis to be tested was that: "Selective, high-affinity inhibitors of Dengue virus replication can be identified via an In Silico approach targeting NS2B/NS3 viral protease complex formation". Methods: In order to test this hypothesis, we followed our novel drug discovery strategy including: (1)Creation of pharmacophore models based on information obtained from In Silico docking of small chemical probes; (2)Prescreening of a lead-like drug database (>1.7 Million small chemical compounds) against these pharmacophore models; (3)Docking of drugs selected by the models, against a well-defined protein target in NS3. Results: Top-hits were ranked by predicted "binding energies" (kcal/mol), with a total of 418 compounds identified with values below -9.5 kcal/mol (predicted sub-micromolar affinities). Five of those compounds were randomly selected and tested for cell toxicity and antiviral activity. Four compounds were found to have significant viral replication inhibition, while three of those compounds demonstrated an average survival of over 85% at a concentration of 100μM. Conclusion: In conclusion, our initial In Silico campaign resulted in the identification of large number of potentially high affinity top-hits, while results from our limited bioassay is consistent with the possibility that a significant number of those top-hits are biologically active and with low toxicity. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): In Silico Drug Discovery Team, RISE Program and NIH Grant number: 2R25GM059429-05, University of Puerto Rico at Cayey

A-257 Novel Adenosine/Uridine-Rich Element-Binding Proteins Recognize Interleukin-3 mRNA in T Cells

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Background & Objectives: Human Interleukin-3 (hIL-3) is a cytokine that promotes myelopoiesis, differentiation of macrophages and granulocytes. Aberrant expression of this lymphokine has been associated with several hematological cancers. IL-3 3'-UTR harbors Adenosine/Uridine-Rich Elements (AREs) involved in its post-transcriptional control. These regulatory sequences are recognized by specific ARE-Binding Protein (ARE-BP) complexes. Previous results from our laboratory estimated five ARE-BP complexes from 34 to 88 kDa binding to the hIL-3 ARE using UV-crosslinking assay. Our goal is to identify novel ARE-BPs that mediate the post-transcriptional regulation of hIL-3. Methods: To achieve this goal, RNA affinity purification coupled with MS/MS analysis was performed. Also, an immunoblot analysis to confirm the presence of specific proteins was carried out. Results: These results identified ~40 proteins between 12 to 82kD interacting with the hIL-3 ARE in acute lymphoblastic leukemia cells. MS/MS results in accordance with previous results from our laboratory showed that HuR and p32hnRNP C1/C2 are components of the ARE-BPs that recognize the hIL-3 ARE. In addition, our results identified KSRP and SAM68 as novel hIL-3 ARE-BPs. Besides, we found that p45AUF-1 protein interacts with hIL-3 ARE. Conclusion: Taken together, these data imply that novel ARE-BP complexes can play an important role in the IL-3 post-transcriptional regulation. Ultimately, elucidating the role of these ARE-BPs in IL-3 expression can provide new insights about the ARE-mediated post-transcriptional regulatory pathway and blood cancer. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by MBRS-RISE Program R25GM061838 and UPR-PES Intitutional funding.

A-258 Novel CBZ-Intercalated ZrP Nanomaterials

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Background & Objectives: We are interested is the intercalation of different drugs in layered inorganic materials in hopes of developing new and more efficient drug delivery treatments. Zirconium phosphate (ZrP) is a layered inorganic material whose well-studied alpha (α-ZrP) phase has an interlayer distance of 7.6 Å, while its less-studied tetha phase (θ-ZrP) has an interlayer distance of 10.3 Å. We are using θ-ZrP in the intercalation of different compounds. The drug being used in our present studies is carbamazepine (CBZ) which is used primarily to treat epilepsy and bipolar disorders. CBZ has poor solubility in water, making the process of intake in the body more difficult. Methods: The intercalation reaction between CBZ and ZrP was performed using a 200 mL 1:1 water and ethanol solution with the compounds in a 5:1 molar ratio. Results: To analyze the product of the intercalation reaction we used X-ray powder diffraction (XRPD); if the interlayer distance between the layers of the product material is more than 7.6 Å, it indicates that the intercalation reaction was successful. The XRPD pattern shows that the product has an interlayer distance of 10.3 Å, indicating that we were able to produce a new CBZ-intercalated ZrP phase with an expanded interlayer distance. We also used infrared spectroscopy to characterize the CBZ-intercalated ZrP material and observed vibrational peaks characteristic of CBZ. Characteristic signals of CBZ were also observed in the diffuse reflectance spectrum and SEM-EDS of the intercalated pro-

duct. Conclusion: Our results indicate that we were successful in intercalating CBZ into ZrP. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.) Funding Sources: RISE and PR-LSAMP Program.

A-259 Characterization of Androgen Receptor in Epithelial Ovarian Cancer

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Background & Objectives: Ovarian cancer (OC) is one of the most lethal malignancies among women. Using Pten fl/fl;LSL-KrasG12D;Amhr2-Cre (P53+) and Pten fl/fl;P53 fl/fl;LSL-KrasG12D;Amhr2-Cre (P53-) transgenic mouse models we measured the expression of Androgen Receptor (AR) in ovarian tumors and tumor microenvironment. The role of AR in the ovary is not fully understood, but it plays an essential role in follicular development. Since high levels of androgens are correlated with increased risk of OC and the incidence is higher after menopause, when androgens are the main steroids produced by ovary, we want to determine the impact androgens have on OC cell growth. Methods: Ovarian serous epithelial (OSE) cancer cells were isolated from P53+ and P53- ovarian tumors and injected intraperitoneal into the mice. Then, RT-PCR was performed on lysates from P53+ and P53- cells treated with DHT in culture. The omentum was sectioned, H&E staining was performed, and Immunofluorescence was done to measure the AR expression. Results: The omentum from mice injected with P53+ cells was larger than the P53-, and the expression was also at higher levels in P53+ OSE tumor cells. Also AR mRNA expression levels suggest that AR is expressed not only in ovarian cancer cells, but also in the tumor microenvironment. The DHT treated mice show proliferation of meso-epithelial cells in wt mice, and also confirm that metastatic P53+ cells express AR. Conclusion: These results suggest that androgens may play an important role in the development and or progression of OC depending on P53 status and may be a potential future therapeutic target. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The Endocrine Society's Minority Access Program supported this research.

A-260 Fasciola hepatica fatty acid binding protein inhibits TLR-4 pathway activation

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Background & Objectives: Lipopolysaccharide (LPS) is a major component of the outer membrane of Gram-negative bacteria and a potent activator of the human innate immune system. The immune response to LPS can lead to septic shock syndrome if the inflammatory response is amplified and uncontrolled which can be fatal. Several proteins are important for LPS recognition and pathway activation including lipid binding protein (LBP), CD14, MD12 and Toll-like Receptor 4 (TLR-4). Today, there is a need to develop TLR antagonists that could prevent or circumvent the negative and sometimes fatal effect of inflammatory responses during a variety of human diseases. Methods: Here, we demonstrated that the Fasciola hepatica fatty acid binding protein (FhFABP) has antagonist properties through TLR-4 after LPS stimulation. Results: Using a proximity ligation assay (PLA) we showed that FhFABP interact with human CD14 co-receptor of HEK 293 cells to block the activation of NF-kB induced by LPS, functioning as antagonist of TLR4. Furthermore, real-time PCR (qRT-PCR) demonstrated that FhFABP inhibited the production of inflammatory cytokines as TNF-α, IL-1β, IL-12A and nitric oxide production by human monocyte-derived macrophage (MDM) in vitro. Conclusion: These findings of TLR4 pathway inhibition open doors to further studies directed to explore the potential of FhFABP as a new class of drug against endotoxemia / septic shock bacterial or others inflammatory diseases in which TLR4 are involved. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was supported by MBRS-RISE R25GM061838-13, NIH-SCORE1SC1AI096108-01A2 and NCRR 2612-RR003051/8G12MD007600.

A-261 Isolation and Characterization of Simalikalactone D from the Puerto Rican Plant Simarouba tulae

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Background & Objectives: The family of the Simaroubaceae has been reported to have a variety of biological activities, including anti-malarial, anti-inflammatory, and anti-cancer properties. The main secondary metabolites isolated from this family of plants are compounds with general structure of quassinoids, a group of highly oxygenated terpenes found only in simaroubaceous genera and are considered taxonomic markers of this plant family. The specie Simarouba tulae is an endemic tree in Puerto Rico that has not been investigated for its potential biologically active constituents. In this study, our objective is to analyze through a bio-guided isolation protocol the main secondary metabolites responsible for the anticancer activity of this plant extracts from pure compounds of the Simarouba tulae. Methods: The leaves from the plant were extracted with a mixture of CH2Cl2-MeOH (1:1). The resulting crude extract was suspended in water and extracted with organic solvents and dried by distillation. Results: The resulting extracts were tested for their growth inhibitory activity against MCF-7 and T47D breast cancer cells via a MTT-based protocol assay. Among the extracts examined, the chloroform extract showed anticancer activity at 100 μM with growth inhibition of >80% against both MCF-7 and T47D cell lines. On the basis of the initial activity we performed, the bio-guided fractionation of the chloroform extract resulted in the isolation of the pure quassinoid derivative simalikalactone D. Conclusion: We conclude that

this plant specie is an important natural source that can provide new therapeutic leads for the discovery and development of new anticancer drugs. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by the Institute of Interdisciplinary Research Grant NIH/NIMHD (#1P20MD006144-01) and DAA at UPR Cayey.

A-262 Detection of hydrogen peroxide-induced mitochondrial DNA damage in H9c2 cardiomyocytes

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Background & Objectives: Oxidative stress plays a crucial role in the pathogenesis of cardiovascular diseases such as myocardial infarction (ischemia), hypertrophy and heart failure. Reactive oxygen species can induce a variety of DNA lesions in nucleus and mitochondria. However, quantitative analysis of DNA lesions in various tissues and cells, including cardiac cells, requires individual methodical approaches. In this study, we aimed to apply the Quantitative Polymerase Chain Reaction (QPCR) assay for quantification of mitochondrial DNA (mtDNA) lesions in cardiomyocytes subjected to oxidative stress. In this assay, lesions that blocks the progression of the thermostable DNA polymerase result in decreased amplification of the PCR product, giving a relative measure of the lesions present in the target sequence. Methods: H9c2 embryonic rat cardiomyocytes cultures were treated for 1 h with increasing concentrations of H2O2 (25, 50, 75, 100, 200 μM) followed by DNA isolation and QPCR analysis. Results: Cells treated with 75, 100, 200 μM of H2O2 showed a significant reduction in the relative mtDNA amplification which were 60%, 20% and 10% ($p<0.05$ for all doses), respectively, compared to untreated (control) cells. Conclusion: These results indicate that the QPCR assay can be applied to detect mtDNA damage in rat cardiomyocytes after acute oxidative stress. Future experiments involve: (1) the determination of the repair kinetics of mtDNA damage, (2) the effects of mtDNA lesions in mitochondrial function, and (3) whether antioxidants specifically targeted to mitochondria can ameliorate this damage. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by NIH grants SC1HL118669 (S.J.) and G12RR03051.

A-263 PfaR is a Putative Regulator of Fatty Acid Biosynthesis with Possible DNA-Binding Capability

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Background & Objectives: Polyunsatured fatty acids (PUFA) are important compounds in human health, while monounsatured and saturated fatty acids are essential compounds of biofuel, an area of increasing interest. Shewanella oneidensis is a gram-negative bacteria found mostly in deep-sea environments. This bacterium has a conserved gene called pfaR which encodes for a 36kD putative transcription factor. Due to the location of pfaR in the PUFA synthase gene cluster, we hypothesize that this gene is involved in the transcriptional regulation of Eicosapentaenoic Acid (EPA) biosynthesis. The goal of this study is to clone the pfaR gene into a suitable vector, in order to express, purify, and characterize the protein. Methods: The pfaR gene was cloned into a pET-200/TOPO vector and expressed it in E. coli BL21, where the protein was induced with isopropyl-b-D-thiogalactopyranoside (IPTG). The protein was solubilized using an inclusion body protocol in the presence and absence of DNase. Protein purification was done with NiNTA affinity chromatography columns, and the protein was eluted with an imidazole buffer. Results: A strong, visible band in the 36kD region, present after induction with IPTG, proves the successful expression of PfaR. In the presence of DNase, protein precipitation occurs in the NiNTA resin, an effect not present when DNase is absent from the buffer. Conclusion: In conclusion, PfaR was cloned into pET-200/TOPO vector, successfully expressed in E. coli BL21, and purified by NiNTA chromatography. The presence of DNase results in protein precipitation in the resin. This may indicate the need for stabilizing DNA interactions tha aid in solubilizing PfaR. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Shared instrumentation was supported by grants from the National Center for Research Resources (2G12-RR003051) and the National Institute on Minority Health and Health Disparities (8G12-MD007600) from the NIH. The authors wish to thank the staff at RISE for their support and the UPR-RCM Department of Biochemistry. Major credit goes to Delise Oyola, Uldaeliz Trujillo, Maria Rodriguez-Guilbe, and Vilmarie Mercado for their invaluable support and recommendations.

A-264 Factores que inciden en el desarrollo de obesidad en el personal de la UPR en Mayagüez

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Background & Objectives: La obesidad está asociada con un alto riesgo de enfermedades crónicas. La misma ha sido asociada a factores nutricionales, actividad física, y un énfasis menor en aspectos emocionales como estrés y autoestima. "Healthy People 2020" del Departamento de Salud y Recursos Humanos de los Estados Unidos, incluye entre sus metas de salud, el indicador de la prevención de obesidad para la década del 2020. Este estudio explora entre la muestra participante factores relacionados a obesidad. Methods: La muestra consistió de 51 participantes docentes y no docentes de la Universidad de Puerto Rico en Mayagüez. Para obtener los datos se llevaron a cabo encuestas sobre nutrición, actividad física, estrés y autoestima. También se obtuvieron medidas antropométricas y signos vita-

les. Results: Las medidas de índice corporal (BMI) fluctuaron entre los 25.7 y 39.3, colocando a los participantes en obesidad y riesgo de obesidad. La actividad física que realizan es baja o moderada y el 45% tiene una estima baja. Conclusion: Los participantes se perciben con riesgos en su salud a causa de la obesidad y están dispuestos a realizar cambios. Factores como la nutrición, la actividad física y la autoestima y el estrés inciden en el desarrollo de obesidad. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): El Proyecto es subvencionado con fondos semilla del Decanato de Artes y Ciencias del RUM.

A-265 A bioinformatic analysis of the vertebrate twist protein family

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Background & Objectives: Twist protein family members are expressed in different tissues during early stages of embryogenesis and their presence is essential for proper development and survival. Though the highly conserved basic helix-loop-helix and C-terminal domains of Twist proteins have received a lot of attention, the N-terminal region and the evolution of such proteins merit further study, particularly among mammals. The goal of this study is to analyze the conservation of the N-terminal region of different vertebrate Twist proteins and to investigate the origin and evolution of the two paralog twist proteins. Methods: Sequence comparison was used to analyze the conservation of the N-terminal region of different vertebrate Twist proteins. By phylogenetic analysis we investigated the origin and evolution of Twist1 and Twist2 proteins. Results: We identified two putative de novo motifs (SSSPVSP and SEEE), specifically in mammals. In addition, a number of amino acid substitutions present in the NLS's of a few species demonstrate that there could be other possible residues influencing the nuclear localization of such proteins, with the G residue of the second NLS being a potential target. Furthermore, among the two twist paralog branches, twist1 is the most distant in vertebrates suggesting it evolved first due an abrupt increase of substitutions in a short period of time due to functional divergence. Also, Twist1 seems to have a higher rate of evolution than twist2 since only Twist1 sequences contain two glycine-rich motifs not present in Twist2. Conclusion: Our findings shed light on the relationship of twist1 and twist2 paralogs among mammals in vertebrates. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported through the United States National Institute of Health National Institute of General Medical Sciences grant No. T36GM008789 and the Pittsburgh Supercomputing Center National Resource for Biomedical Supercomputing funded through the United States National Institutes of Health National Center for Research Resources grant P41 RR06009.

A-266 AP endonuclease 1 protein expression is induced in skeletal muscle from a Huntington's disease mouse

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Background & Objectives: Huntington's disease (HD) is a progressive and fatal neurodegenerative disorder caused by an unstable expansion of CAG repeats in the huntingtin (htt) gene resulting in cognitive, neurological and motor insufficiency in HD patients. Convincing evidence suggests that oxidative damage to the mitochondrial DNA (mtDNA) leads to HD neuropathology, however, whether the htt mutation also affects peripheral tissues such as the skeletal muscle (SKM) remains to be addressed. We have previously observed that mtDNA damage increases in SKM of two different HD genetic models and that deficient base excision repair (BER) leads to mitochondrial dysfunction in HD mouse brain. We sought to test the hypothesis that the expression of APE1, the major AP endonuclease in BER, may be altered in SKM from HD mice. Methods: To test our hypothesis we assessed APE1 expression levels in wild type and the HdhQ150(+/+) knock-in (HD150KI) mice using Western blot analysis. We measured APE1 protein expression by Western blot in SKM of a HD knock-in mouse model (HD150KI). Results: Our results show that there is an increase in the expression levels of APE1 in HD mice compared to wild type mice. Conclusion: This study may contribute to the understanding of BER in the SKM pathology seen in HD. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by U54-NS039408, R25-GM061838, 2G12-RR003051 AND 8G12-MD007600.

A-267 Assessment of organic and metal contaminants as a function of urban development near rivers of PR

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Background & Objectives: Accelerated environmental and sociological global changes are presently affecting multiple ecosystems. Anthropogenic activities, such as urbanization, manufacture, agriculture and transportation, often lead to contamination of water resources through runoff from sewer systems or illegal dumping. We wish to determine if urbanization near rivers in Puerto Rico results in increased levels of organic and metal contaminants of anthropogenic origin, to then test how these contaminants may affect behavior and the function of the nervous system of river fauna. The Rio Piedras and La Plata rivers have been chosen as urban rivers with differing hydrological flow characteristics, with Rio Mameyes serving as a control non-urban river. Methods: Water samples were

collected at three sampling points of each river and analyzed using Gas Chromatography-Mass Spectrometry (MS) and Inductively Coupled Plasma-MS. Results: A wide range screening of organic compounds (OC) was initially carried out, identifying approximately 35 potential OC contaminants, including esters, phthalates, pharmaceuticals and derivatives of ingredients in personal care products. Dibutyl phthalate, commonly used in polyvinyl chloride plastic (PVC) to render it flexible and also used as a fragrance ingredient in cosmetics, was found in a concentration of 0.01 ppm in La Plata and 0.0007 ppm in Río Piedras river. Copper, chromium and cadmium levels in the sampled urban rivers were less than 0.005, 0.1, and 1.3 ppm. Conclusion: These results of the monitored contaminants are within EPA standards. Further experiments are being conducted to assess the levels of other heavy metals and compounds from pharmaceuticals and personal care products. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by: NSF HRD-1137725 (CREST); NIH NIGMS R25GM061838 (MBRS RISE); NIH NIGMS 5SC3GM084763 (MBRS SCORE)

A-268 Preterm Birth Literacy among PROTECT Participants: Impact on Community Engagement & Outreach

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Background & Objectives: Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) is studying contaminant exposure (CE) and exploring the risk factors for preterm birth (PTB). Concern towards potential exposure to contaminants present in plastics, pesticides and other products and the high rate of PTB in Puerto Rico has led to a highly engaged cohort and community seeking more information and raising awareness for PTB. Describe the sociodemographic profile and knowledge of PTB of the participants. Explore their implications on community engagement & outreach. Methods: Descriptive study of data collected throughout pregnancy and post-partum analyzed from a social determinants of health perspective using SPSS. Results: Median age of the participants was 27 years; 54% were married, 18% reported enrollment in high school and 70% had a higher level of education; family annual income for 38% was < $20,000. 66% received prenatal care in private Ob/Gyn clinics, 33% were insured by Mi Salud. 71% reported knowing the warning signs of PTB, 16% presenting PTB symptoms and 90% knowing where to go in case of experiencing a PTB, 18% receiving treatment for PTB (progesterone). Differences in maternal sociodemographic characteristics were noticed among recruitment sites. Conclusion: Further assessment of the concerns of the participants and community with regards to specific contaminants under study and routes of exposure will provide valuable information. Integration of the social determinants of health analytical framework in our community engagement & outreach activities are crucial in the development of capacity building and empowerment on environmental health practices and PTB awareness. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project is supported by award number P42ES017198-01A1 Superfund Research Program for the National Institute of Environmental Health Sciences (NIEHS) and grant number G12RR03051 (RCMI Program, UPR Medical Sciences).

A-269 Deep brain stimulation of the ventral striatum impairs extinction of morphine-place preference

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Background & Objectives: Deep brain stimulation (DBS) is a neurosurgical procedure used to treat refractory neuropsychiatric disorders. Recent studies have suggested that DBS of the ventral striatum may be a potential target for treating addiction. We recently showed in rats that DBS of the dorsal portion of ventral striatum (dorsal-VS) reduced fear expression and enhanced fear extinction. Here, we examined whether DBS of dorsal-VS could also reduce the expression of morphine-induced conditioned place preference (CPP), and enhance its extinction learning. Methods: Male rats were stereotaxically implanted with bipolar electrodes aimed at dorsal-VS (−6.5 mm DV, ±2.0 mm ML, and +1.2 mm AP). Using a two-compartment CPP box, rats were conditioned across 8 days to prefer the side paired with morphine. Subsequently, rats expressing morphine-CPP received 6 extinction sessions on 6 consecutive days, together with dorsal-VS DBS (130 Hz, 0.1 ms pulse, 100 μA, 60 min) or sham stimulation. Results: DBS did not reduce the expression of morphine-CPP, as indicated by equivalent % time spent in the morphine-paired side (Sham: 70%, DBS: 68%). Surprisingly, DBS impaired extinction of CPP, as indicated by a high % of time spent in the morphine-paired side throughout extinction (Day 6 - Sham: 52%, DBS: 74%, ANOVA repeated-measures between group; $p<0.05$). Additional experiments showed that the DBS itself did not induce CPP. Conclusion: These results suggest that ventral striatum DBS may have opposite effects on fear- vs. reward-extinction. Furthermore, it suggests that the dorsal-VS site may not be a promising target for treating addiction with high-frequency DBS. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH-NCRR (2G12-RR003051); NIMHD (8G12-MD007600) for JLBE, Conte Center Grant (P50 MH086400) for GJQ; MBRS-RISE-MSC (R25-GM061838) for FJMR. Authors declare no conflict of interest.

A-270 Nanoformulation Enhances Tunicamycin's Anti-angiogenic Efficacy

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Background & Objectives: Breast cancer is a global health problem and accounts for nearly a quarter of all cancers in women. 2013 estimate diagnosing 296,000 women and 2,240 men with breast cancer in the United States and 39,620 women and 410 men will die. If no major changes in prevention or treatment are forthcoming 747,802 women would die worldwide in 2030. Breast cancer treatment uses several options including targeted antibody therapy. Unfortunately, de novo and acquired resistance are major problems with all known targeted therapies, and tumor microenvironment contributes to chemoresistance. We have shown that Tunicamycin inhibited angiogenesis and prevented the progression of double- and triple-negative breast tumors in athymic nude mice ~55-65% in three weeks. Methods: Since, nanoparticles (<100 nm) evade the immune system's clearing mechanisms, we hypothesized that nano-formulated Tunicamycin would be a better candidate in the clinic. Several Tunicamycin nano-formulations were tested in a capillary endothelial cell model. Results: MTT assay indicated inhibition of cellular proliferation ~50% within one hour whereas the native Tunicamycin had no effect. There were inhibitions of either both cyclin D1 and CDK4, or cyclin D1, or the CDK4 expression and that of phospho Rb (serine-229/threonine-252). Phosphorylation of p53 at serine-392 was down-regulated but not total p53. Increased expression of GRP-78/Bip identified "ER stress", and upregulated expression (1.6-5.5 folds) of phopsho-PERK supported induction of unfolded protein response (upr). Conclusion: Down regulated expression of caspase-9 and caspase-3 led to conclusion that "ER stress"-mediated cell death by nano-formulated Tunicamycin is through a non-canonical pathway. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Supported by Komen for Cure Grant BCTR58206.

A-271 Evaluation of the role of the alternatively spliced RBP-Jk isoforms in KSHV reactivation

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Background & Objectives: Kaposi's sarcoma-associated herpesvirus (KSHV), also known as human herpesvirus 8 (HHV8), is a DNA virus member of the Family Herpesviridae. KSHV is the etiological agent of an endothelial cancer, Kaposi's Sarcoma (KS), a B-cell lymphoma, Primary effusion lymphoma (PEL), and the lymphoproliferation Multicentric Castleman's disease (MCD). As in all herpesvirus, KSHV undergoes two different programs: latency and lytic reactivation. Reactivation from latency is a key step for cancer progression and disease development. It has been demonstrated that KSHV Rta protein is necessary and sufficient to reactivate the virus from latency. Rta works as a tetramer to recruit the cellular Notch Signaling effector, RBP-Jk, to viral promoters. RBP-Jk is necessary for productive viral reactivation. Four different alternatively spliced RBP-Jk variants have been reported in GenBank. We hypothesized that these isoforms play a key role in KSHV's reactivation from latency. Methods: We used as a cell culture model a RBP-Jk knockout B-cell line to study the role of the RBP-Jk isoforms in Rta transactivation. Results: Using the Mta viral promoter, we showed that Rta uses only 3 of the 4 RBP-Jk isoforms in transactivation. Moreover, the isoforms differ in magnitude of Rta transactivation supported, and in binding to the Mta promoter. Conclusion: Our results demonstrate that Rta's interaction with RBP-Jk is not exclusive to the canonical isoform 1. More work is required in order to understand the role of the isoforms in KSHV reactivation. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project is support by R25 GM0594291 , NIH AI 0781382 and Alfred P. Sloan Foundation Scholarship2. Special thanks to the current members of the Lukac lab for their help and advice.

A-272 Unintentional Poisoning Trends Among PR Elders: Evaluation of the Poison Center Data

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Background & Objectives: Unintentional poisonings are a cause of morbidity and mortality among the elderly. It occurs when no harm is intended with a substance exposure and results from drug misuse, drug abuse, or taking too much of a drug for a medical reason. Analgesics, cardiovascular medications, theophylline, antidepressants and other psychotropic medications cause most drug poisoning fatalities in US elderly. Our objective was to evaluate trends and demographics, the types of medications most frequently involved and the medical outcomes related to unintentional poisoning among Puerto Rican elders. Methods: We performed a retrospective analysis of the Puerto Rico Poison Control Center (PRPCC) Data System. 200 cases per year from 2004-2011 were examined. Results: We evaluated 1,600 records of calls made to the PR PCC. The frequency remained constant (~400s) throughout the 8 years. 64% of calls reported incidents among the female patients and 36% pertained to males. 63% of calls were manage onsite while 19% required admission to ward. The drug categories that were more frequently reported were: cardiovascular, sedatives, cleaning products and pesticides. While the percent population is equally distributed among the entire island (9-14%), the majority of calls were received from the metropolitan. Conclusion: This study elucidates the frequency, types and outcomes of unintentional exposures among a cohort of puerto rican elders. We identified disparities in poisoning exposures in terms of medication categories. Unintentional

drug poisoning are prevalent and will be a worsening public health problem as the population ages. Therefore, knowing the trends can aid in developing strategies for identifying and prevent unintentional poisoning. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This publication was made possible by Grant Number R25 RR17589 from the National Center for Research Resources (NCRR)/ National Institute of Minority Health and Health Disparities (NIMHD) , a component of the National Institutes of Health (NIH). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NIH."

A-273 Lymphoscintigraphy in the Evaluation of Lymphedema: A Pictorial Essay

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Background & Objectives: Lymphedema, the accumulation of fluid in the interstitium by lymphatic dysfunction, not only has various etiologies, but is also a cause of other health complications. Knowing that the lymphatic system transports molecules from the interstitium into the vascular compartment, we can inject radiolabeled macromolecules to follow their tract through the lymphatic circulation. We are then able to characterize the lymphatic flow, aid in the proper and timely diagnosis of lymphedema and its adequate management. We present a series of lymphedema cases of the extremities from our Nuclear Medicine clinic, with different characteristics and flow patterns to illustrate the role of imaging in patient management. Methods: Lymphoscintigraphy was performed with a 1 mCi dose of ultrafiltered 99mTc-Sulfur Colloid. The dose was divided in two subcutaneous injections, administered into the second interdigital web space of both hands (for arm lymphedema) and feet (for leg lymphedema). After massaging the injection site, serial images of the upper extremities up to the thorax and abdomen (for arm lymphedema) and of the lower extremities up to the pelvis/abdomen (for leg lymphedema) were acquired from 30 minutes up to 2.5 hours. Results: Patients showed various characteristic patterns of lymphatic dysfunction, such as dermal backflow, collateral lymphatic channels, complete absence of lymphatic channels, truncation of radiotracer migration, in transit popliteal nodes, and absence of migration to liver. Conclusion: Lymphoscintigraphy is a readily available, minimally invasive, low-cost imaging modality useful in the diagnosis and management of lymphedema. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors have no conflict of interest to disclose.

A-274 Presence of Blood glucose derangement in patients that developed Acute Coronary Syndrome

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Background & Objectives: ACS is 2-3 times more common in diabetics than in the general population. Objective: To determine the amount of diabetic patients with ACS and their metabolic control, new occurrences of DM and IFBS in ACS without DM history; how did other cardiovascular (CV) risk factors relate to the presence of BGD in ACS & hypoglycemia in who died upon admission. Methods: A descriptive-retrospective study; 454 cases analyzed from 2008 to 2012; data collected from medical records (without personal identifiers) from SJCH. Results: 454 Pts with ACS evaluated from 2008 to 2012, ages from 26 to 102 yo. 268 male (59.0%) and 186 female (41.0%),prevalence over 65y/o. 218 diabetics , 52 diabetics de novo for a 59% and 60 cases of IFBG (25.4%). Only 124/454 ACS Pts (27.3%) did not have BGD. We analyzed the metabolic control in those diabetic patients with ACS who died and none had hypoglycemia with a media A1C in them of 8.4%, & lowest 6.1%. Other CV risk factors such as obesity, HTN, smoking, dyslipidemia and cocaine use, with or without BGD were analyzed with predominance of morbid obesity and HTN in those with BGD. Conclusion: DM and IFBG are very high among patients with ACS, mainly over the sixth decade. DM de novo and IFBG in patients with ACS without history of DM was high. None of the diabetic patients with ACS who died had hypoglycemia. HTN and morbid obesity is presented in a great proportion of our patients with ACS with glycometabolic derangement.

A-275 The Hard Stop Policy: Perceptions and Understanding among Practicing Obstetricians in Puerto Rico

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Background & Objectives: In Puerto Rico the elective induction rate is as high as 37% and ranks in the third position of global reports for preterm births rate with 16.7%. The objective of this study was to identify practice patterns, perceptions and understanding of the Hard Stop Policy for limiting elective inductions before 39 weeks gestation among practicing obstetricians in Puerto Rico. Methods: This cross-sectional study consisted of obstetricians currently practicing in Puerto Rico for at least one year. Data was collected by a self-administered questionnaire from August to October 2013. Results: Among a total of 82 obstetricians, 62% replied that they consider an elective induction after 40 weeks. Most of them provide an informed consent and consider that waiting until 39 weeks for elective inductions does not increase the risk of perinatal complications (76% and 89% respectively). The factors most commonly taken into account were the following: suspected macrosomia, patient request and multiparity at term. Approximately 90% of obstetricians acknowledge the ACOG's patient safety checklist for elective inductions and 65% reported that their hospitals have a Hard Stop Policy. Conclusion: These results demons-

trate that most obstetricians are knowledgeable about the indications of delivery before 39 weeks. Despite of this, the rate of elective inductions that lead to increased cesarean section rate and NICU admissions continues to increase. This problem does not arise from lack of knowledge, but from non-medical reasons. The next step would be to reinforce the hard stop policy as an institutional measure supported by the government. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): I have no conflict of interest. This project is not supported by any funding. We would like to thank Ivette Negron, MS our Research and Statistics Coordinator.

A-276 Clinical Validation of the ICDAS for the Detection of Interproximal Dental Caries

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Background & Objectives: The ICDAS is a standardized system created for dental caries diagnosis that is becoming widely accepted by dental researchers and clinicians. This method has not been validated clinically for the detection of interproximal caries lesions. The objective of this study was to evaluate clinically the validity of the ICDAS System in detecting interproximal caries using the bitewing x-rays as the gold standard. Methods: A group of 185 adult subjects were examined for dental caries by one calibrated examiner, as part of a larger study of caries risk factors, using the ICDAS clinical criteria. Digital bitewings were taken. The x-rays were read by the same examiner using the ICDAS criteria for x-rays. The results of both methods were compared using pair-wise correlations, sensitivity, specificity, positive and negative predictive values and ROC curves. Results: The ICDAS clinical scores for interproximal caries correlated moderately with the x- ray scores (Spearman rho=0.43, P<0.001). When the x-rays were used as the "gold standard", the validity measures of the ICDAS in the detection of interproximal caries in the dentine were: sensitivity 27.27%, specificity 99.52%, positive predictive value 64.29%, negative predictive value 97.74%, and AUC: 0.73 (95% CI 0.69, 0.77). Conclusion: Under the conditions of the present study, the ICDAS was shown to have high specificity, but low sensitivity in the clinical detection of interproximal caries compared to the bitewing radiography. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was funded by NICDR Grant R21 #DE021135. The authors report no conflict of interest.

A-277 The Cosmetic Gynecologist: Attitudes and Perceptions of Puerto Rican Women

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Background & Objectives: Cosmetic Surgery is a multi-disciplinary sub-specialty with the main objective of performing face and body esthetic procedures for the overall wellbeing of the patient. Most physicians and patients are not aware that many primary surgical specialties can be trained and certified to perform minimally invasive and invasive cosmetic procedures. In addition, the area of Cosmeto-Gynecology, which includes aesthetic surgery of the vulva and vagina, is now been performed by Gynecologists. Both the medical professionals and the general population need to be educated and aware that cosmetic surgery is a growing surgical sub-specialty requested by women to improve their physical appearance and self-esteem. The purpose of this study is to assess if Puerto Rican females are receptive about their gynecologist performing cosmetic surgery and if they agree that an adequately trained and certified gynecologist can perform cosmetic surgery. Methods: Trained screeners and recruiters visited and made the initial contact to patients at the OBGYN clinics of the San Juan City Hospital. A survey was administered for the participant to answer and return it to the recruiter. Results: Preliminary results show that the population evaluated is poorly informed about gynecologist performing cosmetic surgery. Considering the wide range of ages included, patients overall have not discussed this subject and are not open to undergo cosmetic procedures by them. Conclusion: This rapidly increasing subspecialty is not well known by the population in general due to lack of orientation and public access. The information should be provided and discussed as needed by certified gynecologists in their general practice. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): San Juan City Hospital Clinics Staff, Ob Gyn Residents and Attending physicians

A-278 Epidural Stimulation to Facilitate Stepping in a rhesus monkey after Spinal Cord Injury

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Background & Objectives: Epidural electrical stimulation (EES) of the lumbar spinal cord inferior to a lesion enables weight-bearing and propulsive stepping in rodents and cats. It has also enabled full body-weight bearing during standing and non-weight-bearing cyclical stepping movements in a C7-T1 paraplegic. We tested the efficacy of epidural stimulation for enabling both weight bearing and propulsion in an adult male rhesus monkey (Macaca mulatta), hypothesizing that the lumbar spinal cord excitability level can be neuromodulated to facilitate stepping after a unilateral (thoracic) spinal cord lesion. Methods: EMG bipolar electrodes were implanted in six right hind limb muscles and 16 stimulating electrodes were placed on the dura mater covering the L1-L6 lumbar spinal levels. After collecting normal treadmill locomotor data, a surgical hemisection (right T8-T9) was performed. Results: At two

weeks post-lesion, standing and walking abilities were tested on the treadmill at 0.2 m/s (O.5 mph). Without EES, EMG activity was absent or minimal and irregular, and the affected limb could not bear body weight, much less contribute to propulsion. By contrast, with continuous sub-acute EES (30 Hz, 1.0 mA amplitude, 500 us pulse width) caudocranially from L6 to L5, coordinated knee extensor and ankle plantar flexor activity returned immediately, enabling both weight-bearing and propulsion with the affected limb. Over time, significant motor abilities returned, but EES nevertheless continued to improve stepping. Conclusion: After a severe unilateral thoracic spinal lesion, EES can greatly improve locomotor function immediately upon stimulation, making stepping characteristics significantly more symmetrical bilaterally. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Mike Struharik (RxGen, St. Kitt's Biomedical Research Foundation) provided technical advice on kinematic analysis. Funded by University of Puerto Rico Deanship of Medicine, Broccoli Foundation, Biomedical Engineering Partnership Program, and NSF DBI-0932955.

A-279 Is Fear to be Sued a Factor Influencing Cesarean Section Rates in Puerto Rico?

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Background & Objectives: Increasing rate of cesarean sections has been noted worldwide and possible causes have been identified including medico-legal aspects. Several studies have evaluated the impact of malpractice on the increase of cesarean rates; however, this aspect has never been assessed in Puerto Rico. We aim to determine if the medico-legal aspect is an important factor in the increase of cesarean rates in PR. Methods: We used the database from a questionnaire administered in 2011 to a sample of practicing obstetricians in PR about factors that increased cesarean rates. The questionnaire addressed several medico-legal aspects as a cause for high cesarean rate. Descriptive statistics were used for data analysis. Results: A total of 27% of all practicing obstetricians in PR participated. Mostly were males, with an average of 15 years in clinical practice and a mean age of 46 years. Fifty percent identified malpractice as an important factor influencing the decision to perform a cesarean section. Regarding the personal history of malpractice claims, 22% referred being sued because of not performing a cesarean section on time versus 5% who were sued after performing one. Seventy percent proposed a malpractice reform to decrease the cesarean rate in PR. Conclusion: The importance of "fear of litigation" as a determinant of the obstetric practice leading to an increase in cesareans in PR is shown. Many Obstetrician-Gynecologists have changed their practices to the level of quitting a career in Obstetrics. A malpractice reform is regarded as a vital step in decreasing rates of cesareans in PR. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): "This study was supported by the UPR School of Medicine Endowed Health Services Research Center, Grants 5S21MD000242 and 5S21MD000138, from the National Center for Minority Health and Health Disparities, National Institutes of Health (NCMHD-NIH). Its contents are sole the responsibility of the authors and do not necessarily represent the official views of NCMHD- NIH." No conflict of interest to report.

A-280 Intervention mapping: Integrating the academia and community for chronic diseases self-management

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Background & Objectives: In Puerto Rico chronic diseases such as cardiovascular diseases and diabetes are the leading causes of mortality and morbidity. Culturally appropriate interventions to increase patient's skills to manage their diseases are needed. The objectives of this project were to: 1) develop a culturally-tailored intervention to support chronic disease self-management in the community through an intervention mapping (IM) approach, and 2) evaluate the use of IM strategy in the community. Methods: As part of a partnership between the UPR School of Medicine and the Piñones community, a working group, consisting of eight community members with chronic diseases, two lay community health workers (CHWs) and four members of the academia, met on a weekly based for 12 weeks to develop an intervention to increase patient's knowledge, self-efficacy, and self-management practices of their chronic conditions. The six fundamental steps of IM were applied including: conduct a needs assessment; create matrices of change objectives; select theory-based intervention methods; organize methods and applications into an intervention program; plan for adoption, implementation and sustainability of the program; and generate an evaluation plan. Results: Priority areas were identified and a community intervention was developed including an evidence-based intervention carried out by CHWs, followed by weekly home visits for six weeks after the initial training. A pilot study to test the intervention feasibility is ongoing. Conclusion: IM facilitated the identification of individual, behavioral, environmental factors, and potential determinants of change and the selection of the most appropriate interventions to be implemented in this community. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This project was supported in part by the Puerto Rico Clinical and Translational Research Consortium, Grant 8U545MD007587-03 and Endowed Health Services Research Center, Grants 5S21MD000242 and 5S21MD000138, National Center of Minority Health and Health Disparities, National Institutes of Health.

A-281 Community health workers: Facilitating the translation of scientific interventions to the community

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Background & Objectives: Lay community health workers (CHWs) have an active role in the elimination of health disparities. The integration of interdisciplinary teams in the training of CHWs may straighten the effectiveness of this strategy in the community. Objective: To examine the outcomes and experience of a participatory project to prepare CHWs as a community resource aimed to the translation of evidence-based interventions for self-management of chronic diseases into the community. Methods: We worked with an existing partnership between the University of Puerto Rico (UPR) School of Medicine and the Piñones community, local organizations, and churches leaders to identify and train lay CHWs. In collaboration with the UPR Family Medicine Residency Program and the Puerto Rico Department of Health, CHWs were trained in core competencies using the CDC's Community Health Workers Sourcebook Training Manual as well as leaders of "Tomando Control de su Salud", an evidence-based intervention for disease management developed by the Stanford University. In addition, training in other topics such as CBPR, participant recruitment and retention, and health education delivery strategies were provided. Results: After the training sections, CHWs improved significantly their health knowledge and skills, became more confident and facilitated the implementation of evidence-based interventions in the community impacting underserved individuals with diabetes and hypertension. All participants evaluated the training and the CHWs intervention as excellent resources. Conclusion: Partnership between the academia and the community increased local capacity to implement evidence-based interventions in the community. The acquired skills enabled the integration of CHWs in other CBPR initiatives. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was supported partially by the Puerto Rico Clinical and Translational Research Consortium, Grant 8U545MD 007587-03 and Endowed Health Services Research Center, Grants 5S21MD000242 and 5S21MD000138, National Center on Minority Health and Health Disparities, National Institutes of Health.

A-282 Serial Nosocomial Bacterial Counts Associated to Ventilator associated Pneumonia in Children

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Background & Objectives: The aims of this pilot study were to evaluate the oral health status and dental plaque bacterial counts of pediatric patients with endotracheal intubation admitted to the Intensive Care Unit at baseline and at the end of their PICU stay and its association with the development of VAP and hospital acquired infections under the current oral care protocol. Methods: A pilot sample of 30 intubated children was recruited at PICU during the period of March-October 2013.The study protocol consisted of collection of serial dental plaque and saliva samples every 5 days until patient was extubated. An oral exam for critical care patients (BRUSHED) was performed. Dental plaque samples were evaluated for nosocomial bacteria and for cytokines. Statistical analysis was performed using descriptive statistics. Results: 29 subjects participated in the study; 15 female, 14 males, age range 8 months-18 y/o. BRUSHED oral examination, 19/29 had debris, 5/29 xerostomia, 3/29 gingivitis, 3/29 bleeding, 3/29 ulceration, 2/29 redness, 1/29 halitosis, 1/29 leukoplaquia, 2/29 chelitis mainly related to admission condition; 40% (20/29) had normal oral exam. Range of stay days intubated were 5-35. Nosocomial bacteria were present in 34% of patients; bacteria were Ac Baumanni complex (2/29), Keibsella Pneumonia (2/29), Serratia (1/29), E fecailis (1/29), Stafilococcus aureus (4/29) mainly related to long of stay. Normal flora or NG was present in 76% of the patients. There was a relation between tracheal and dental plaque nosocomial bacteria. Conclusion: Dental plaque bacteria are an important source of reservoir of infection on intubated patients.

A-283 CYP2C9*8 frequency distribution in Puerto Ricans: Implications for warfarin dosing

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Background & Objectives: Warfarin is an oral anticoagulant that requires individual monitoring since serious adverse events are common. CYP2C9 encodes for the enzyme mainly responsible of S-warfarin's metabolism. Polymorphisms in CYP2C9 have been previously found to be strongly associated with observed warfarin dose variability in different populations, but not in Caribbean Hispanics. Caribbean Hispanics originated as a result of a complex admixture among Caucasians, Africans and Amerindians ancestors-a characteristic that should be considered for warfarin management. The rare loss-of-function CYP2C9*8 allelic variant is reportedly more prevalent among individuals with African heritage. Since Puerto Ricans has a significant contribution of African ancestry in their genetic backgrounds, this cross-sectional study was aimed to determine the frequency of CYP2C9*8 in a cohort of 150 Puerto Rican patients undergoing warfarin therapy. Methods: DNA specimens were extracted and genotyped for the CYP2C9*8 using a PCR-based Taqman genotyping assay. Results: We found 3 heterozygous for the CYP2C9*8 variant in our study cohort, corresponding

to a minor allele frequency of 1% (95%CI: 0.0026-0.031). The observed frequency met Hardy-Weinberg equilibrium. Allele frequency in our cohort was found to be significantly lower than that from a previous report in African-Americans (0.01 versus 0.047, respectively, p=0.045 by two-tailed z-test), with a carrier frequency of 1 in 50 (Puerto Ricans) versus 1 in 11 (African-Americans). Conclusion: Due to the CYP2C9*8 prevalence found among Puerto Ricans, we concluded that this variant should be included in any pharmacogenetic-guided algorithm for warfarin dose predictions in this population. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Approved by University of Puerto Rico, Medical Sciences Campus Institutional Review Board protocol A4070109. Supported by NIH grants# 5SC2HL110393 (NHLBI) and grant# G12RR-03051 (RCMI- NCRR).

A-284 ARE-mediated post-transcriptional regulation of human IL-3 in T-cells

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Background & Objectives: Interleukin-3 (IL-3) is a lymphokine that supports a broad range of hematopoietic cells and is involved in the body's inflammatory response. IL-3 is expressed endogenously in stimulated T-cells after activation of a signal transduction pathway. Aberrant expression of this lymphokine is implicated in chronic inflammation and several types of cancer. IL-3 is a member of a class of transiently expressed mRNAs that harbor Adenosine/Uridine-Rich Elements (ARE) in their 3'-Untranslated Regions (3'-UTR). Previous results from our laboratory suggest a regulatory role for the IL-3 AREs. Methods: We identified four different ARE clusters within the IL-3 3'-UTR. To understand the role of these sequences in translational regulation, we conducted site-directed mutagenesis to interrupt each ARE cluster. Firefly luciferase reporters harboring different mutations in the ARE clusters were transfected into HeLa and Jurkat cell lines. We also investigated the possible role of the 3'-UTR in the interaction between the IL-3 mRNA and ribosomes via polysome profile analysis. Results: The luciferase chimeras lacking the IL-3 ARE region showed an increase in luciferase activity, as did chimeras harboring a mutation in the nonamer ARE (ARE3) region. Our polysome profile analysis showed a reduced ribosomal interaction in chimeras harboring the IL-3 3'-UTR. Conclusion: The reduced protein expression suggests that AREs can inhibit the translational capability of the IL-3 transcript; the nonamer class ARE sequence appears to be mainly responsible for the 3'-UTR-exerted repression. Furthermore, the results suggest that translational repression is chiefly carried out via a reduced interaction between the mRNA and ribosomes. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was supported by U54 CA96297, PR-LSAMP, UPR-MSC and RISE 2R25GM61151.

A-285 Clinical complications of implant prostheses: relationship to dental arch and opponent occlusion

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Background & Objectives: Dental implant treatment is an important restorative modality with documented long term success for replacement of missing teeth. However, there are clinical complications that can affect the functional and esthetic results. The aim of this study is to describe complications and compare their relationship with opponent occlusion and dental arch at the UPR School of Dental Medicine (UPRSMD) from 2006-2013. Methods: A cross-sectional clinical study was conducted among patients who had implants placed and restored. Participants were examined, complications recorded and records were reviewed by trained evaluators. Chi-square test and multivariate logistic regression (adjusting for age and gender) was performed to associate opponent occlusion and dental arch vs. prostheses complications (α=0.05). Results: Seventy-six patients aged 27-89 years were examined. Information was collected on 111 prostheses (83 single crowns, 22 FPDs and 6 overdentures), 64 placed on females and 47 on males. Complications were seen in 37% of all prostheses. In multivariate analysis, having an opposing FPDs was associated with almost a 3-fold increase in odds of complications (OR=2.93, 95%CI: 1.13-7.57), compared with natural teeth (reference). There was no association between position of implant-supported prosthesis in the arch in univariate (chi-square p-value=0.89) or in multivariate analysis (ORmaxilla vs. mandible= 1.27, 95%CI: 0.54-2.98). Conclusion: In this study, having a FPD opposing the implant prosthesis was associated with a significant increase in odds of complications, compared to natural teeth; there was no association between arch position of the prosthesis and complications. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Authors do not report any conflict of interest in this study. IRB Approved # A7360109

A-286 Clinical complications of implant prostheses: related to parafunctional habits and date of placement

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Background & Objectives: Dental implants are considered standard treatment to rehabilitate patients. It is important to understand the complications associated with implant prostheses. The aim of this study was to calculate the prevalence of prosthetic complications and its association with parafunctional habits and date of placement of prosthesis at the UPR School of Dental Medicine (UPRSDM) from 2006-2013. Methods:

A cross-sectional clinical study was conducted among patients who had implants placed and restored. Participants were examined, complications recorded and records were reviewed by trained evaluators. Chi-square test and multivariate logistic regression (adjusting for age and gender) was performed to associate parafunctional habits, and date of prosthesis placement vs. complications (α=0.05). Results: Seventy-six patients aged 27-89 years were examined. Information was collected on 111 prostheses (83 single crowns, 22 FPDs and 6 overdentures), 64 placed on females and 47 on males. Complications were seen in 37% of all prostheses. There was no association between parafunctional habits and complications in univariate (chi-square p-value=0.95). There was no association between parafunctional habits and complications in multivariate analysis (ORBruxism vs None=0.98, 95% CI: 0.31-3.10; ORClenching vs None=1.23, 95% CI: 0.41-3.68). Additional, there was no association between date of placement and complications (OR-graduation time vs all other months=1.01, 95% CI: 0.45-2.28). Conclusion: There was no association between parafunctional habits and complications of implant-supported prosthesis. The frequency of complications was not different if the prosthesis was placed close to the graduation time (April/May/June), compared to all other months. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors do not report any conflict of interest in this study. IRB Approved # A7360109

A-287 Increased Human Apolipoprotein CIII in Plasma Samples of Hispanic HIV positive Cocaine users

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Background & Objectives: Drug abuse is a major risk factor in the development of HIV,and comprises approximately 16% of the total USA population. Drugs of abuse can also exacerbate many neurological conditions of HIV infected patients. To determine if cocaine induces changes in the plasma proteome of HIV-positive woman in Puerto Rico, we compared the plasma proteome of a sample of HIV-positive woman with and without cocaine comorbidity. Methods: Plasma samples from 12 HIV-seropositive Hispanic women were selected for this study; 6 HIV-seropositive women and 6 HIV-seropositive women positive for cocaine. After depletion ,100 μg of proteins were analyzed by SDS-PAGE. After in-gel digestion, peptides from HIV+ cocaine- were labeled with 16O and peptides from HIV+ cocaine + were labeled with 18O. The paired labeled samples were subjected to LC-MS/MS analysis. Protein identification was carried out using Proteome Discover and quantificated using QuiXoT. Statistical analysis of the data was done on the basis of a random-effects model that includes different sources of variance: at the spectrum-fitting, scan, peptide, and protein levels. Significance was determined using the paired t-test. Results: Over 400 proteins were identified. After statistical analyses, two proteins were significantly different between the two groups, Apolipoprotein CIII and Vitamin D binding protein. Upon validation by ELISA, a significant increase of Human Apolipoprotein CIII (APOC3) was found in plasma of Hispanic women HIV-infected cocaine abusers compared with HIV-infected cocaine-negative women. Conclusion: Determination of plasma levels of Apolipoprotein CIII warrant further studies as potential surrogate plasma markers of stroke in HIV-positive cocaine users. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Sponsored by SNRP-NINDS-1 -U54NS431, RISE G12RR03051 , INBRE P20RR016470-12 and NIMHHD 8G12-MD007600 Translational Proteomics Center. Laboratory space provided by Grants U54 from the Comprehensive Cancer Center.

A-288 Patriarchal Discourse and HIV transmission among women living in Puerto Rico

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Background & Objectives: According to the CDC, in 2010 1,111 new cases of HIV were reported in Puerto Rico. Out of these, 274 were women mainly infected by heterosexual intercourse. It has been documented how HIV has disproportionately affected women in US. However, there is limited the analysis on how patriarchal culture may influence the spread of HIV among women. Objective: This research seeks to understand how patriarchal discourse could impact transmission and adherence to treatment in Puerto Rican women living with HIV/AIDS (PRWHA). Methods: A secondary analysis of data gathered from a more complex project about behavioral manifestations of HIV/AIDS stigma among health professionals was conducted. Three focus groups with PRWHA (n=32) were qualitatively analyzed using the gender and HIV emergent dimension. Researcher triangulation was performed. Results: Verbalizations were related to: blame towards PRWHA for not using protection during sexual intercourse, HIV/AIDS as a punishment for PRWHA as a result of other "promiscuous" women having unprotected sex with their partners, and HIV/AIDS stigma against women's using intravenous drugs for "not being in their house". Results: Stigma towards PRWHA was related to the transmission route, being more relevant those linked to the patriarchal discourse that prevails in Puerto Rican society (PRWHA infected through "promiscuous" sexual behaviors and intravenous drug users). The verbalizations point out an HIV discourse with a female body and with harmful results for "those women at home", infected by "those women on the streets". Conclusion: Research and interventions with women

should consider a gender/cultural perspective to prevent HIV/AIDS transmission. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This research was made possible by NIH grant #3R01MH080694-04S1, the Center for Social Research and the Beatriz Lasalle Graduate School of Social Work at the University of Puerto Rico.

A-289 Vitamin D Status and Obesity in a Clinic-based Sample from Puerto Rico

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Background & Objectives: There is a high prevalence of vitamin D deficiency and obesity in the US and Puerto Rico. Studies show that vitamin D status is inversely correlated to body weight and fat. Furthermore, vitamin D status, measured by serum levels of 25(OH)D, may be implicated in the development of obesity-related co-morbidities. To our knowledge, data in Puerto Rican individuals are scarce. The aim of the analysis is to compare serum 25(OH)D levels across obesity status in a clinic-based sample from Puerto Rico. Methods: Age, gender, serum 25(OH)D levels, weight and height are currently being extracted from approximately 2,000 medical records of patients attending a private Endocrinology and Metabolism Clinic. BMI was calculated as kg/m2 and individuals were categorized as normal weight (<25 kg/m2), overweight (25–29.9 kg/m2) or obese (>30 kg/m2). ANOVA was used to compare mean serum 25(OH)D levels across BMI groups. Results: Preliminary results in 112 individuals (mean age 54±17 y; 68% female) show a prevalence of obesity and overweight of 35% and 42%, respectively. Mean serum 25(OH)D levels were 23.9±8.6 ng/ml, with 76% of subjects having low vitamin D status (<30 ng/ml). Mean serum 25(OH)D were 25.5±9.9 ng/ml in normal weight, 23.3±8.0 ng/ml in overweight, and 23.4±8.4 ng/ml in obese individuals, with no significant differences among groups. Conclusion: Most individuals were overweight or obese and had low vitamin D status. Overweight and obese individuals appeared to have lower vitamin D status than normal weight individuals, but these results must be confirmed with the final sample.

A-290 Suicide Trends Among the Elderly in Puerto Rico: Evaluation of the Poison Center Data

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Background & Objectives: It is known that although the elderly perform less suicide attempts, they have a higher completion rate. The most common substances reported in the US data are over the counter (OTC) analgesics, minor tranquilizers and antidepressants. However, trends and demographics in Puerto Rico have not been described. Objective: To evaluate types of medications most frequently involved and the medical outcomes related to suicide attempts among a cohort of Puerto Rican elders. Methods: We performed a retrospective analysis of the Puerto Rico Poison Control Center (PRPCC) Data System. 200 cases per year from 2004-2011 were examined. Results: The average age of suicide attempts was 72 y/o with a 1:1 gender distribution. 14% (213) of the cohort of 1,600 cases was reported as suicidal attempts. 63.3% required admission to a medicine ward and 9.4% required ICU admission for medical management. Death rate was 3.3% and the most common drugs involved were: cardiovascular, pesticides and sedatives. In this cohort, substances used are different to what is reported in the US literature. Conclusions: The data describes the frequency, types and outcomes of suicide attempts among a cohort of 1,600 Puerto Rican elders. We identified a special concern for pesticide use which resulted in significant morbidity and mortality. Health care professionals must be aware of problems associated with suicide in the elderly in order to develop treatment and prevention strategies. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): "This research was made possible by Grant Number R25 RR17589 from the National Center for Research Resources (NCRR)/ National Institute of Minority Health and Health Disparities (NIMHD) , a component of the National Institutes of Health (NIH). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NIH."

A-291 Blood cell development miRNA in plasma a novel potential biomarker for Acute Myeloid Leukemia

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Background & Objectives: micro-RNA's (miRNA) are small noncoding RNA. Published data support their roles as regulators of hematopoiesis and gene expression modulation affects their expression levels. Furthermore, miRNAs are detected in the blood stream. Hypothesis: Circulating miRNA's expressions levels associated with blood cell development will discriminate between AML and cancer free participants. Methods: Case-control (age-gender match, 1:1) study design using a plasma repository of AML and cancer free participants. miRNA isolation of 10 participants was done using miRNeasy kit. The Bio-analyzer was used for miRNA integrity and quality. Expression levels and analysis was determined with miScript miRNA PCR Array (Qiagen) and STATA (software). Results:Gender distribution: 80% female / 20% males. Mean age: 59 (range 32 to 66). Cytogenetic risk classification: 40% low, 40% high and 20% intermediate. The most relevant findings where, AML's: down regulation of miR-106-5p, 58% , and miR-146-5p, 51% ($p<0.07$) both related to megakaryopoiesis. Down regulation of miR-128-3p, 63%, increased miR-181-5p, 12% ($p>0.07$) both related to myelopoiesis. Conclusion: We identified mar-

ked differences in plasma miRNA expressions levels between AML and cancer free participants. First and foremost, our preliminary data analyses are been consistent with known AML disease published pathways. Recruitment is ongoing in order to increased sample size and for further confirmation of these preliminary findings Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): "The project described was supported by Grant Number R25RR017589 from the NCRR / R25MD007607 from the NIMHD. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health."

A-292 ISLET 1 gene mutations related to Congenital heart disease (CHD) in Puerto Rican pediatric patients

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Background & Objectives: CHD is an important component of pediatric cardiovascular disease and is a major fraction of clinically significant birth defects in Puerto Rico. The genetic bases of the cardiovascular system are complex; with the ISLET 1 (ISL1) transcription factor having a fundamental role in cardiac morphogenesis, making it a candidate to consider as a cause for CHD. Studies have shown that a specific single nucleotide polymorphism (SNP) within the ISL 1 gene, rs1017, is strongly associated to CHD in African Americans; with each additional copy of the mutated allele (T allele) increasing significantly the risk for CHD. Methods: We report the rs1017 genotypes of 12 Puerto Rican pediatric patients affected by CHD (case group), and 7 Puerto Rican healthy pediatric patients (control group). Results: Three cases were homozygote for the wild type allele of the rs1017 SNP (C/C genotype), while the other nine cases were heterozygote (C/T genotype). Four out of 7 controls had two copies of the mutated allele (T/T genotype), while two had C/C genotype. Only one control had C/T genotype. Conclusion: The C/T genotype was seen more commonly in the case group while the T/T genotype was more frequent in the control group. A different relationship between the ISL 1 gene SNP, rs1017 and the incidence of CHD in Puerto Rican patients might exist from the one previously reported in African Americans. Genotype analysis for rs1017 of a larger sample is being conducted to establish a better relationship or a causal association between ISL gene SNPs and CHD in Puerto Ricans.

A-293 Translating the ICAS Home-based Environmental Intervention to Community Environments in Puerto Rico

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Background & Objectives: Several environmental remediation interventions directed to reduce asthma exposure to allergens among inner-city residents have been published. Most of these interventions have only been tested in research settings, so their effectiveness in reducing allergens and resulting asthma morbidity has not been well tested in community settings where resources, time and personnel are often scarce. Methods: The authors describe the process followed by La RED de Asma Infantil de Puerto Rico in adapting the Inner-City Asthma Study (ICAS) Environmental Intervention for use in community settings in Puerto Rico without compromising fidelity and the intervention effectiveness. The key modifications and adaptations to the ICAS protocol included: a) reduce the number of home visits from 5-7 to three over 12 months, b) reduce the number of educational modules to 2, c) plus adding a third visit to address other associated issues. We analyzed data from 180 children with moderate to severe asthma of two housing projects that received a home environmental assessment, skin testing, the adapted home environmental intervention, and a health survey that assessed the exposure of these children to common allergens. Results: Reductions of home allergen and ETS exposures, and other exposure factors were significant for molds ($p=0.004$); pets($p=0.045$); ETS-home ($p=0.01$); use of special mattress covers($p<0.001$), pillow cover($p<0.001$). Conclusion: The authors conclude that the adapted home environmental intervention could be implemented in our setting, and that it was effective in reducing exposures to home asthma allergens. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The work described here was supported by a grant from The Merck Childhood Asthma Network, Inc.

A-294 Risk factors associated with the development of Diabetic Ketoacidosis among children and adolescents

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Background & Objectives: Diabetic ketoacidosis (DKA) is one of the most feared complications of Diabetes Mellitus (DM) type I. DKA prevalence in the pediatric population in the United States is 21.1%, and its frequency at onset (De Novo) is 29.4%. Such prevalence and the risk factors for developing DKA have not been studied in the Puerto Rico pediatric population. Our objective in this case- control study was to determine the risk factors associated with the development of DKA in patients admitted at three hospitals (two of them pediatric hospitals). Methods: DKA patients were identified upon their admission at the Pediatric Intensive Care Unit and controls (DM type 1 patients with no history of DKA for the last 6 months) were recruited at two pediatric endocrinology clinics. An anonymous questionnaire was given to patient's caretakers, gathering infor-

mation about: demographics, family history, diabetes health maintenance and disease complications. Results: We were able to recruit 53 controls and 70 cases admitted with DKA. 21/70 (30%) patients had "de novo" DM type I upon their admission with DKA. When clinical history was analyzed, admitted patients had more risk factors for DKA development (86%) than controls (69%). Control patients had more knowledge (83%) about the health complications associated with DM type I than patients admitted with DKA (59%). Conclusion: This study demonstrates that a good educational plan for diabetes management in the pediatric population is essential for avoiding or decreasing DKA development in patients with DM type I. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Authors want tho acknowledge health caregivers and personnel at the University Pediatric Hospital, San Jorge Children's Hospital, San Francisco Hospital, and at the Endocrinology Clinics to their help provided in the recruitment process. Also we want to acknowledge patient's caretakers for their time to fill the questionnaire.

A-295 Using video laryngoscopy for the performance of a Nasotracheal and Orotracheal Retrograde Intubation

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Background & Objectives: Difficult airways are a commonly seen complication in not only poly-traumatized patients but also in the general population depending on the reason the patient presents itself into the OR. We are presenting a technique to describe retrograde intubation under direct visualization utilizing a guide wire after being inserted into the cricoid cartilage, evaluating using the direct video laryngoscopy. This is the case of a 19yr male patient taken to OR for a left forearm intramedullary nailing with history of a previous difficult airway when operated under GETA. Methods: Patient was sedated with midazolam and dexmethomidine, after that point local anesthesia was administered at the site of the cricoid cartilage, using a central line kit, the cricoid cartilage was puncture until air was seen on the syringe, laryngoscopy using the video laryngoscope was performed then a guide wire was introduced via the needle until visualized using the video laryngoscope and until it reached the outside environment via the nasal cavity. A 7.0 ET tube was inserted using the wire and tube was observed to pass the vocal cords at which time laryngoscope was removed. Results: After passing the ET tube adequate, fast and harmless intubation was done, which was confirmed by good CO2 curve as well as bilateral breath sounds. Extubation was done without any complication. Conclusion: The use of direct video laryngoscopy in combination with retrograde intubation is a new technology that can be performed in the setting of difficult airways, which needs fast and accurate intubation, which allows for at the moment confirmation that the procedure is successfull. It avoids wrongfull insertion of the ET tube, which can lead to delays in treatment.

A-296 Epidemiology of Stroke in Puerto Rico

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Background & Objectives: Cardiovascular disease is the leading cause of death in Puerto Rico (PR), with stroke being the fourth cause of death in the United States and mainly responsible of serious long-term disability in people. There is limited information concerning the epidemiology of Stroke in PR. This study analyzed demographic characteristics, risk factors, presenting symptoms and health management from patients hospitalized with a stroke diagnosis in Puerto Rico. Methods: We examined data from the PR Cardiovascular Surveillance which is based on a systematic review of medical records in 22 hospitals during the years 2007, 2009 and 2011. Categorical and continuous variables were analyzed using descriptive statistics. In addition, Pearson's Chi-square was used to evaluate the association between gender and outcome variables. Results: The total of patients hospitalized with a stroke diagnosis was 5,004 during the study period. Most patients were between the ages of 65-84 years (53%) and were women (55%). In-hospital death rate was slightly higher in women (10%) than men (9%). The first brain image showed that 80% of cases were non-hemorrhagic stroke. The final diagnosis for the 50% of the cases was ischemic stroke. Weakness (64%) was the most prevalent stroke-related symptom. A statistically significant difference ($p<0.001$) was observed in the prevalence of hypertension between men (79%) and women (82%). In general, secondary prevention practices were lower in women than men. Conclusion: The results highlight several gender differences in the stroke care management. Additional studies focused in health disparities are needed to better understand stroke health care in Puerto Rico. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This study was supported partially by the University of Puerto Rico Medical Sciences Campus, and the Endowed Health Services Research Center, Grants 5S21MD000242 and 5S21MD000138, National Center on Minority Health and Health Disparities, National Institutes of Health.

A-297 Hearing Handicap Inventory for the Elderly Screening version Puerto Rican Adaptation

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Background & Objectives: Age related hearing loss is the most common type of hearing loss in older persons. It is a disabling problem leading to communication disorders and social dysfunction. The Hearing Handicap Inventory for the Elderly – Screening version (HHIE-S) is designed to be used as a screening tool for hearing loss in older persons. The need to eliminate the hearing loss health disparity within this popula-

tion is well established. To the best of our knowledge, no such validated culturally adapted instrument is available for hearing screening in Puerto Rico. The objective of this study is to adapt and validate a culturally and linguistically Puerto Rican Spanish version of the HHIE-S. Methods: Cross – cultural adaptation was be performed using previously established guidelines. The process involved an expert committee review, back translation, original author evaluation and a pretesting. The Puerto Rican Spanish version of the HHIE-S was pre – tested using the probe technique with a convenience sample of thirty participants (women = 22, men = 8) from community dwelling older persons. Results: A reliability analysis was carried out to assess the internal consistency of the Puerto Rican Spanish version of the HHIE-S. Results showed internal consistency demonstrated to Cronbach's alpha of .935. Conclusion: The Puerto Rican Spanish version of the Hearing Handicap Inventory for the Elderly proved to be a reliable hearing screening tool for early identification of older persons with unrecognized hearing handicap. The HHIE – S is an adapted tool that will be validated in the Puerto Rican elderly population. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This work was partially supported by the National Institute on Minority Health and Health Disparities of the National Institutes of Health under Award Number R25MD007607 and by grants from the National Institutes of Health (NCRR Award Number U54-RR 026139-01A1 & NIMHD Award Number 8U54-MD 007587-03) to the Puerto Rico Clinical and Translational Research Consortium (PRCTRC) at the University of Puerto Rico, Medical Sciences Campus.

A-298 A Proposal for an Individualized Pharmacogenetic-Guided Warfarin Dosage Regimen for Puerto Rican Patients Commencing Anticoagulation Therapy

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Background & Objectives: Several investigations have been conducted to predict effective warfarin doses in multiple populations using pharmacogenetic-guided algorithms, but not in Caribbean Hispanics. This study was aimed at predicting individual warfarin doses in Puerto Rican patients commencing anticoagulation therapy, using a pharmacogenetic algorithm and pharmacokinetic-pharmacodynamic simulations. The derivation of a pharmacogenetic dose-refinement algorithm to predict warfarin-dosing after 3rd-day of therapy was also aimed. Methods: A retrospective, observational, pharmacogenetic study was conducted in 138 male patients on warfarin from the VACHS. Stepwise multiple-linear regression analyses were performed using log-transformed warfarin-doses and combining genotyping with other relevant clinical and demographic variables, all available at the initiation of therapy. Final algorithm for dose initiation was also based on estimated warfarin half-lives according to individual CYP2C9 genotypes. Predictability was assessed by using WinNonlin® one-compartment/indirect response PK-PD simulations. Results: A pharmacogenetic algorithm for 3–day initial dosing that included clinical/genetic information was derived and explained 48% of the dose variability. Individual genotype-adjusted PK-PD simulations of INR responses fall within the target range in 92% of cases, confirming good predictability. A pharmacogenetic-guided revision dose algorithm after 3rd-dose was also developed and accounted for 76% of observed variability, after incorporating lnINR at day 4 and initial doses for days 1-3. Conclusion: Pharmacogenetic algorithms that incorporate clinical, INR-measurement, admixture and genetic factors to predict initial dosing over the first week of therapy were developed and tested in a cohort of Puerto Rican patients on warfarin. Further studies are warranted to validate these findings and determine superiority of the pharmacogenetic approach over current practice. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): This investigation was supported in part by a grant from the National Heart, Lung and Blood Institute (SC2HL110393) and Research Center in Minority Institutions (RCMI) grants from the National Center for Research Resources (2G12-RR003051) and the National Institute on Minority Health and Health Disparities (8G12-MD007600) from the National Institutes of Health (NIH). We also thank support from the Biostatistical Core of the Puerto Rico Clinical & Translational Research Consortium (PRCTRC) through grant# 8U54MD007587 (NIMHD-NIH). Approvals were granted by the corresponding Institutional Review Board (IRBs) at the UPR-MSC (#A4070109, continuing review approved in February 12th, 2013) and the VACHS (#00558, continuing review approved in November 4th, 2012). The IRB office at UPR-MSC (IORG000223; Federal-wise Assurance #FWA00005561) is approved by the Office for Human Research protection (OHRP), Department of Health and Human Services. Amendments to the approved clinical protocol were submitted to the corresponding IRBs of the VACHS and the University of Puerto Rico Medical Sciences Campus (UPR-MSC) Human Subjects Review Committees, respectively, for review and approval of changes in compliance with institutional regulatory requirements.

A-299 Anabolic Steroids Decrease Social Play Behavior and Increase Mounting Behavior in Juvenile Male Rats

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Background & Objectives: Rough-and-tumble play emerges shortly after weaning and depends upon differential exposure to testosterone during the perinatal period. Reaching adulthood, rough-and-tumble play starts to decline and is replaced by motivational and consummatory components of sexual beha-

vior. Most studies show that deprivation of androgens attenuates social play. However, there is no research on how supraphysiological doses of synthetic androgens affect this behavior. In this study we aim to assess the effect of the anabolic androgenic steroid (AAS), 17α-methyltestosterone (17α-meT) in the development of rough-and-tumble play into sexual behavior. We expect that such exposure will decrease rough and tumble, accelerating the development of mature sexual competence. Methods: Juvenile male rats (PN-28), received daily injections of 17α-meT (7.5 mg/kg), and play was observed at two different time points: at PN-35 and at PN-45. Parameters scored were pouncing, pinning, boxing, wrestling, and mounts. Results: In the absence of AAS, all play behaviors where more frequent at PN-35, while mounts showed higher frequencies at PN-45. Daily 17α-meT injections from PN-28 to PN-35 significantly decreased pinning and wrestling, whereas a tendency to increase the frequency of mounts was observed. Daily 17α-meT injections from PN-28 to PN-45 revealed tendencies to decrease pouncing, and produced a significant increase in the number of mounts. Conclusion: Our results suggest that early AAS exposure decreases rough and tumble play and sets forward the transition to a more mature sexual behavior. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): NIH-NIGMS (5R25GM097635-02 and 8P20GM103475-12)

A-300 Cuidado no-instrumental en fisioterapia durante el encuentro clínico

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Background & Objectives: Las investigaciones sobre cuidado no-instrumental en fisioterapia se han realizado en el contexto de servicios ambulatorios y pacientes hospitalizados. El objetivo de este estudio fue explorar el significado, desde la perspectiva del paciente que recibe servicios en el hogar, del cuidado no-instrumental en fisioterapia. Methods: Se utilizó un diseño cualitativo de análisis fenomenológico interpretativo (AFI). Se hicieron entrevistas semi-estructuradas a profundidad a una muestra con propósito de 6 pacientes que reciben servicios de fisioterapia en el hogar, utilizando una guía de preguntas y notas de campo. Dichas entrevistas fueron transcritas y analizadas utilizando el AFI. Results: Del análisis final emergieron tres temas principales: el fisioterapista brinda afecto; 2) la capacitación profesional del fisioterapista; y 3) la atención es de valor incalculable. Este estudio sugiere que los pacientes perciben el cuidado no-instrumental como aquel brindado por un fisioterapista que posee habilidades para trabajar con pacientes y que demuestra tener conocimiento acerca del trabajo que realiza. Interpretan que durante el encuentro, el cuidado no-instrumental promueve su participación activa en la intervención y es entendido como atención de valor incalculable en donde el fisioterapista demuestra interés en el paciente como persona y por su estado de salud; tiene buenos modales; le hace sentir confianza y tranquilidad; y le provee compañía, evitando la soledad y a su vez creando una sensación de bienestar. Conclusion: El cuidado no-instrumental es central en la experiencia vivida por el paciente. La ética del cuidado es percibida como responsabilidad y característica inherente al fisioterapista en el contexto de servicios en el hogar. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): Esta investigación fue requisito parcial para el otorgamiento de grado de MSPT de la Universidad de Puerto Rico, Recinto de Ciencias Médicas, de los dos primeros autores.

A-301 Acute Kidney Injury and Clinical Outcomes in Children and Adolescents Undergoing Cardiovascular Surgery

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Background & Objectives: Development of acute kidney injury (AKI) has been implied to be a risk factor for higher morbidity/mortality in critically ill patients. Data evaluating the association of AKI, using Acute Kidney Injury Network (AKIN) classification, and morbidity/mortality in pediatric patients undergoing cardiac surgery is scarce. We aimed to evaluate whether there is an association between AKI, defined by AKIN, and morbidity/mortality in pediatric patients undergoing cardiac surgery in our cardiac intensive care unit (CICU). Methods: A retrospective observational study was conducted with patients (0-21years) undergoing cardiovascular surgery admitted to our CICU from Nov 2011-Nov 2012. AKI was defined as increase in first morning serum creatinine > 0.3 mg/dL or increase 1.5-fold from baseline. Morbidity/mortality variables included death, days on mechanical ventilation and longer CICU stay. Descriptive statistics and logistic regression were used. Results: Ninety-one patients met inclusion criteria. 12 % of these patients died and 8.7% had AKI by AKIN classification. AKI was associated with increased time on mechanical ventilation ($p<0.05$) but not with death ($p>0.05$) or length of stay ($p>0.05$). Conclusion: In contrast to previous studies, no association was found between development of AKI and increased mortality or CICU length of stay.

A-302 Undiagnosed Developmental Delay in Pediatric Emergency Department Users

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Background & Objectives: An estimated 5-10% of global pediatric population has some form of developmental disability. In United States, 17% of children have a developmental or behavioral disability such as autism, mental retardation, or attention-deficit/hyperactivity disorder. Most children with developmental delays are not identified before 3 years of age or even before school entry. This denotes the higher proportion of children that are missed out during screening. Delay in

screening increases the level of dependence and disability of an individual and decreases the productivity of the community at large. The objective is to assess the rate of undiagnosed developmental delay on children with no previous history of developmental delay at the Pediatric Emergency Department (ED). Methods: This is a cross-sectional study with self-administered "Age and Stages Questionnaire" system at the ED including children aged 4 to 36 months without previously diagnosed neurodevelopmental disability. Results: Sixty one patients were surveyed in the ED, of which 45% screened positive for possible developmental delay between the ages of 4 to 36 months. Communication was the most common delay (27.8%), followed by fine motor skills (24.5%). Conclusion: The prevalence of positive screens among children with undiagnosed developmental delay suggests that children are not being identified in primary care settings. Future research should investigate if is due to lack of access to primary care or ineffective primary care screening practices, or parents' not seeking care even if it is available. Acknowledgements (Funding Sources, Conflict of Interests Disclosures, etc.): The authors have no conflict of interests, no funding sources, and no disclosures at this time.

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