ABSTRACTS*

• Oral Presentations •

O-001 Morbidity and mortality patterns of pedestrian injuries in Puerto Rico from 2000 to 2014

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Background/Objective: Due to pedestrian fatalities are the leading cause of traffic-related deaths in Puerto Rico and that there is a lack of pedestrian-safety legislation, we aimed to evaluate morbidity and mortality patterns of pedestrian accidents, by age. Methods: A cross-sectional study was conducted with 2,093 pedestrians admitted to Puerto Rico Trauma Hospital during 2000-2014. Patient data included: sociodemographic characteristics, trauma hours and days, drug use, specific injury area, ISS, GCS, and mortality. A logistic regression was employed to estimate the association between age and mortality. IRB approval was obtained on May 21, 2015 (#B0030115). Results: Most patients were males aged 35-64 years. Those pedestrians <16 years and >64 showed a greater rate of injuries during weekdays. All age categories ranging from 16-24 to 55-64 had the highest incidence of injuries during 8pm-4am. The largest proportion of ethanol was observed in patients aged 55-64 years (18%); marihuana, in the 16-24 age group (21%); and cocaine, in the age categories 25-34 years (19%) and 35-44 years (27%). Injured pedestrians aged 65-74 years had the highest proportion of open wounds of head/neck/trunk (5.02%). A great frequency of lower extremity fractures (51.30%) was presented in the 55-64 age group. Hepatic injuries (13.36%) commonly affected subjects <16 years. Patients in the >84 age group had 24.55 (CI 95%; 8.10, 74.41) times the risk for dying compared to patients in the youngest group. Conclusion: Given these findings, greater preventive measures must be tailored according to population age, considering pedestrian safety legislation, educational programs, and urban planning. Acknowledgements: This study received no external funding and the authors have no conflicts of interest to disclose.

O-002 Structural and Relational Analysis of Social Network: How these impact cancer patients' quality of life?

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The social network (SN) analysis intends to provide a means for understanding the role of social factors. There is evidence that SN characteristics have the ability to amplify or weaken health outcomes. This work aims to describe the SN characteristics of recently diagnosed cancer patients exploring its relations with their quality of life (QOL). A cross-sectional study was driven executing egocentric SN analysis after face to face interviews. Using STATA 13.0, 21 interviews were tabulated for univariate and nonparametric bivariate analysis. Results showed that SN of participants had in average 3.7 people with strong bonds and reciprocity. The SN of these patients was highly heterogeneous in terms of the roles reported and sex composition. Data suggested poor participations within groups and marked differences between their ideal SN and the SN currently reported. Bivariate analysis showed that the number of acquaintances was inversely related to quality of life of cancer patients; also those participating in more groups reported better quality of life ($p<.05$). Likewise, social support received was related to patients' QOL. Participants' life styles and income were also related to QOL but not to their SN. In conclusion, SN of the interviewed are large mostly heterogeneous with marked differences between the ideal SN and the current SN. Last, evidence suggests that SN characteristics are impacting their QOL providing a framework for action.

O-003 Developing Policies for Improving Quality of life of Hispanic among Informal Health Care Givers in Charge of Cancer Patients

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The quality of life (QoL) is one of the most relevant health issues to be attended by public policies and health practitioners. Indeed, one of the most vulnerable populations lacking policies that oversee their health are those taking care of patients suffering chronic diseases such as cancer. To promote healthy enviroments/behaviors QoL of informal care givers (ICG) was measure among a sample of Hispanics living in PR. QoL was then contrasted against socio-demographical information as well as support being received, health status and life styles of both patients and ICG. STATA 13.0 outputs show that ICG numbers of morbidities, burnout, being female, governmental medical insurance were significantly correlated to ICG's QoL ($p<.05$). Similarly cancer patient perception of lack of support and QoL was inversely correlated to ICG's QoL ($p<.05$). This data suggest that health policies within health facilities should closely observe women with low SES and higher number of health conditions. Also, unexpected result of inverse correlation between patients' QoL and lack of support with better ICG's QoL should be capture soon in the cancer treatment as QoL has been directly related to survival.

O-004 Bienestar y salud a través de la experiencia artística en mujeres con fibromialgia residentes en Lleida (España)

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Contexto y Objetivos: En la Facultad de Enfermería y la Unidad de fibromialgia se inició un proyecto de investigación con mujeres afectadas de fibromialgia. Objetivos: Comprobar si la creatividad y el arte pueden mejorar el bienestar y contribuir en el tratamiento de la fibromialgia. Empoderamiento. Aumentar su cultura artística. Realizar talleres de experimentación con diferentes artes plásticas. Mejorar la comunicación, reconocimiento y la percepción del bienestar. Elaborar obras artísticas para exponer en diferentes espacios de la ciudad de Lleida. Métodos: Se ha centrado en 7 sesiones quincenales de 90 minutos de duración en las cuales se realizaban una breve relajación dirigida y se impartía un tema artístico que se ponía en práctica en la misma sesión. La recogida de datos y análisis de la información se ha realizado a través de: Documentos de recogida de dados (ficha de características personales y sobre los años de evolución de la enfermedad, ficha de las aficiones, escala analógica de percepción del bienestar antes y después de las sesiones, escala de valoración del sueño-descanso. Fotografías, filmaciones y registros de audio. Notas de campo. Resultados: La creatividad y el arte han propiciado el bienestar en lo referente a la percepción del estado de salud y al descanso nocturno. También empoderamiento. Conclusiones: Los recursos para el bienestar ofertados por el sistema sanitario deben incluir referentes culturales y artísticos. Para ayudar a sobrellevar una enfermedad tan compleja como la fibromialgia puede ser de gran ayuda permeabilizar contextos educativos, sanitarios, sociales y culturales.

O-005 Is it about the Availability of Alcohol or is about the Community's Attitudes what increases Adolescent Alcohol Consumption?: Pathways for developing

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Adolescent Alcohol Consumption (AAC) is a global health problem that seriously impact morbidity and mortality rates not excluding community welfare. AAC is rarely assessed from the perspective of environmental/community factors for knowing how these impact the odds of consumption. This research intends to document environmental/community factors correlated to AAC. Using a self-administered questionnaire adolescents 16–19 years old provided information about their communities' alcohol availability and community attitudes towards AAC. A total of 213 adolescents participated in the study with a prevalence of AAC was .35 (n=75) during last month. Most participants (n=191) reported that within their communities there were 1-3 stores selling alcoholic beverages which open every day in 81.22% of the cases. The community attitudes towards AAC as reported by adolescent average 10 pts in a 0-20 pts scale (α=.72) showing moderate tolerance. After controlling for all factors explained above AAC's odds are increased by the number of store dispensing alcohol beverages, the frequency of days they are open and the perception of community's attitudes ($p<.05$). Thus to prevent AAC there is a need to work with the alcohol availability in the community as well as their attitudes.

O-006 Efecto del Ascenso del Nivel del Mar (ANM) y Desarrollo de un Plan de Adaptación y Mitigación al Cambio Climático en las Ciudades Costeras del Caribe

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El propósito principal de este trabajo es desarrollar un modelo conceptual que incluya crear un Plan de Adaptación basado en mediciones del impacto del ascenso del nivel del mar (ANM) y sus efectos en las comunidades y poblaciones costeras, en la infraestructura de salud y en la propagación de algunas enfermedades tropicales. Además, Se pretende presentar la utilidad de los Sistemas de Información Geográfica (SIG) en el diseño e implantación de un Plan de Adaptación y Mitigación (PAM) en el contexto de varias ciudades del Caribe (San Juan, Santo Domingo, La Habana, Kingston, Belice, Cancún, Punta Arenas, Puerto Limón, Nassau y Cartagena de Indias). Los indicadores de riesgo que se utilizaran para ver el efecto del ANM sobre estas ciudades son: cantidad de población afectada o en riesgo, número de carreteras impactadas, cantidad de hospitales y escuelas, área total afectada, cantidad de hoteles, comercio e infraestructura urbana. Las proyecciones de impacto se harán para 100 años sobre la base de un metro de ascenso del nivel del mar para el Caribe y para 500 años sobre la base de ascenso de 5 metros. Todas ellas se medirán a partir del año 2005 que fue la fecha en que el PICC presentó por primera vez sus proyecciones de ANM. El modelo de elevación digital usado para medir los impactos del ANM será el desarrollado por la NASA y que está disponible en la Web: http://flood.firetree.net/.

O-007 Factores asociados al uso de Xylazine ("anestesia de caballo") en Puerto Rico

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Trasfondo y objetivos: Se ha observado que el abuso de xylazine está relacionado a no tener hogar y a un pobre estado de salud en los usuarios de drogas de Puerto Rico. Se realizó un análisis secundario de la base de datos del Puerto Rico Drug Abuse Research Development Program II Study con el fin de estimar prevalencia de uso de xylazine en usuarios de drogas del área metropolitana, identificar factores de riesgo asociados al uso de xylazine, y determinar la magnitud de asociación entre el uso de xylazine y variables sociodemográficas como sexo, escolaridad, e historial de encarcelamiento. Métodos: Se realizó un análisis descriptivo. Se utilizaron tablas de contingencia 2x2 para evaluar asociación entre uso de xylazine y variables categóricas. Se evaluó un modelo de regresión logística múltiple con variables asociadas significativamente al uso de xylazine a nivel bivariado. Se calcularon PORs con intervalos de confianza al 95%. Resultados y Conclusión: Los hombres ($p=0.004$) y aquellos con historial de cárcel ($p<0.001$) fueron más propensos a utilizar xylazine que sus contrapartes. Se halló que, a mayor veces en tratamiento para adicción, más posibilidad de utilizar xylazine (1-2 veces: POR 1.96 IC95%: 1.05-3.55; 3 o más veces: POR 3.4 IC95%: 1.89-6.16). Dada la escasez de estudios relacionados al uso de xylazine en Puerto Rico, esta investigación es de suma importancia ya que expone los factores que identifican a los usuarios de xylazine. Asimismo, aporta información que puede ser utilizada para la creación de política pública y de estrategias de prevención.

O-008 Perfil de Salud del Adulto Mayor (65 años o más) en Puerto Rico en 2013

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Trasfondo y Objetivos: En las últimas décadas Puerto Rico ha experimentado un aumento significativo en la población de

adultos mayores. Este aumento hace necesario el desarrollo de un perfil de salud que permita crear servicios de salud que se ajusten a las necesidades particulares de esta población. Los objetivos de este estudio fueron: 1) Identificar las enfermedades más comunes entre los adultos mayores en Puerto Rico en 2013. 2) Evaluar la prevalencia y distribución de estas enfermedades por Sexo y Región. Métodos: Este estudio fue un análisis secundario de datos de compañías aseguradoras de salud en Puerto Rico. Se realizaron análisis de frecuencia de las enfermedades más comunes en total, y estratificadas por sexo y región geográfica. Resultados: Estos datos cubren 14,047,532 reclamaciones de 424,479 asegurados, de los cuales 247,556 (58.3%) eran mujeres. La edad promedio fue de 74.89 años. Las enfermedades más comunes para la muestra completa fueron: Hipertensión (70.2%), Desórdenes del metabolismo de los lípidos (62.2%), Diabetes (53.6%), Hipotiroidismo (35.1%) y Anemia (33.2%). Se presentarán las enfermedades más prevalentes estratificadas por sexo y región geográfica. Conclusiones: Estos datos sugieren prevalencias muy altas de enfermedades crónicas que pueden tener numerosas consecuencias negativas para la calidad de vida y la salud de estas personas, así como altos costos de salud para el sistema de seguros y para los mismos asegurados. Se recomienda mejorar y ampliar los servicios de prevención, detección temprana, control y automanejo de las enfermedades más comunes entre los adultos mayores. Agradecimientos: Agradecemos a la Secretaría Auxiliar de Planificación del Departamento de Salud de Puerto Rico por permitirnos el uso de la base de datos de las aseguradoras.

O-009 Prevalencia de Cáncer entre las personas de 65 años o más en Puerto Rico para el 2013

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Trasfondo y Objetivos: El cáncer es la principal causa de muerte en Puerto Rico. La incidencia de cáncer aumenta con la edad. Desde una perspectiva salubrista, es importante monitorear la prevalencia, distribución y costo de cáncer entre los adultos mayores. Los objetivos de este estudio fueron: 1)Evaluar la prevalencia de cáncer y sus tipos entre las personas de 65 años o más en Puerto Rico para el 2013 y su distribución por Sexo. 2)Reportar los costos de utilización de servicios para las aseguradoras y los asegurados. Métodos: Este estudio fue un análisis secundario de datos de compañías aseguradoras de salud en Puerto Rico. Se realizaron análisis de frecuencia y costos de los tipos de cáncer más comunes por sexo. Resultados: Analizamos 14,047,532 reclamaciones de 424,479 asegurados. Hubo un total de 102,548 con algún tipo de Neoplasma siendo 62,956 diagnósticos de cáncer, de los cuales 42.2% fueron mujeres. Los tipos de cáncer más comunes fueron: Próstata(39.4%), Colon y Recto(17.6%) y Seno(15.8%). El costo total para las aseguradoras en utilización de servicios de personas con diagnóstico de neoplasma maligno fue de $198,217,883.5; para los asegurados fue de $266,854,850.7. El costo facturado promedio para las aseguradoras fue $3,148.51; para los asegurados fue $4,240.71. Conclusión: La alta prevalencia y costos de cáncer en la población de adultos mayores, requiere un enfoque dirigido a la prevención, detección temprana y tratamiento de los tipos de cáncer más comunes. Agradecimientos: Agradecemos a la Secretaría Auxiliar de Planificación del Departamento de Salud de Puerto Rico por permitirnos el uso de la base de datos de las aseguradoras.

O-010 Tamoxifen-Mediated Recovery after Spinal Cord Injury is Sex-and Time-Dependent

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Background & Objectives: Spinal cord injury (SCI) is a devastating condition with no cure available. Trauma initiates a cascade of events resulting in loss of somatosensory perception and voluntary muscle movement. Any therapeutic intervention that would restore function should be multi-active; being able to target several detrimental events. The approach must be of easy delivery, effective in both sexes and, with a realistic therapeutic window of function. We propose the use of Tamoxifen (TAM), an FDA approved drug, which exerts neuroprotection after SCI in female rats. This study aims to establish if TAM produces a neuroprotective response in male animals. We hypothesized that TAM treatment 24 hours after SCI will favor locomotor recovery. Methods: Male Sprague Dawley rats received a SCI contusion at the T9 level. Tamoxifen was administered at 0,6,12 and 24 hours after SCI. Locomotor recovery was assessed weekly for 35 days post-injury (DPI). Terminal analysis evaluated myelin preservation and the expression of neuronal or glial proteins at 2,7,14,28 DPI. Results: Tamoxifen significantly improved behavioral recovery up-to 6 hours after SCI and significantly increased white matter preservation. Tamoxifen increased neuronal proteins in caudal areas and increased GFAP expression during acute SCI. Conclusions: Improvement in behavioral recovery with a therapeutic window of 6 hours confirm sex differences regarding TAM effects after SCI. Increased neuronal proteins and myelin preservation proves that TAM mediates neuroprotection in male rats supporting the novel application of this drug for the treatment of SCI. Acknowledgements: Approved by IACUC(#2450113).

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O-011 Patterns of Alcohol Use and Drunk Driving among High School Students in Puerto Rico

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In the United States, motor vehicle related crashes account for more than 32% of all deaths among persons aged 15 to 24 years. Because of the number of youths involved in alcohol-related crashes, reducing adolescent drinking and driving has become a national public health priority. The purpose of this study is to estimate the prevalence of self-reported drinking and driving, describe patterns of alcohol use among adolescents and identify its risk factors. Consulta Juvenil has been designed as a monitoring program of the prevalence of substance use, violence and the risk factors associated with these problem behaviors. The survey was conducted during the 2011-12 academic year. The study utilizes a self-administered questionnaire. Participants included 7,028 (52.4%) females and 6,389 (47.6%) males. Half of the sample was between seventh and ninth grades with a median age of 15 years old. The majority of the sample was recruited from the public system (70.3%). From a total of 10,134 students, the overall prevalence of drinking and driving was 4.5%. Multiple logistic regression analysis revealed that males (OR=2.44, CI: 1.99-2.99), those who use marihuana (OR=3.40, CI: 2.78-4.62) and those who reported higher levels of sensation seeking (OR=4.65, CI: 3.78-5.72) were significantly more likely to report drinking and driving. The findings of this study suggest that adolescents who report higher levels of sensation seeking seem to be at higher risk for drinking and driving. Understanding who is most likely to report drinking and driving is important in developing interventions to prevent this behavior.

O-012 GRP78 is Not Expressed on the Surface of Triple Negative Human Breast Cancer Cells

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Background & Objectives: GRP78, an Mr78 kDa glucose responsive protein is located in the ER lumen. It functions as an ER chaperone translocating across the ER membrane proteins that need to be N-glycosylated. When N-glycosylation is impaired with tunicamycin, angiogenesis -a hallmark for tumor progression and metastasis- is inhibited. Reduced N-glycan expression correlates with tumor microvessels thinning and narrowing, resulting in breast tumor regression. GRP78 expression in microvasculature and in tumor tissue is upregulated indicating ER stress. Our objective, if upregulation of GRP78 causes ER stress-induced upr-mediated apoptosis inhibiting tumorigenesis, then, it contradicts the current dogma that GRP78 upregulation interferes with therapeutic approach(es), and thus acts as a tumor promoter. Methods: To evaluate GRP78 localization, we used a triple negative human breast cancer cell line MDA-MB-231 cultured with or without serum and the ER stress was induced with tunicamycin. Unfixed cells were stained with Con-A, WGA and anti-GRP78 antibody, and analyzed by fluorescence microscopy. Results: Con-A and WGA stains N-glycans on the cell surface, demonstrating cell membrane's intactness. Under this condition GRP78 fluorescence was absent from the cancer cell surface. The results were the same in cells cultured in absence of serum or treated with tunicamycin. However, GRP78 fluorescence was detectable in cells after fixing in ice-cold methanol or permeabilized with digitonin. Conclusions: Therefore, GRP78 is not expressed on the outer-leaflet of the MDA-MB-231. Its intracellular upregulation is anti-tumorigenic. Acknowledgements: Supported in part by NIH U54-CA096297, Susan G. Komen for Cure BCRT58206 (DKB), and NIH/NIMHD 2G12MD007583 (KB) grants.

O-013 Medio-Lateral Postural Control Instability is Associated to Proprioception Deficiencies in Children with Mild Autism

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Children diagnosed with Autism Spectrum Disorder (ASD) could exhibit postural control instability related to proprioception (PRO) and vestibular (VE) deficiencies. Purpose: Assess which system (VE or PRO) has the greater impact in postural instability, and identify the direction in which this instability is displaying in children with ASD. Methods: Postural stability was measured in 9 children with mild autism (8 male, 1 female, aged 8.7 ±1.4 years old). Center of pressure (COP) and sway (ML and AP) were evaluated [in centimeters, (cm)] during eight sensory conditions that challenge PRO and VE systems on a pressure mat. We divided and compared our eight sensory conditions in four groups for each variable of interest to achieve our objectives. Results: An ANOVA analysis was conducted to compare COP and sways. COP (cm) results showed a significant difference among the conditions evaluating the VE system, only in half of the comparisons (EOMAT=41±39/EOHUDMAT=102±79, P≤.05) and ECMAT=40±38/ECHUDMAT=99±13, P≤.05)

and all the conditions assessing the PRO system (EO=7±7/EOMAT=41±39,EC=8±9/ECMAT=40±39,EOHUD=13±7/EOHUDMAT=102±79 and ECHUD=16±14/ECHUDMAT=99±55,P≤.05forall).Swaydata(cm)revealsignificantalteration in one of four associations for VE system (ECMAT=5±4/ECHUDMAT12±6,P≤.001)andhalffor PRO (EOHUD=6±3/EOHUDMAT=11±6, P≤.05 and ECHUD=7±5/ECHUDMAT=12±6, P≤.01) systems in the AP direction. Furthermore, ML (cm) results exhibited significant difference only for the PRO system in all the comparisons (EO=4±4/EOMAT=11±6, EC=3±1/ECMAT=12±4, EOHUD=5±3/EOHUDMAT=15±5 and ECHUD=4±2/ECHUDMAT=15±5, P≤.01 for all). Conclusion: It appears that the PRO system is more affected and there is a greater instability in a ML direction when the PRO and VE systems are altered.

O-014 Implementing the Structured Standardized Patient Experience in a Physical Therapy Doctoral Program: Student Performance and Satisfaction

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Background & Objectives: The Doctoral Physical Therapy (DPT) Program is the first and only program of the School of Health Professions (SHP) of the Medical Sciences Campus (MCS) of the University of Puerto Rico to implement the technique of standardized patient (SP). The SP in the DPT curriculum is used to validate students' clinical skills and readiness for clinical practice. The objectives of this project were to assess student competencies and student satisfaction with SP experience. Methods: Faculty was trained in the technique of SP and developed two blueprints portraying a patient with ankle strain and another with generalized weakness. Standardized patients (SPs) were recruited from the School of Medicine of the MCS. SPs were trained to assess students' competencies on rapport, health history, interviewing skills, organization and transition, patient education and understanding, and closure of the encounter. Faculty assessed professional behavior, safety, vital signs, transfers, gait training, and documentation. Assessment of student satisfaction was performed through a written survey. Results: All students demonstrated competence in rapport, organization and transition, patient education and understanding, closure of the encounter, professional behavior, vital signs, transfers, and gait training. Competencies to be improved were: interviewing skills, universal precautions, patient guarding, and elements of the SOAP note. All students reported satisfaction with the experience and the feedback provided. SPs identified unique strengths in DPT students as compared to other MSC students. Conclusion: This SP experience served to identify clinical competencies to be improved through the curriculum and clinical education experiences. Acknowledgements: Funded by MSC-SHP.

O-015 Estado de pobreza de Guánica: El municipio más pobre de Puerto Rico

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Trasfondo y objetivos: Guánica es uno de los diez municipios con la tasa de pobreza más alta en Puerto Rico, en los últimos diez años. Se estimó que, en los periodos 2009-2013 y 2010-2014, fue el municipio con la tasa de pobreza más alta, siendo 63.2 % y 64.4 %, respectivamente. El objetivo principal fue conocer sus características demográficas, sociales, económicas (particularmente, actividad económica y negocio) y relacionadas a la salud. Métodos: Se realizó un análisis descriptivo de la Encuesta de la Comunidad, Estimados de Población, Censo Económico y Patrones de Negocios, que preparó el Negociado del Censo de Estados Unidos, para diversos años. Hallazgos: En el periodo 2010 al 2014, había siete áreas de pobreza extrema y 35 % de la población vivía bajo el 50 % del nivel de pobreza. Por otro lado, hubo reducción de su población, aumento de mediana de edad, 28.5 % tenía diversidad funcional (incapacidad), 75.3 % tenía seguro médico público, 52.4 % de los hogares fue beneficiario del PAN, 31.8 % estaba desempleado y 37.3 % de los hogares tuvieron como ingreso menos de $ 10,000. Además, hubo disminución de negocios (particularmente, de construcción) y reducción de nómina y ventas en el sector de servicios de alojamiento y comida. Conclusión: Debido a que cerca de la mitad del grupo de trabajadores de Guánica, que viajaron a sus trabajos, iba a municipios cercanos, se recomienda que continúen los programas que incentiven el crecimiento económico de la zona suroeste de Puerto Rico. Reconocimientos: Ninguno.

O-016 Evidence for the development of a self-management assistive technology program to address functional limitations in community-living older adults

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Background & Objectives: The presence of chronic conditions in old age may result in challenges to maintain independence in daily life activities. The use of low cost assistive technology

(AT), such as jar openers and seat lifts, can prevent the onset of disabilities by improving functional independence. Until now, no community-level AT intervention for older adults had been developed to reduce disability risks among older Hispanic populations. The purpose of this study was to comprehensively explore the necessary components for the development of a culturally sensitive and evidence-based AT program to manage and prevent functional limitations among community-dwelling Hispanic older adults. Methods: We used a concurrent nested mixed method design for the development and content validation of the intervention. In the quantitative phase, four aging experts as well 27 older adults from three activity centers for the elderly in Puerto Rico completed a content validity ratio exercise. In the qualitative phase, we conducted four focus groups with these participants. Results: This study resulted in the development of the Assistive Technology Life Enhancement Program (ATLEP), an evidence-based intervention with culturally sensitive elements for managing and preventing disabilities in daily life activities in Hispanic older adults living in Puerto Rico. Conclusions: Our findings support the use of mixed method designs as well as input from the target population to empirically develop and culturally-center the goals, the content, and the methods of preventive interventions. Future studies must assess the feasibility, acceptability and effectiveness of the ATLEP intervention for older people. Acknowledgements: None.

O-017 Economic recession and penetrating-injury-related admissions in Puerto Rico

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Background/Objective: Since 2006, Puerto Rico has undergone an economic recession. Several economic indicators have been associated to penetrating-injury-related admissions to trauma centers. Therefore, we aimed to evaluate this phenomenon at Puerto Rico Trauma Hospital (PRTH). Methods: An ecological study was conducted using the dataset of the hospital. All patients admitted from 2003 through 2014 with the following ICD-9 codes: [E966] stab wounds (SWs) and [E965] gunshot wounds (GSWs) were included in the sample. Then, we calculated total admissions and in-hospital mortality rates, monthly. For this study, the predictors were Puerto Rico's monthly coincident economic activity index (CEAI), monthly unemployment rate, and monthly total bankruptcies. A Poisson regression model was carried out to assess the relationship between the economic indicators and the study outcomes, adjusting by age and gender. IRB approved was obtained (#B0030215). Results: The sample consisted of 3,371 patients with GSWs and 1,160 with SWs. Most of them were males aged 19-44 years. The unemployment rates were correlated positively with the total admissions of penetrating injuries (RR=1.03; CI 95%: 1.02-1.04) and more specifically with GSWs (RR=1.04; CI 95%: 1.03-1.05), after adjusting by age and gender. However, there were no statistically significant differences between monthly CEAI and monthly total bankruptcies and the penetrating-injury-related admissions ($p<0.05$). Furthermore, the economic indicators were no related to in-hospital mortality rates of penetrating trauma. Conclusion: Our findings are consistent with previous studies suggesting that economic recessions increase penetrating-injury-related admissions at trauma hospitals. Acknowledgements: This study received no external funding and the authors have no conflicts of interest to disclose.

O-018 Enhanced Surveillance for Fatal Chikungunya Virus-Associated Cases - Puerto Rico, 2014

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Background & Objectives: In 2014 there was first detection of locally acquired chikungunya virus case in Puerto Rico. Although fatal outcome is uncommon (<0.1% of cases), death has been reported in cases with co-morbidities, particularly infants and the elderly. To describe the etiology of chikungunya virus (CHIKV)-associated fatal cases in Puerto Rico, enhanced surveillance was established utilizing an existing acute febrile illness (AFI) passive surveillance in collaboration with enhanced fatal AFI surveillance performed in collaboration with forensic pathologists. Methods: Serum and tissue specimens were collected from individuals that died following an AFI. Tissue were tested for evidence of infection with CHIKV and dengue virus (DENV) by immunohistochemistry (IHC) and RT-PCR. Blood specimens were tested for evidence of CHIKV and DENV infection by RT-PCR. Data sources included death certificates (DC), medical records, autopsy findings, family interviews, and diagnostic test results. Results: In 2014, 59 AFI fatal cases were detected, of which 30 (51%) were laboratory-positive CHIKV-associated fatal cases. Of all CHIKV- associated cases, 23 (77%) were not detected

through passive surveillance. Median age was 61 years (range: 6 days–85 years), and 19 (63%) were male. Conclusion: Evaluation of autopsy tissues resulted in a threefold increase in the identification of CHIKV- associated fatal cases. Because of the limitation in determining the contribution of CHIKV infection to fatal outcome, such cases should be classified as "CHIKV-associated fatal cases". The system demonstrates how pathologists can contribute to the public health discipline through novel approaches such as this enhanced surveillance system. Acknowledgments: None

O-019 Hindfoot Fusion Nail with Adjuvant Hybrid External Fixation used as Limb-Salvage Procedure after Failed Open Reduction Internal Fixation of Ankle Fracture

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Purpose: Failure of an open reduction internal fixation of a bimalleolar ankle fracture due to Charcot joint neuroarthropathy is a rare finding in the practice of Orthopaedic Surgery. We are presenting a limb salvage option that resulted in favorable results. Case Description: This is the case of a 52 year old woman with uncontrolled diabetes who sustained a right ankle fracture after falling from standing height. Patient was treated with an open reduction internal fixation of both malleoli. Treatment ultimately failed as patient progressed with a diagnosis of Charcot ankle joint arthropathy. Clinical Approach: Imaging were reviewed post-operatively and showed a catastrophic fixation failure with clinical findings suggestive of the fragmentation stage of Charcot neuroarthropathy. Decision was made to treat fixation failure, fracture non-union and neuroarthopathy with salvage arthrodesis combining hindfoot fusion nail with adjuvant hybrid external fixation. Clinical Findings: Post-operative visits showed wound healing without complications. Follow up radiographs showed tibio-talar bony union with subtalar joint fibrous painless union. At 48 weeks post-op, patient presented with stable fusion and painless weight bearing. Hypothesis: Failure of ankle open reduction internal fixation after acute fracture, regardless of patient comorbidities, can be catastrophic. When findings are encountered in unison with a joint destructive process as Charcot neuroarthropathy, limb-salvage procedures are scarce. We decided to combine hindfoot intramedullary fusion nail with a hybrid external fixation system to augment joint stability ultimately achieving stable fusion. Favorable findings suggest that further identification of this type of cases should be further investigated.

O-020 Invasive vs Non Invasive Mechanical Ventilation Support and its Impact in the Clinical Outcome of Paediatric Patients with Acute Respiratory Failure

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Background & Objectives: The use of Non-Invasive Mechanical Ventilation (NIMV) in the pediatric population has been increased recently as an early alternative form of ventilator support for acute respiratory failure (ARF). This study evaluates the prevalence of NIMV and its impact in the clinical outcome of patients admitted the Pediatric Intensive Care Unit (PICU) with ARF. Methods: In this retrospective observational study, we collected demographics and clinical data from pediatric patients admitted to PICU at University Pediatric Hospital (UPH) with diagnosis of ARF from June 2008 to June 2012. Differences between NIMV vs IMV and its impact in PICU length of stay (LOS) and mechanical ventilation days were evaluated using a Mann-Whitney test. Association between mortality and type of MV support was determined with a logistic regression. Results: 160 patients met the inclusion criteria and 208 interventions were evaluated, with NIMV prevalence of 41%. No difference between PICU LOS and the use of NIMV or IMV was found. Lower NIMV days (OR 3.2, 95% CI 1.2-8.6, p = 0.02) and Pediatric Index of Mortality 2 (PIM2), (OR 1.04, 95% CI 1.02-1.07, p = 0.0001) obtained as compared with IMV. NIMV failure was 17.3% and mortality rate 16.2%. Conclusion: No significant decrease in PICU LOS with NIMV was found, however, this ventilation support decreased MV days, which may reduce the risk associated with IMV support. Use of NIMV improve the quality of care, reduce expenses and risks associated with IMV in critically ill children with ARF. Acknowledgments: The authors want to thank the PICU personnel from UPH.

O-021 The Historical, Research and Democratic Values of the Digitalization Project of Photos and Videos at the MSC

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Background & Objectives: The Hispanic Health Sciences Virtual Library (HHSVL), one component of the Title V Project, and the Conrado F. Asenjo MSC-UPR Library, developed a project entitled: Digitalization of Audiovisual Resources in order to increase access and availability to

unique, historical and specialized audiovisual collections at the Medical Sciences Campus. Methodology: A workflow plan, work forms, inventory and priorities were established for the project. A digitation, organization, cataloging, and classification system was also decided. Specialized equipment and supplies were acquired. Three librarians, a curator and an audiovisual technician worked in the project. Activities, people, places and dates of the photos and videos, were identified by the curator. Follow-up meetings of the working group were carried out consistently. Results: The outcomes of the Digitization of Audiovisual Resources Project were: 1,686 photographs, organized and classified in 93 subjects, and 557 sub-subjects. 625 photos digitized, and 300 were catalogued online. The videos in VHS, Super VHS and DVD were evaluated, and sorted out. 532 videos were digitized. Conclusion: The HHSVL increased accessibility to online unique and historical information resources making it available to the MSC community and the general public. These resources will be available on an institutional web page and will be promoted in social networks.

O-022 The Effect of unbelted patients in mortality after Motor Vehicle Collisions at the Puerto Rico Trauma Center

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Background/Objective: Literature suggests that use of seatbelt reduces mortality in motor vehicle collisions (MVCs). In PR, MVCs are a public health concern; therefore, this study aimed to assess the association between seatbelt use and mortality in MVC victims. Methods: A retrospective-cohort study of 2,685 MVC patients was conducted using the trauma registry of Puerto Rico Trauma Hospital from 2000-2014. Patients' data included: sociodemographic variables, clinical variables, and mortality. A multiple logistic regression was performed to evaluate the mortality risk of belted patients compared to their unbelted counterparts. IRB approved was obtained (#B0030415). Results: Seatbelts use was more frequently in females (71% vs. 62%) and increased with age. Seatbelt victims were less likely to have open wound head neck trunk injuries (8% vs. 12%), intracranial injury (12% vs. 25%), and fracture of skull (10% vs. 17%) than unbelted patients. Meanwhile, fracture of lower extremity (32% vs. 26%) and pneumothorax and hemothorax (16% vs. 12%) occurred in belted patients more frequently. The proportions of patients with a GCS<8 (17% vs 6%; p<0.001) and an ISS25 (24% vs. 15%;p<0.001) were significantly greater in the unbelted group. Belted victims had a 30% lower in-hospital mortality compared to their unbelted pears (OR=0.70; 95%CI: 0.52-0.92). However, after adjusting for cofounders, this protection lost statistical significance (AOR=1.04; 95%CI: 0.72-1.5). Conclusion: Our findings suggested the seatbelt use reduces head injuries which, in turn, diminish in-hospital mortality, as established in literature. Thus, it is imperative to reinforce public service campaigns to educate the population on the benefits of seatbelt use. Acknowledgments: This study received no external funding and the authors have no conflicts of interest to disclose.

O-023 Un análisis de las cuestionables bases científicas de la "Ley del Reto Demográfico"

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Política pública: La Ley Núm. 199 del 2010, "Ley del Reto Demográfico", tiene como objetivo establecer una política pública para atender las necesidades que enfrenta la población envejeciente. Pero, ¿se fundamenta tal Ley en argumentos científicos o en un alarmismo demográfico? Esta investigación analiza las bases científicas de la Ley y los informes anuales de progreso que dicha ley exige. Disciplina o teoría: La economía política del envejecimiento investiga cómo el alarmismo del envejecimiento de la población —llamado demografía apocalíptica— enmascara intereses económicos que se benefician de la reducción del estado benefactor y de cambios en los sistemas de pensiones, tomando como excusa los cambios demográficos. Fuentes de información: (1) Ley del Reto Demográfico; (2) el Resumen Económico de Puerto Rico Suplemento Especial - Reto demográfico: Adultos Mayores, preparado por la Junta de Planificación de Puerto Rico; y (3) proyecciones de población por edad, 2000-2050. Métodos: El análisis consistió en el cálculo de medidas demográficas que documentan el impacto del envejecimiento de la población en la tasa de dependencia. Se contrastaron estas medidas con los argumentos de la exposición de motivos de la Ley. Hallazgos: No existe evidencia que sustente un aumento drástico en la tasa de dependencia para el periodo 2000-2050, como resultado del envejecimiento de la población. La Ley del Reto Demográfico y sus informes reproducen los argumentos de la demografía apocalíptica sin fundamento científico. Implicaciones: Los informes futuros que la Ley exige deben presentar el indicador demográfico «tasa de dependencia» para evitar alarmismos demográficos. Reconocimientos: Ninguno.

O-024 Cross sectional study on victims of sexual violence treated at PASOS de las Mujeres, 2011-2013

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Background & Objectives: PASOS de las Mujeres was a comprehensive forensic clinical service for sexual assault victims, in Puerto Rico. It focused on the health needs of the victims as well as the prosecution within the justice system. The objective of the study was to provide information about the survivors' sexual violence experience, forensic findings and self-reported health concerns. Methods: The sample consisted of a review 169 medical records from 2011-2013. Descriptive and bivariate analysis was performed. Results: The participants were females under 11 years old and half reported their first sexual violence experience to have occurred during childhood.61% were victims of sexual assault and 34% of sexual molestation. Overall, 55% of offenders were from a consanguine relationship. There was an association between age and sexual violence experience, and forensic outcomes. Conclusion: Sexual violence is an act of power, control and opportunity, done mostly by a person close and trustful to the victim. Early identification, management and accountability is a must. This study contributes to the limited available information on sexual violence in Puerto Rico. More studies are needed to respond to the needs of victim and the consequences of violence from a public health perspective. Acknowledgement: No funding source. Approved by IRB #9090213.

O-025 Relationship between BMI and Skeletal Maturation in 10 to 14 year olds from the Orthodontic Clinic at UPR School of Dental Medicine (2015 - 2016)

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Introduction: Increased prevalence of obesity has been documented in Puerto Rico. Elevated Body Mass Index may potentially lead to early skeletal maturation in adolescents, which influences orthodontic treatment timing, planning, and outcomes. Purpose: This study aimed to evaluate the association between BMI and skeletal maturation. Methods: Orthodontic patients aged 10 to 14 years were recruited from Orthodontic Clinic at the UPR Medical Sciences Campus. Patients' weight and height were measured following National Health and Nutrition Examination Survey procedures. Participants were categorized as normal weight, overweight and obese using the Centers for Disease Control and Prevention's age and gender specific growth charts. Skeletal maturation was determined by a single examiner using the cervical vertebral method and divided into two groups: CVM 1-3 (pre-peak) and CVM 4-6 (post-peak). The study examiner was calibrated against the gold standard; inter- and intra-examiner reliability was assessed using randomly selected lateral cephalometric radiographs. Logistic regression models were used to evaluate the association between BMI and skeletal maturation, adjusting for age and gender. Results: Preliminary data is currently available from 69 patients; 52% females and 48% male. Calibration yielded perfect inter-examiner (kappa=1) and good intra-examiner reliability (kappa=0.78). Mean age was 12.3 years (SD: 1.34); 22% were overweight and 19% were obese. Multivariate-adjusted Odds Ratios for post-peak skeletal maturation (vs. pre-peak) were 1.52 (95% CI: 0.30-7.45) for overweight and 2.28 (95% CI: 0.48-10.80) for obese, when compared to normal weight. Conclusion: This study provides preliminary evidence of a possible trend in the association of BMI and skeletal maturation.

O-026 Concordance of expert and parental opinion about hypospadias surgical outcome is severity-dependent

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Background & Objectives: Hypospadias is a male congenital condition 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 the level of concordance of opinion among parents and urologists with regard to surgical outcomes according to hypospadias severity. Methods: Parents of children who had undergone hypospadias repair were recruited for this study (n=104). A set of questionnaires was created to evaluate postsurgical satisfaction by parents and urologists. SAHLSA-50, a validated instrument for Spanish-speaking adults was used to assess health literacy. Cohen's Kappa (k) coefficient was used to assess inter-observer agreement and Chi Square

"Goodness of Fit" Test was used to determine probability of satisfaction. Results: Concordance on the level of satisfaction with surgical outcomes for Type cases I was slight (k=0.20; CI 95% 0-0.60), for Type II cases was moderate (k= 0.54; CI 95% 0.13-0.94), and for Type III cases was substantial (k=0.62; CI 95% 0-0.56). The probability of satisfaction did not change according to severity (Chi Square Test; parents, p=0.84; pediatric urologists, p=0.92). These results cannot be explained by parental health literacy. Conclusion: The level of concordance of opinion among parents and urologists with regard to their level of satisfaction with surgical outcomes is related to hypospadias severity, whereby the greatest level of concordance of opinion was achieved among most severe cases. This study underscores the need for longer follow-up to properly assess satisfaction with hypospadias repair, especially for less severe cases. Acknowledgments: Dr. Karina Escudero, Marcos Pérez Marchan, Héctor Nuñez, Danny Mangual, Sonya Bonnin, Jeannette Acevedo, Héctor Navedo, and Jorge de Jesús contributed to this work throughout data collection. All of them participated as co-authors in academic or professional presentations of preliminary results. Conflict of interest statement: The authors declare that they have no competing interests. Funding: This study was supported by the National Institute on Minority Health and Health Disparities of the National Institute of Health (2U54MD007587).

O-027 Red Cell Cell Distribution Width (Rdw): A Predicitive Value Of Mortality In Hispanic Critically Ill Children Who Underwent A Cardiovascular Surgery

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Introduction: Red Cell Distribution Width (RDW) is a quantity measurement of anisocytosis. RDW is reported routinely on CBC. There has been an association between high RDW values with a higher mortality rate among adult patients with acute myocardial infarction.The study was designed to evaluate the association between RDW and mortality rate in pediatric patients with CHD who underwent a cardiac surgery and were admitted to the PCICU. Design/Methods: This retrospective observational evaluate pediatric patients between 0 to 21 years old admitted for a cardiac surgery from November 2011-2012. RDW and other clinical data prior surgery, on surgery day and for 7 consecutive days after surgery was collected. An univariate logistic regression was used to determine the association between RDW and mortality rate. A Spearman Rank Correlation was used to evaluate the correlation between RDW values on surgery day with RDW prior surgery; on surgery day, at 24 hours, 72 hours and 7 days after surgery. Results: A total of 165 patients met inclusion criteria, 50.3% were males. The three primary admission diagnosis were Ventral Septal Defect (VSD, 30.9%), Patent Ductus Arteriosus (PDA, 22.8%), and Atrial Septal Defect (ASD, 16.1%). A 44% of surgical procedures had a RACHS 2 Score. Patients had a PCICU LOS of 9.9 ± 1.0 days and a hospital LOS of 11.1± 0.6 days. Mortality rate was 6.7%, and a PRISM Score of 11.1± 0.6. We observed that a high RDW at surgery day is a better predictor of mortality than RDW prior to surgery (OR: 1.43 ± 0.20 (95% CI: 1.1-1.89), p = 0.001). RDW increased at 24, 72 hours and remained high 7 days after surgery as compared to RDW at surgery day. Conclusions: RDW at surgery day was a good predictor of mortality. We confirm previous results in adults and pediatric population demonstrating that RDW is an inexpensive objective tool for detecting high-risk outcomes in patients who had underwent cardiac surgery.

O-028 Outpatient Antibiotic Therapy Among Patients Discharged from the Adults University Hospital (UDH) in the Puerto Rico Medical Center

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Objective: Outpatient parenteral antimicrobial therapy (OPAT) might be a safe and convenient in selected patients. OPAT is extensively prescribed in the Adults University Hospital (UDH) in Puerto Rico (PR), but there is no data evaluating its efficacy. We aimed to describe a profile of patients discharged on OPAT and to identify how many of them required readmission. Methods: A retrospective cohort of patients discharged from UDH on OPAT from August, 2014 to December, 2014 was identified. Clinical and microbiologic data, healthcare plan, admission and prescription diagnosis, length of hospital stay and prescribed antimicrobials were recorded for 179 patients during the selected time period. A total of 174 records were analyzed. Results: 66% of patients were men (n=115). The age range was very broad (19-92) with a mean of 50±17.2. The most common types of infections were those of bone/joint (35%), skin/soft tissue (24%), prosthetic devices (15%), and intravascular devices (10%). 36% of patients (n=62) were readmitted or visited an emergency room (ER) within 1 to 150 days and, of these, 53% (n=33) were known to be related to OPAT complication. Age was a statistically significant predictor of readmission or ER visits during the subsequent 4.5 months. Conclusions: This is the third study on OPAT in PR and the first one to evaluate OPAT in UDH. 36% of patients sent on OPAT from UDH required readmission or an ER visit within the following next 4.5 months, which is higher than described in studies in other populations.

O-029 Surgery delays in an outpatient setting: A closer look at bundled payments

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Background: The unsustainable growth in healthcare spending is a critical issue for policy makers, with direct impact on care quality. Orthopedic procedures represent a large percentage of health-related expenses. Implants specifically account for up to 80% of costs. In our institution implants are bundled to hospital payments for Medicare patients, compared to other insurances that pay vendors directly. We sought to obtain data that will help understand the effect of this disparity. Methods: We performed a retrospective analysis on all patients scheduled for outpatient orthopedic surgery at one of our teaching hospitals. Patient demographics and surgery date were recorded. Our main outcome measure was surgery delay (days), with insurance type as a predictor. Results: 591 patients were scheduled for surgery in a 6-month period. Our cohort included 49% men and 51% women, with a median age of 27. The majority (52%) were Medicaid patients; all others had Medicare (23%) or commercial insurance (25%). 60% of Medicare patients had a delay in surgery, compared to 46% and 45% of patients covered by Medicaid and commercial insurance, respectively ($p<0.01$). The delay for Medicare patients was a median of 7 days (IQR 0-22), compared to 0 (IQR 0-8) for other patients ($p=0.006$). Conclusion: Medicare patients experienced surgical delays more frequently compared to other patients in our cohort, with no differences seen by age or sex. Because of the impact of surgical delays have on the quality of patient care, we believe our results are important, especially in our current turmoil of healthcare reform.

O-030 Metabolic correction as a proposed approach for reduction of complications and costs of diabetes care in Puerto Rico

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Background & Objectives: Diabetes is among the leading causes of death and disability worldwide. In Puerto Rico, diabetes is the third cause of death and is responsible for a high health care costs. Significance: Despite use of treatment guidelines, diabetes, its complications and costs continue to rise. Given the high cost and the economic crisis in Puerto Rico, the implementation of cost effective strategies are urgent. Hypothesis: Metabolic Correction (MC) is proposed to improve clinical outcomes and to reduce costs. An estimate cost of Diabetes and its complications for PR is presented. MC provides the necessary elements to improve the patient's metabolism by adjusting macronutrient combination and supplying the necessary biochemical cofactors. This is expected to improve patient's health, reduce complications and allow reductions in medication use, thus reducing total costs. Goal: Estimate the economic/health impact of implementing a MC Program for diabetic patients. Methods: An estimate of cost reduction of diabetes and its complications is presented. The model is based on three aspects: Reduction of costs of the management of diabetes and complications, reduction of adverse drug events and reduction in productivity loss. Results: Estimated cost savings by the use of MC are: $30-60 million in management of diabetes and its complications. $300-600 million from reduction of medication morbidity and mortality and $73-146 million from reduction in loss of productivity. Conclusion: The estimated potential cost savings in the management of diabetes is very significant. The cost savings of this model needs to be tested in various types of scenarios/models.

O-031 Role of KSRP in the post-transcriptional regulation of Human 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. It is aberrant expression has been associated with several hematological cancers. IL-3 3'-UTR harbors Adenine/Uridine-Rich Elements (AREs) involved in its post-transcriptional regulation. ARE-Binding Proteins (ARE-BPs) play key roles in the recognition and function of these RNA motif. Our preliminary data identified ~18 RNA Binding Proteins that interact with the hIL-3 ARE which were confirmed by inmmunoblot analysis. KSRP (KH-homology splicing regulator protein) was founded in these analyses. KSRP have a relevant role in the degradation of inherently unstable mRNAs harboring AREs within their 3'-UTRs. We hypothesized that KSRP are involved in the

posttranscriptional regulation of hIL-3 mRNA during T cell activation. Objective: This study should help us understand the KSRP mechanism in the hIL-3 post-transcriptional regulation. Methods: To test this role a shRNA lentivirus knockdown against KSRP was performed. Western Blot analysis was used to confirm the knockdown of KSRP. Moreover, RT-PCR and ELISA techniques measured hIL-3 mRNA and protein levels, respectively. Results: We observed that KSRP knockdown increased the hIL3-mRNA expression during T cell stimulation but decrease the protein levels at 12hrs of activation. Conclusion: These results suggest a role of KSRP in the post-transcriptional regulation specifically on the mRNA degradation and stability. Ultimately, elucidating the role of these ARE-BPs in hIL-3 expression can provide new insights about ARE-mediated post-transcriptional control, inflammatory/autoimmune diseases and blood cancer. Acknowledgements: This research was supported by MBRS-RISE Program R25GM061838, U54 Program, UPR-PES Institutional funds.

O-032 I'm not that gay!: Internalized homophobia in a sample of HIV+ gay, bisexual, and other men who have sex with men in Puerto Rico

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Background: Internalized homophobia (IH) has been negatively associated with mental health and psychological wellbeing. Among HIV+ gay, bisexual, and other men who have sex with men (GBMSM) IH is influenced by social support, religiosity, sexual practices and sexual identity/orientation disclosure, among other factors. Methods: Data from an ongoing study consisting of a survey with HIV+ GBMSM was analyzed. The survey, limited to HIV+ MSM who are 16yrs or older and sexually active in the past year, includes socio-demographic characteristics, measurements for IH, religiosity, sexual practices and disclosure about sexual identity/orientation. Using SPSS v22.0, bivariate analyses were conducted to explore associations among these variables. Results: The mean age for the sample (N=101) was 40.3yrs and have been living with HIV for approximately 10.3yrs. Significant higher levels of IH were found among those who reported having less social support (p-value=0.024), especially those who received less support from their significant others (p-value=0.011) and friends (p-value=0.003). Those who did not disclose their sexual identity/orientation to partners had higher levels of IH (p-value=0.005). No statistical significance was found for religiosity or sexual practices. Discussion: Since social support and disclosure of sexual identity/orientation were positively associated with lower levels of IH, social networks and strategies to promote disclosure should be considered in the development of interventions targeted to HIV+ MSM in Puerto Rico. Qualitative data collection to understand the underlying effects of social support, disclosure and sexuality in IH is recommended.

O-033 "Ante los ojos de Dios": The impact of religiosity and stigma among HIV-positive gay, bisexual, and other men who have sex with men in Puerto Rico

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Background and objectives: In Puerto Rico (PR), the Christian-based society and religious beliefs has driven stigma and discrimination against sexual minorities. Furthermore, gay, bisexual, and other men who have sex with men (GBMSM) have been severely affected by the HIV epidemic, which has also been historically linked to public discourses of moral failings and sinful practices. Considering the intersections of religiosity, stigma and the HIV epidemic in PR, the objective of this study was to explore the role of religiosity and stigma in the experiences of HIV+ GBMSM. Methods: Based on a mixed methods design, data collected from 18 life history interviews and 149 survey interviews with HIV+ GBMSM in PR were analyzed. Interviews included sociodemographic characteristics and culturally-appropriate measures of religiosity, gay stigma and HIV felt stigma, among others. Results: The majority of participants (n=149) reported affiliation to a religion (69.1%), primarily Catholicism (38.9%) and Protestantism (30.2%). Most considered religion as important (25.5%) or very important (36.2%) in their lives. High levels of gay-related and HIV felt stigma were reported across the sample. Self-identified protestant participants reported higher levels of hidden gay stigma (OR=1.13). In interviews, some participants expressed negative moral judgments and inhibition of same-sex sexual practices perceived as sinful. Conclusions:Findings evidence that religion beliefs and practices are deeply embedded and predominant among participants. These beliefs influence their sexual health, well-being, and health-related practices. Considering the cultural context of PR, it is important to continue assessing and addressing the role of religiosity and stigma for the health promotion of populations made socially vulnerable.

O-034 Role of APE1 in Maintaining DNA Integrity After Axozymethane Treatment in Mouse Liver

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Background and Objectives: Base Excision Repair (BER) is a DNA repair pathway critical for genomic maintenance. Azoxymethane (AOM) is a carcinogen that induces DNA lesions repaired by BER. BER includes the APE 1 enzyme. In mice, homozygous deletion of the Apex1 gene (which encodes APE1) is embryonic lethal but heterozygous animals (Apex1+/-) have a normal lifespan. Objectives: Our aim was to study the role of APE1 in the repair of DNA lesions and changes in mitochondrial DNA (mtDNA) abundance induced by AOM and in the liver. Methods: We isolated DNA from 6-month-old C57BL/6 WT and Apex1+/- mice that were treated with a single AOM dose (10 mg/kg) and sacrificed 24, 48 and 72 hours after treatment. To quantify nuclear DNA (nDNA) lesions and changes in mtDNA abundance in liver tissue we applied a PCR based assay (QPCR). Results: Our data show that 24h after AOM treatment both WT and Apex1+/- mice exhibit significant levels of nDNA damage. The lesion number decreases 48 and 72h after treatment but remains statistically elevated as compared to their respective controls. A two tailed ANOVA analysis shows no significant differences between genotypes. In terms of mtDNA abundance, Apex1+/-mice show a significant 13% decrease in mtDNA abundance 72 hours after treatment, whereas no significant changes are observed in WT mice. Conclusions: These results suggest that liver is a major target of AOM and that APE1 plays a role in preventing AOM-induced loss of mtDNA abundance. Acknowlegments: Supported by R25GM061838, 2G12RR003051 and U54CA096297

O-035 Ehop-016A Induces Apoptosis in Triple Negative Breast Cancer Cells

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Background and objectives: Among all breast cancer types, triple negative breast malignant neoplasm is, at present, the cancer type with the least effective treatments. This investigation aims to evaluate the efficacy of a novel drug in triple negative breast cancer cells. The hypothesis is that Ehop-016A induces apoptosis at low effective concentrations. Methods: Triple negative breast cancer cells at approximately 60% confluency were treated with vehicle control or 250nM Ehop-016A. Cells were subjected to caspase 3/7 activities to determine the effect of EHop-016A on apoptosis. Next, the cells were lysed and equal amounts of proteins were separated using electrophoresis, and western blotted using antibodies to Bcl-2 family proteins regulating the mitochondrial pathway of apoptosis. Each experiment was performed three times. The positive bands from westerns were quantified using image J and results were expressed as mean ± SEM. Statistical significance was determined using Students T test and P values of less than 0.05 considered statistically significant. Results: Results show that EHop-016A increased the activity of the effector caspase 3/7. Moreover, the expression of both pro-survival Mcl-1, and pro-apoptotic Bax and Bak expression was significantly decreased, in response to EHop-016A. Conclusions: These results demonstrate that the new drug EHop-016A activates apoptosis; however, since both pro-survival and pro-apoptotic members of the Bcl-2 family were decreased, the mitochondrial intrinsic pathway of apoptosis may not be the major mechanism by which EHop-016A induces apoptosis. Future studies will determine the contribution of the death receptor and mitochondrial pathway to the effect of EHop-016A on apoptosis.

O-036 Use of quantitative proteomics as a tool for screening and analyzing molecular changes following exposure to emergent urban contaminants

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Studies associated with river pollutants effects on aquatic fauna have focused on the animal´s survival and their capacity to reproduce, but very little research has been conducted on sub-lethal neural effects of contaminants at the molecular level. The aim of this study was to elucidate differential protein expression in prawns exposed to low environmental levels of dibutyl phthalate (DBP 0.006 ppm), chromium (Cr 0.100 ppm) and manganese (Mn 0.207 ppm), emergent contaminants in some urban rivers of Puerto Rico. To gain an insight on potential molecular modifications in the animal´s nervous system, protein quantitation techniques using isobaric tags were combined with Liquid-Chromatography-MS/Mass-Spectrometry. A total of 1,989 proteins of the prawn´s brain were identified and quantitative analysis its proteome in the presence and absence of the contaminants of interest indicates that the expression of eighteen proteins of the group treated with DBP, forty six proteins of the prawns exposed to Mn, and sixteen proteins of the Cr group was regulated. The regulated proteins were associated with cell cycle signaling, response to stress, and transport activity. The salient findings of our study were the overexpression of Na+/K+ ATPase and down regulation of metallothionein after exposure

to DBP, and the reduction of superoxide dismutase expression in prawns treated with Mn. These findings are evidence that exposure to even low levels of chemicals in urban environments are able to trigger molecular modifications that can produce significant changes at the behavioral and neural tier in exposed wildlife and, most likely, also in humans.

O-037 Associated Factors for Diabetes Self-Management in Puerto Rican Adults with Diabetes Mellitus Type 2

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Background & Objectives. Diabetes mellitus (DM) is a chronic disease that can lead to serious complications. The risk of being diagnosed with DM for Puerto Ricans is 94% higher than for non-Hispanic white Americans and it is the third leading cause of death on the island. Despite diverse efforts to prevent and control DM associated complications, adherence to management guidelines remains low in Puerto Rico. The aim of this study was to explore barriers, facilitators and beliefs, to meet diabetes self-management requirements in Puerto Rican adults with DM type 2. Methods. Four focus groups were conducted with outpatients, aged 45 to 65, from the Centro de Diabetes Para Puerto Rico (CDPR). Analyses of transcriptions were done line-by line, allowing for the identification of major categories, themes and trends. Findings. Among the barriers identified to meet diabetes self-management requirements were: economic status, work status (type and schedule), vacation time, cultural factors (learned habits, gender roles), emotional status (tiredness, not in the mood) and physical symptoms associated to neuropathy. Among the facilitators to meet diabetes self-management requirements were: social support, health professionals (educational tools and confianza), technology, will power, discipline and structure. The participants believe diabetes is a catastrophic disease, associated to death. Conclusion. The qualitative information is valuable to develop culturally tailored interventions that address specific determinants to improve diabetes self-management behaviors among this population, improve glycemic control and reduce the burden of associated chronic complications. Acknowledgements. Support: UPR Central Administration Grant, Capacity Advancement in Research Infrastructure, UPR-MFP 6251123.

O-038 Calendario de Lluvia y Periodos Lluviosos en Puerto Rico

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Backgrounds y Objetivos. Es aceptado por la comunidad científica que los niveles de esporas en el medio natural incrementan después de un periodo de lluvias. Niveles altos de esporas en la atmosfera afectan a la salud de una parte de la población. Este estudio analiza los periodos lluviosos que acontecen durante el año en Puerto Rico. Método. Para ello, se han utilizado registros diarios de lluvia de 50 años (1961-2010) de 16 estaciones meteorológicas representativas de las diferentes regiones geográficas del territorio. El método empleado se basa en la creación de un calendario de lluvia mediante el análisis y comparación de cada día del año de cantidad precipitación media y de la frecuencia media o probabilidad de ocurrencia. Los periodos lluviosos se obtienen mediante el cálculo de medias móviles y de la clasificación de cada fecha del año por medio de los cuartiles de las frecuencias y de las cantidades de precipitación. Resultados. Los resultados obtenidos en este estudio muestran que los periodos lluviosos en Puerto Rico acontecen principalmente en verano y otoño, en especial en septiembre y octubre, y, en menor magnitud, en mayo en varios puntos del territorio. Conclusión. Conocer la ocurrencia de periodos lluviosos en el territorio en el año, ayudaría a prever a las autoridades públicas en materia de salud a desarrollar medidas pertinentes para atender episodios elevados de esporas. Agradecimientos. Ninguno.

O-039 Shear Bond Strength of Self-adhesive Cements compared to Adhesive Resin Cements bonded to dentin

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Background: There is limited evidence of the shear bond strength (SBS) in self-adhesive cements compared to adhesive resin cements bonded to dentin. Objective: compare the shear bond strength (Mpa) of A: resin modified glass ionomer cement (RMGIC); B: self-adhesive resins cement (SARC) and C: total etch adhesive resin cement (TEARC). Methods: In-vitro experimental design of 60 bovine teeth, divided in three groups of 20 specimens. These were prepared by grinding the buccal surface flat with a carbide disk on a low speed trimmer followed by 400 grits carbide sandpaper under continuous water flow. All specimens were stored 24 hours in a thermostatically controlled water bath at 37°C. Cements rods preparation followed the manufacturers' instructions. Ten specimens per group were thermocycled for 24 hours (5-55°C), while the others 10 specimens were stored 24 hours in a thermostatically controlled water bath at 37°C. Shear bond strength values were determined by a Chantillon Testing Machine. Results: Overall

mean shear bond strength was 7.13±3.38 Mpa; material A had 4.25±0.87 Mpa; material B 6.59±1.46 Mpa; and material C 9.67±3.88 Mpa. One-way ANOVA showed a statistically significance difference on mean SBS by material (p=0.000). Bonferroni test was used to assess differences between specific materials, and differences were found between all cements A vs. C (p=0.000); B vs. C. (p=0.001); A vs. B (p=0.035). Conclusions: Total etch adhesive resin cement system showed more retentive properties. Similar studies are needs to compare others trademarks and evaluate results in a meta-analysis study.

O-040 A forgotten cause of cardiac tamponade

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A 66 year old man was transferred to our center with the diagnosis of community acquired pneumonia. Antibiotic therapy with levofloxacin and meropenem was instituted. Upon arrival he developed sinus tachycardia and hypotension requiring inotropic support. Bedside echocardiogram showed a large pericardial effusion with diastolic collapse of the right atrium. Immediate percutaneous pericardiocentesis was performed with drainage of 400 ml of frank purulent fluid with evidence of gram positive diplococci on gram stain. A temporary catheter was further placed. Following drainage there was improvement in patient's clinical condition, with no further need for inotropic support. On following days he had bilateral pleural tubes placed and underwent anterior thoracotomy with partial pericardiectomy with a pericardial tube connected to drainage. Patient was extubated, pericardial and pleural tubes removed and transferred to internal medicine ward 24 days after admission to intensive care unit. He completed a six week course of vancomycin and meropenem. Follow up echocardiogram demonstrated no significant accumulation of pericardial fluid or constrictive pattern. Patient was then discharged home. Purulent pericarditis has become a rare diagnosis in developed countries since the development of antibiotics.Prompt drainage of pericardial fluid combined with adequate systemic antibiotic therapy is a must. In cases of hemodynamic instability due to cardiac tamponade pericardiocentesis should be rapidly undertaken. Despite aggressive treatment mortality rates of purulent pericarditis in treated patients is nearly 40%. Our case highlights this rare diagnosis that can be easily missed and consequently lead to a fulminant course.

O-041 The logic model "Health Sciences Virtual Campus (HSVC)" in the University of Puerto Rico, Medical Sciences Campus (UPR-MSC):Title V Project, 2001-2015

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Background & Objectives: A logic model "HSVC" was created, developed and implemented to provide students with the technological tools to succeed in the 21 Century, following the goal of integration of technology in academia. Its empowerment and institutionalization in the UPR-MSC was the core focus of the Title V Project, 2001-2015. Methodology: Creation of the logic model-HSVC, as a road map for the integration of technology in the academia; support of the Institution, as a baseline for the necessary development; submission of federal grants proposals with integrated components and strategies; through quantitative and/or qualitative perspectives. Results: Four Title V's proposals were approved with a total budget of $12.38 million; two UPR' campuses impacted and empowered with improved facilities (smart rooms, computer laboratories, TVstudio and network, library infrastructure), new student services (tutoring, mentoring, virtual reference), updated technology (wireless access, IT-infrastructure, videoconference capabilities, servers), digitalization projects, library databases, assessment and on-line platforms, and web pages; the faculty/students trained in: active learning; the integration of technology (eg. mobile devices-iPads), on-line courses/tutorials, and information literacy to courses; and in e-portfolio. From 2010-2015: 42 smart rooms; 30 LCD–TV network; 338 computers (48 to professors and 220 for twelve students' computer laboratories); 22 wireless access points;

three amphitheaters with robotic cameras; a new state-of-the art amphitheater; and 222 faculty/students certified in the use of the iPad, among others. Conclusion: The creation, development and implementation of the logic model-HSVC was a key element for the improvement/enhancement/empowerment of the educational environment at UPR-MSC, 2001-2015 and beyond. Acknowledgements (Funding Sources.): Supported by the US Department of Education: Title V Grants Awards Numbers P031S010027, P031S050055, P031S060003, PO31SS100092

O-042 The Use of the iPad as an Educational Tool in Health Sciences with an Integrated Educational Scenario at the Medical Sciences Campus: 2012-2015 Cycle

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Background & Objectives: To provide students with the technological tools/skills needed to succeed in the 21 Century, an educational model for the integration of mobile technologies into the curriculum was developed at UPR-MSC, in accordance Title V Project's goal: Integration of Technology in Academia. Methodology: Since 2012 pilot projects-Use of the iPad as Educational Tool in Health Sciences-were offered with the participation of professors, students, and librarians, including: selection process; commitment; five workshops in the use of the iPad and educational applications; the design /evaluation of an instructional plan using a rubric; the presentation of a project; and the administration of pre/post tests for learning-assessment. Results: 222 professors/students were certified in 11 pilots projects (information skills, educational tool), and incorporated the iPad in at least 222 courses (2,221 students). The tests' results evidenced, for the iPad, an increase in: frequency of weekly use; number of educational apps; importance/confidence in its use in the teaching-learning process, and in academic work-related activities. Moreover, 100% of the trainees are more than satisfied with the workshops, and 99% indicated that the training activities were more than helpful to integrate the iPad into their courses. In more than 92% of the instructional plans, the pertinence of the apps to course objectives, as well as the alignment among objectives, activities and assessment strategies, were evaluated as good or excellent. Conclusion: The educational model developed is a more than effective strategy to enhance and institutionalize the integration of mobile technologies-iPad- as an educational tool into the curriculum. Acknowledgements (Funding Sources.): Supported by the US Department of Education: Title V Grant Award Number# PO31SS100092

O-043 Molecular mobility as a tool for understanding the impact of polyvinylpyrrolidone (polymer) and TPGS (surfactant) in Crystallization Kinetics of Amorphous Celecoxib

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Background/Objectives: Formulating drugs as amorphous solid dispersions is an alternative for improving the solubility of poorly water soluble drugs. The objective of our study was to understand the molecular diffusivity and relaxation dynamics of celecoxib during crystallization with the presence of a polymer (polyvinylpyrrolidone, PVP) and/or a surfactant (d-α-Tocopheryl polyethylene glycol 1000 succinate,TPGS). Methods: Binary mixtures consisting of 10 wt.% PVP or 10 wt.% TPGS, and ternary mixtures with 10 wt.% PVP and 10 wt.% TPGS dispersed in celecoxib amorphous matrix were prepared. The rheological study consisted of measuring the temperature dependent complex viscosity and loss and storage moduli (G', G") using small amplitude oscillatory shearing. Results: The viscosity curves indicated that the molecular mobility of amorphous celecoxib was impeded or facilitated by the presence of PVP or the TPGS compared to pure celecoxib, respectively. Calculated activation energy values by fitting the data near the melt temperature with the Arrhenius equation resulted in an increase in energy of ~25% with PVP and a decrease of ~35% with TPGS compared to pure celecoxib. The complex viscosity data throughout the entire temperature range studied was successfully fitted to the VTF model, and calculated strength parameters values ranged between 5 and 7. Conclusions: The impact on the crystallization of Celecoxib by PVP (polymer) and TPGS (surfactant) was studied in terms of molecular mobility. It was demonstrated that the polymer decreases the mobility of the drug, whereas the surfactant acts as a plasticizer. The dynamic viscosity of the Celecoxib with polymer and/or surfactant follows Arrhenius temperature dependence.

O-044 Generation of cnr1 and cnr2 knockouts in Zebrafish Using CRISPR-Cas9 to Assess the Cannabinoid Receptors Role in Neuronal Development

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Background & Significance: Vertebrates express two cannabinoid receptors (CB1 and CB2) encoded by cnr1 and cnr2 genes respectively. Both are activated by endocannabinoids but also Δ9-THC, the main psychoactive component in marijuana. Cannabis is the most widely used drug among teenagers and its legalization continues progressing. However, potential associated risks on the developing brain have not yet been assessed thoroughly. Both genes are expressed very early in development. Expression of cnr1 was shown in the developing brain and its transient absence in chick and zebrafish resulted in axonal fasciculation errors. However, it remains unclear if these changes are permanent and/or affecting function. Nothing is known for CB2. We generated cnr1 and cnr2 mutants in zebrafish and propose to examine CB1 and CB2 respective contribution in early CNS/PNS development. Methods: We used CRISPR-Cas9 technology to develop cnr1 and cnr2 knockouts. We targeted each gene with two guide RNAs and co-injected with Cas9 mRNA. We hypothesized that lack of one or both receptors will interfere with the endocannabinoid signaling which is necessary for proper CNS/PNS development. Results: We generated several null alleles for both genes and crossed into the F2 generation cnr1I13 (= 13 nucleotide insertion) and cnr2Δ2 (= 2 nucleotide deletions). Both mutations introduced an early stop codon probably resulting in absence of gene products in homozygotes. Identified adult F2 carriers will give us homozygotes, which will be analyzed in depth and raised. Conclusion: Our studies will be crucial in identifying the role of CB1 and CB2 during brain development. Funding: Funded by the National Institute of Drug Abuse (R01.DA037924), the National Science Foundation (HRD.1137725), MBRS-RISE (R25.GM061838) and the NIH-RCMI Seed monies (G12.RR03051).

O-045 Effect of Surface Treatments on the Shear Bond Strength of Two Resin Cements to Zirconia

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During the last decade, zirconia ceramic has been increasingly used in dentistry for its mechanical properties and the demand for esthetic restorations. The surface characteristics of zirconia make it difficult to establish a durable mechanical or chemical bond. Objective: compare the shear bond strength of immediate loading self-adhesive resin cement to adhesive resin cement following sandblasting and no treatment. Methods: Eighty (80) yttrium-stabilized zirconium dioxides were test substrates for the experiments. The specimens were sintered to 20 mm diameter X 10 mm height; then, randomly assigned to four groups: (A) self-adhesive resin luting cement bonded to untreated zirconia; (B) self- adhesive resin luting cement bonded to sandblasted zirconia; (C) adhesive resin bonded to untreated zirconia; (D) adhesive resin luting cement bonded to sandblasted zirconia. A Chatillon™ TDC 225 testing machine determined shear bond strength. Results: The mean shear bond strengths for the treatment groups were: (A) 5.1 ±2.02; (B), 7.2±1.61; (C) 13.7 ± 3.33 (D) 14.5±13.30. Wilcoxon Scores for shear bond strength showed no significant differences between the effect of treatment in groups C and D; significant differences between all other groups at $p < 0.0001$. Dunn's Test showed no significant differences between groups C and D as well as groups B and A. Conclusions: The increased strength of Rely X™ Ultimate™ can be attributed to the chemical bond between MDP-phosphate and zirconia. Mechanical modification of the surface with sandblasting significantly increased the shear bond strength of Rely X™ Ultimate™, and debatable for Rely X™ Unicem™.

O-046 Los Factores que Apoyan y Limitan la Participación de Mujeres con el Síndrome de Fibromialgia en el Ambiente Laboral en Puerto Rico

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Trasfondo y Objetivo: La Fibromialgia (FM) es definida como un dolor prolongado que incluye fatiga, problemas de sueño, dolores de cabeza, ansiedad, entre otros. Las mujeres con FM experimentan una interrupción en su rol de

trabajadoras, dejando sus empleos de manera temprana. El propósito es determinar los factores personales y contextuales que promueven y limitan la participación laboral de mujeres con FM. Método: El diseño fue secuencial exploratorio con metodología mixta. La muestra fue de 30 mujeres con FM que dejaron de trabajar. Se administró el Cuestionario de Salud SF-36v2, Cuestionario Revisado de los Efectos de la Fibromialgia (CEFR-PR) y una entrevista semi -estructurada, Escala de Impacto Ambiental para el Trabajo (WEIS) con 10 mujeres. Resultado: El SF-36v2 reveló que más de un 97. 0% obtuvo puntuaciones bajo la norma en el componente físico y mental. El CEFR-PR reflejó un impacto severo en la salud con una puntuación total promedio de 81.0 ± 16.1. La WEIS reveló que entre los factores del contexto que apoyan la participación laboral fueron la atracción por las tareas laborales, el significado del producto, el estilo del rol laboral, entre otros. Los factores que interfirieron fueron las propiedades de los objetos, las demandas de las tareas, el horario de trabajo, entre otros. Conclusión. El deterioro de salud y los factores del contexto interfirieron en el rol laboral, ambos deben ser considerados para mejorar la permanencia en el trabajo y la realización de actividades que proveen sostén y significado. Reconocimiento: Al Grupo de Apoyo GAFI.

O-047 La población que se va de Puerto Rico: tendencias, magnitud y retos

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Introducción y objetivos: La dinámica demográfica de un país incorpora el estudio de la natalidad, la mortalidad y la migración. Los cambios observados en la población de Puerto Rico a partir del s. XXI responden a un descenso marcado de la natalidad y un número considerable de emigrantes. La variable de mayor impacto ha sido la emigración. El objetivo del estudio fue analizar la magnitud y características de los flujos emigratorios en Puerto Rico e identificar los posibles retos que estos presentan para el país. Métodos: El estudio fue uno descriptivo. Se utilizaron las siguientes fuentes de información: Censos de Población y Vivienda, 1899-2010; Encuestas de la Comunidad de Puerto Rico y los Estados Unidos y Estadísticas Vitales del Departamento de Salud de Puerto Rico. Resultados: Durante el periodo de 2005 al 2014 se ha mudado hacia los EE. UU. más de medio millón de personas, un promedio anual de emigrantes de cerca de 67,000 personas. El mayor número de emigrantes se observó en el año 2014, donde se fueron cerca de 84,000 personas, aproximadamente 7,000 personas mensuales. Conclusiones: El comienzo del s. XXI muestra cifras considerables de población que se ha mudado hacia los Estados Unidos. Esta cifra histórica no solo abona al descenso marcado en población, sino que representa la salida de personas en edades productivas y reproductivas. Esto unido a la situación económica que vive el país sugiere grandes retos para su desarrollo social y económico y el ofrecimiento de servicios de salud, entre otros aspectos.

O-048 Development of Optimized Strategies for Magnetic Hyperthermia in the Treatment of Ovarian Cancer Cancer

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Background & Objectives: Magnetic hyperthermia as an experimental cancer therapy uses the heat generated by magnetic nanoparticles under alternating magnetic fields to cause a temperature rise in tumors, inducing programmed cancer cell death. Maximizing both the heat dissipation rates and nanoparticle uptake by cancer cells is a major challenge. Intracellular hyperthermia can circumvent some limitations associated with macroscopic hyperthermia, such as non-uniform temperature distribution, tumor size, and nanoparticle concentration. Objective: This work sought the optimization of nanoparticle synthesis and peptization to increase the heat dissipation rates along with the internalization of nanoparticles into cells. We hypothesize that these optimization strategies will help in the pursuit of intracellular hyperthermia. Methods: Temperature, iron concentration and sonication were varied at different levels during the co-precipitation and peptization of iron oxide magnetic nanoparticles. The maximized response variable was the Specific Absorption Rate (SAR). Nanoparticles were subsequently coated with polyethylene glycol and added to ovarian cancer cells to study the nanoparticle uptake by cells, which was quantified by UV-Vis spectroscopy. Results: SAR values up to 1,048 W/gFe (liquid) and 719 W/gFe (solid) were obtained under the identified optimal set of conditions. Vigorous peptization improved particle dispersion which leaded to higher heating efficiencies. Nanoparticle uptake by cells after 24 hours was 0.8 ρgFe/mL and additional experiments revealed that it can be significantly increased by applying low-intensity ultrasound. Conclusions: Optimization of nanoparticle synthesis yielded high energy dissipation rates using a simple, cost-effective and scalable method. Also, nanoparticle uptake by cells can be enhanced by using external stimuli. Acknowledgements: U.S. NSF UPRM CREST (HRD-0833112, HRD-1345156), PR IFN (EPS-100241) and US NIH (U54 CA 96300/u54 ca 96297).

O-049 Comparison of the amino-terminus region of TWIST vertebrate proteins: Evolution and origin of the TWIST1 glycine-rich motifs

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Background and Objectives: Twist proteins belong to the basic helix-loop-helix family of transcription factors. They are known to use domains other than the common bHLH in protein-protein interactions. Since the region of highest diversity in TWIST proteins is the N-terminus, we analyzed the conservation of this region in different vertebrate TWIST proteins and study sequence differences between TWIST1 and TWIST2. We hypothesized that the N-terminus contains functional sites that play a role in protein-protein interactions. Methods: 68 TWIST protein sequences were identified based on sequence homology in five major vertebrate classes through NCBI and UniProtKB databases using BLAST. Multiple sequence analyses (MSAs) were generated using PSI-COFFEE and T-COFFEE. FFpred-server was used to assess disordered domains and function prediction. The MSA was used to generate the phylogenetic tree using the PHYLIP maximum likelihood method and for metric multi-dimensional scaling analysis (MMDS). Results: TWIST1 resulted from a gene duplication during vertebrate fish evolution and the TWIST protein family ancestor was "TWIST2-like". TWIST1 has undergone more evolutionary drift than TWIST2. We found two conserved sequence motifs (SSSPVSP and SEEE) with unknown function in the N-terminus. TWIST1 glycine-region2 developed first in the fish group, while glycine-region1 arose afterwards within reptiles and birds. TWIST1 proteins have a disordered domain at the N-terminus, and a disordered/flexible region at the C-terminus. Conclusions: The two new conserved sequences found could be functional sites that interact with other proteins. A new protein motif signature found in the N-terminus will help reduce TWIST1/TWIST2 errors in sequence annotation in public databases.

O-050 Attitudes Towards Gays and Lesbians in a Sample of Public Health Students in Puerto Rico: A Pilot Study

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Background and objectives: Gay men and lesbian women evidence significant health disparities when compared to heterosexual individuals. Health services providers' negative attitudes towards sexual minorities can pose a barrier to health services and retention. Public health professionals in training have the potential to improve the conditions that may lead to better health status of sexual minorities. With this in mind, this study aimed to describe the attitudes towards gays and lesbians in a sample of public health students in Puerto Rico. Methods: We administered a survey using on-line and paper-based techniques to recruit students at the University of Puerto Rico, Medical Sciences Campus, School of Public Health (SPH). Survey instrument included measures of attitudes towards gays and lesbians and social distance. Data was analyzed using SPSS to generate descriptive and inferential statistics. Results: A total of n=130 students completed the survey. A third of participants (n=45, 35.7%) reported receiving some education about homosexuality at the SPH. However, 70.1% (n=82) expressed wanting to receive more information about the topic. Only 1.7% (n=2) reported prejudiced attitudes towards gays and lesbians. Being educated in homosexuality and/or lesbianism significantly correlated with low social distance (p=0.01) and moderately correlated with positive attitudes towards gays and lesbians (p=0.07). Conclusion: Results suggests that capacity building about LGBT health issues, including strategies to reduce social distance; could be effective in promoting positive attitudes among public health professionals in training. Training the next generation of public health professional on these issues may have an impact in reducing health disparities.

• Poster Presentations •

P-001 Burning out syndrome among informal care givers: relieving the burden through social network

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Burden caused by health care given to chronic disease patients is barely documented among Hispanics Informal Caregivers (HIC). Less likely is to have documented how social network (SN) characteristics are correlated to burn out syndrome (BOS) among those Hispanics. This pilot project objective was to correlate characteristics of SN with BOS among a sample of HIC in charge of recently diagnosed patients. A longitudinal design using egocentric SN analysis was performed to data collected from 23 HIC. Using STATA 13.0, the data was tabulated using nonparametric analysis. The BOS was measured using the ZARIT (α Cronbach=.92) giving scores equivalent to moderate to high BOS for 50% of participants interviewed within two weeks of diagnose disclosure. Only those with moderate/high Zarit scored were considered for this analysis. Participant's profile shows that 76.92% are women, 72.73% were legally married, age ranged between 23-78 years, and in 81.82% of the cases participants were unemployed. Correlation existed among those with BOS and reporting a deity, spouse and to have women within their SN. Inverse correlation was observed among those with higher number of men in their SN. None of the participants' characteristics or life style measured was correlated to BOS. Therefore, this pilot study suggests that the SN characteristics plays an important role in the burnout of Hispanics Informal Caregivers.

P-002 Epitheliod Hemangioendothelioma of the Lung

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Purpose: Epithelioid hemangioendothelioma (EH) of the lung is an uncommon low grade malignancy with unpredictable behavior and limited therapeutic options. Diagnosis is restricted to biopsy due to its variable symptomatology. We report a case of an EH with classical histologic findings and amyloid deposits. Case history: 53 year old woman with history of diabetes mellitus, hypertension, heroin drug abuse and tabacco use presented to the Emergency Room with left chest/axillary pain and difficulty breathing. Chest x-ray revealed bilateral pleural effusions. Thoracentesis yielded abundant serosanguinolent fluid. Chest CT scan showed bilateral pulmonary masses, more numerous on the left lung. Patient was taken to OR for pleurectomy and open biopsy procedure. Surgeons suspected metastatic disease versus mesothelioma, although no history of cancer or asbestos exposure. Clinical Approach: Incisional biopsy was performed and sent to us for consultation and immunohistochemistry studies. Biopsy findings: Histology revealed strands and nests of epithelioid cells within abundant hyalinized, myxoid and chondroid stroma filling alveolar spaces. Tumor involved the visceral pleura and vessels. The cells presented moderate pleomorphism, abundant eosinophilic cytoplasm, some intracytoplasmic vacuoles, hyperchromatic nuclei and prominent nucleoli. Immunohistochemistry showed positivity for CD31, CD34, vimentin, napsin A and a low Ki67 mitotic index. Congo red was positive within vascular walls and stroma. Hypothesis: Amyloid deposition has been reported in the past with other malignancies, but most literature on EH has not been described amyloid. Thus, we currently do not know if this is a feature of EH or an incidental finding in our case.

P-003 Role of Fasciola hepatica Glutathione S-transferase in the inhibition of Inflammatory Cytokine Expression

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Background: Autoimmune disorder prevalence has increased markedly in developed countries and it is thought that this transpires due to our excessive sanitation, which reduces the exposure to microorganisms, leading to reduced immunological regulation. Numerous studies support this hypothesis by demonstrating protective immunological responses prompted by helminths during inflammatory disorders and occasionally offset aggravated cytokine responses during sepsis. We hypothesize, based on these studies, that the helminth molecule glutathione S-transferase (GST) could exhibit anti-inflammatory properties and potentially be used to prevent or ameliorate symptoms of inflammatory disorders and sepsis. Methods: We have purified native and active GST from Fasciola hepatica, which is an antioxidant molecule that plays important roles in its survival inside the host, with a soluble extract of F. hepatica adult flukes using affinity chromatography with a GSTrap™ column. We seeded naïve bone-marrow derived macrophages (bmMØs) and evaluated how GST interacts with (bmMØs) and as well as how it influences inflammatory cytokine expression via quantitative RT-PCR. Results: Our data demonstrates that although GST is unable to activate nuclear factor NF-κB, it can suppress the expression induced by bacterial products by more than 60%. Quantitative RT-PCR analysis demonstrated that bmMØs treated with GST, previous to lipopolysaccharide, express significantly less pro-inflammatory cytokines such as, IL-1β and TNF-α, than those only stimulated with LPS alone. Conclusion: Our results

suggest that GST may have a vigorous anti-inflammatory role. In upcoming experiments, we will determine whether GST can inhibit phagocytosis and if it has a meaningful participation in the alternative activation of macrophages. Acknowledgements: We thank NIH-SCORE 1SC1AI096108-01A2 and MBRS-RISE R25GM061838-13 for their financial support.

P-004 Not all etiologies of Congestive Heart Failure are known: Spongiform Cardiomyopathy

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Purpose: Among the cardiomyopathies, a group of diseases of the myocardium that cause poor myocardial function, spongiform cardiomyopathy is very uncommon and due to its recent establishment as a diagnosis, it is not fully understood how common this condition is. The European Society of Cardiology Working group on Myocardial and Pericardial Diseases classified it as an unclassified cardiomyopathy. Case description: A 45 year old male with PMH of Diabetes Mellitus Type II and Hyperlipidemia with symptoms of oppressive and substernal chest pain during rest and exertion, exertional dyspnea, paroxysmal nocturnal dyspnea, orthopnea and lower extremities edema since 2 weeks ago. Physical exam with jugular venous distention, S3 gallop, tricuspid regurgitation and mitral regurgitation, crackles at lung bases and lower extremities pitting edema. Clinical Approach: a cardiac catheterization revealed ejection fraction of 39%, severe global hypokinetic dysfunction in the left ventricle and non-compaction of the left ventricle muscle. Clinical Findings: Echocardiogram revealed multiple trabeculation particularly in the apex and midventricular segments of the inferior and lateral wall of the left ventricle, multiple deep intertrabecular recesses communicating with the left ventricular cavity and a 2 layered structure of the endomyocardium with an increased noncompacted to compacted ratio creating a spongiform appearance. Patient was treated with the standard treatment of heart failure and is pending for Heart Transplantation. Hypothesis: Spongiform Cardiomyopathy is a rare disorder. Further studies are required to investigate about etiology and management for Spongiform Cardiomyopathy due to little awareness of this medical condition. Acknowledges: None.

P-005 Metastatic Ovarian Tumor Masquerading as Atypical Pneumonia

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Purpose: The Krukenberg tumor is a metastatic signet ring cell adenocarcinoma of the ovary and accounts for 1% of all ovarian tumors, being the stomach the primary site of metastasis. It is recognized that adenocarcinomas composed of signet ring cells metastasize to the ovaries. Case description: A 47 year old female presented with dry cough, shortness of breath and fatigue during the day and nights, since 3 weeks ago. On physical exam, with bilateral decreased breathing sounds, with hyper resonance to percussion were found. Clinical Approach: Chest CT scan showed an incidental finding of diffuse wall thickening of the stomach, pleural effusions with Left retropectoral and mediastinal AP window lymphadenopathy was noted, worrisome for metastatic lymphadenopathy from the stomach. CT scan of the abdomen showed a right lower quadrant 6.8 x 6.5 x 10.3 cm solid and cystic mass favored to the ovarian; diffuse retroperitoneal, periaortic and mesenteric root adenopathy; with perihepatic, perisplenic and bilateral paracolic gutter ascites. Clinical Findings: CT guided biopsy of the pelvic mass revealed tumor cells positive for CK 7/CK 20, consistent with a diagnosis of adenocarcinoma with focal signet ring cell features suggestive of Krukenberg Tumor. Hypothesis: The metastasis of gastric carcinoma to the ovaries has been a mystery, but it is now evident that retrograde lymphatic spread is the most likely route of metastasis. Prospective studies are needed to set a therapeutic approach for Krukenberg tumors in the hope of improving the survival rate. Acknowledges: None

P-006 Estudio sobre los efectos del ascenso del nivel de mar en la ciudad de Cancún, México

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El ascenso del nivel del mar (ANM) es uno de los principales efectos del cambio climático, y entre sus contribuidores se encuentran el calentamiento de los océanos y la transferencia del agua almacenada en la tierra al mar, particularmente por el derretimiento de glaciares. Esta investigación busca identificar la infraestructura de salud que se vería afectada por el aumento del nivel del mar en la ciudad de Cancún, ubicada en el estado Quintana Roo en México. Para hacer esto, se prepararon mapas utilizando Sistemas de Información Geográfica con polígonos de las zonas que se proyecta se verán afectadas por el ascenso

de uno y cinco metros del nivel del mar y se identificó la infraestructura que se encuentra dentro de estos polígonos. Al analizar estos mapas, se observa que con el aumento de un metro en el nivel del mar, no se vería afectada mucha infraestructura, si no que el impacto mayor lo recibe el sistema de lagunas Nichupté. Por su parte, en el escenario de aumento de cinco metros del nivel del mar, se observa que hay mucha infraestructura que se vería afectada, como hoteles, restaurantes y parques, y el impacto en el sistema de lagunas Nichupté es más severo. Se puede concluir que el ascenso del nivel del mar afectaría adversamente la calidad de vida y la economía en la ciudad de Cancún, cuyo pilar económico es el turismo, por lo que se recomienda se tomen las medidas preventivas y adaptativas necesarias para mitigar los efectos del ANM.

P-007 Vulnerabilidad de la comunidad de Nassau, Bahamas ante el Ascenso del Nivel del Mar durante los años de 2005, 2105 y 2505

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El propósito principal de este estudio fue medir el impacto del ascenso de nivel del mar (ANM) en los servicios de salud y la infraestructura esencial para el funcionamiento urbano, así como su posible impacto en la seguridad poblacional en Nassau, Bahamas. Se contrastó y modeló el posible efecto de un aumento del nivel del mar en un (1) metro y cinco (5) metros con respecto a la situación actual. Para la generación de este análisis se utilizó el modelo digital de la NASA existente en la siguiente web: http://flood.firetree.net, la aplicación virtual de Google Earth y el programado de ArcGIS. Este estudio permitió la observación a corto (100 años) y largo plazo (500 años) del impacto de ANM y su efecto en las inundaciones tanto internas como externas, así como la vulnerabilidad de sus habitantes. Los servicios más afectados fueron: las áreas culturales y turísticas, y las carreteras limitando el acceso a los servicios y centros de salud. En el escenario más extremo todas las áreas son impactadas. Sin embargo, en el caso de Nassau Bahamas las inundaciones internas provienen principalmente de los lagos y estanques, diferente a lo proyectado para algunas islas del Caribe.

P-008 Localization of Tachykinin Receptors in Mouse Colon

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Background & Objectives: The Enteric Nervous System (ENS) is comprised of neurons that are surrounded by glial cells. Recent evidence has illustrated the functional role of glial cells in a myriad of aspects of gastrointestinal physiology and pathophysiology. Irritable Bowel Syndrome (IBS) is a multifactorial gastrointestinal disease caused by alterations in the ENS. However, the role of enteric glial cells (EGC) in this disease state is still unknown. As such, we wanted to see if tachykinins (TKs) are involved in glial changes during IBS. TKs act as neurotransmitters in the central and peripheral nervous system to provide a link for bi-directional interactions between EGC and neurons. The binding of neurokinin receptors (NKR) is responsible for the regulation of motility in the ENS. The purpose of this study was to localize NKR to EGC a to better understand the role of NKR activation on glial cells. NKR are responsible for various effects such as smooth muscle contraction, inflammatory processes, hypotensive effects, and stimulation of gland secretion. Methods: To localize expression on EGC, we used fixed mouse colon preparations and performed immunohistochemistry to identify different NKR subtypes. Results: Our preliminary data suggests that NK2R, a specific NKR subtype, is expressed on EGC, suggesting a role of TKs in neuron-glial communication. Furthermore, the data suggest that NK1R and NK3R subtypes are not expressed in EGC. Conclusions: Our results suggest that NKR expression is region specific and thus co-localization of NK2R and enteric glial cells in the human colon is still to be determined. Acknowledgements: This research was supported by NSF Endure grant.

P-009 Hypercalcemia and acute kidney failure: an approach by the urine protein sulfosalicylic acid precipitation test

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Purpose: We present the following case in order to discuss an old but important approach to hypercalcemia and acute renal failure (ARF). Case description: An 84 y/o male with hypertension and type 2 diabetes mellitus presented to the emergency department after being called by his primary care physician since routine labs showed an abrupt increase in creatinine in 4 months. Clinical approach: The patient reported feeling well except for a decrease in appetite and weight loss of 6lb since last seen. He was admitted to the medical ward. Clinical findings: Labs were remarkable for a creatinine of 5.5 from 1.8mg/dL, hyperkalemia (7.1mEq/L), hypercalcemia (10.6mg/dL), and anemia (10g/dL). Differential diagnosis at the moment was hyperparathyroidism versus malignancy, but also multiple myeloma due to concomitant anemia and ARF. A bedside urine protein sulfosalicylic acid precipitation (SSA) test was performed and remarkable for grading of 4+, suggestive of Bence-Jones proteinuria. Therefore, a skeletal survey was

performed which demonstrated punched-out bone lesions. Serum and urine protein electrophoresis were requested and case consulted to Hematology-Oncology. Hypothesis: The initial diagnostic approach to hypercalcemia is to determine its relation with PTH since primary hyperparathyroidism and malignancy are the most common causes: more than 90% of cases. This case emphasizes the need to look at the complete picture: an increase in calcium with ARF must alert the physician of a plasma cell dyscrasia. Moreover, this unfortunate case demonstrates that a high suspicion for multiple myeloma can be approached with the quick and cost-effective bedside urine protein SSA test, accelerating diagnosis and treatment possibilities for a patient.

P-010 Attitudes and perceptions of Computerized Based Tests (CBT) in students at a Doctor of Pharmacy Program at the onset of its implementation

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Background & Objectives: This study main objective was to measure attitudes, perceptions, and the degree of association between them towards Computerized Based Tests (CBT) at the onset of its implementation in a pharmacy program. Attitudes and perceptions of students towards CBT are important because they are crucial to the acceptance and implementation of this assessment model. CBT is instrumental for schools of pharmacy to demonstrate effective preparation students to accreditation agencies. Methods: This is a pre-experimental design with correlational scope. A previously validated electronic Likert scale questionnaire (α=0.936) collected demographic information and data to measure attitude towards tests (α=0.764), attitude towards computer use (α=0.843), attitude towards CBT (α=0.940), and perception towards CBT (α=0.733). Descriptive statistics, Pearson correlation analysis, multiple linear regression, and ANOVA were performed to examine the degree of association between variables and other associated factors. Results: A total of 130 students participated in the study. A strong correlation (r=0. 822; p=0.000) was found between the student's perception and attitudes towards the CBT. The multiple regression model showed that perception of the CBT is the highest contributor (β=0.761; p=0.000) to explain variances in student attitude towards CBT. ANOVA showed that there were no significant differences (p=0.747) between the attitude towards tests and attitudes towards CBT. Conclusion: This study demonstrates that student perception makes the strongest contribution and is directly associated with attitudes towards CBT, and that there are no significant differences between the attitude towards taking tests (in general) and taking them in a CBT scenario. Acknowledgements: We appreciate the School of Pharmacy Administrators, Faculty and Students participation in this study.

P-011 Self-perceived and Real Body Weight Among Adolescents at an Ambulatory Psychiatric Clinic

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Background: Despite efforts to reduce obesity in US the number of obese people has not declined; from 2011-2014 more than 33% of adults and 17% of youth were obese. For children and adolescents aged 2-19 years, the prevalence of obesity has remained fairly stable (≅ 17%) and has affected about 12.7 million children and adolescents in the past decade. Obesity remains a serious major public health problem that increases the risk of developing both short-term and long-term health and psychosocial problems. Accurately perceiving oneself as overweight or obese has been related to greater motivation to change lifestyle behaviors which are associated with increased risk of obesity. Objective: To determine self-perceived weight in adolescents 14-17 receiving clinical services at a Hispanic Ambulatory Psychiatric Clinic. Method: A Secondary analysis of a cross sectioned study (IRB Protocol # A8500114) was done. A total of 32 teens (91%) receiving services at "Centro Para Tu Salud Emotional –N/A " assented and their parents/guardian consented to their participation. Patients with diagnosis of mental retardation, acutely psychotic, or incapable to give assent were excluded. A 35-item self-administered questionnaire including questions about computer and/or videogames use and self-perceived weight was completed. Results: Half of these patients (50.0%) considered their weight appropriate, 25.0% perceived themselves as overweight/obese, and 25.0% as thin. Almost half (45.45%) of the overweight/obese patients perceived themselves as underweight /healthy (p=0.00052). Conclusion: Clinicians should include the perception of weight status in their assessment of adolescents in order to improve the effectiveness of obesity prevention strategies.

P-012 Overexpression of HPV E6, E7 mRNA as a Reflex Test for HPV DNA: A Preliminary Study

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The increasing number of high-risk Human Papilloma Virus (HPV) cases in Puerto Rico has made HPV screening a critical part of the Puerto Rican woman's medical evaluation. Current cervical cancer screening relies on cytological diagnosis and HPV DNA detection. This screening method identifies women at risk of developing cervical cancer but fails to distinguish which low-grade lesion will progress. This study was designed to compare the over expression of viral oncoproteins E6/E7 using HPV OncoTect® E6 E7 mRNA assay and the identification of HPV 16 or 18 using Cobas® HPV DNA assay in high-risk HPV samples. Two-hundred and seventy four high-

risk HPV positive cervical samples were randomly selected from OB/GYN clinics around Puerto Rico. Samples were tested by both assays performed according to manufacturer's instructions. The HPV OncoTect® method measures the quantity of E6 E7 mRNA in each cell. It uses molecular in situ hybridization for detecting HPV E6 E7 mRNA in intact human cells and flow cytometry for cell-by-cell analysis. Cobas® HPV simultaneously detects 14 high-risk HPV types and provides specific genotyping information for HPV Type 16 and 18. It utilizes amplification of target DNA by the Polymerase Chain Reaction (PCR) and nucleic acid hybridization. The Cobas® HPV genotyping method detected positive HPV 16/18 in 41 of the 274 samples (16.0%). The HPV OncoTect® test detected overexpression of E6 E7 mRNA (>2.00%) in 161 of the 274 samples (58.7%). Total agreement of both methods was 45.3%. The HPV OncoTect® E6 E7 mRNA assay demonstrated a higher positive rate.

P-013 Arch Form and Malocclusion are Related to BMI in Children

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Objectives: Dental malocclusion and obesity are both prevalent in the Americas with an estimated 65-70% of the population presenting with dental malocclusion and at least 33% of the population being overweight or obese. The aim of this study is to determine if a relationship between BMI and dental arch form exists. Methods: Three-dimensional coordinate data, 26 landmarks in total, were collected from pre-treatment dental casts of n=47 individuals aged 11 to 25 at the School of Dental Medicine, University of Puerto Rico. This landmark data was submitted to principal components analysis (PCA) to determine the most important aspects of dental arch variation present in the sample. PC scores were then regressed against BMI to determine if patterns of dental arch variation were related to increased BMI values. Results: The top three principal components (accounting for a total of 81.2% of the total shape variation) were analyzed to determine if a relationship existed with BMI. PC1 (65.6% of the total variance) and PC3 (6.8% of the total variance) both demonstrated significant relationships with BMI. Along PC1, individuals with scores indicative of an antero-posterior (AP) dental arch discrepancy where the mandibular arch was protrusive beyond the maxillary arch, were significantly ($p<0.01$) related to an increase in BMI ($r=0.37$). Likewise, PC3, which highlights variation in mandibular arch protrusion and dental arch widths was significantly ($p<0.01$) correlated with BMI ($r=-0.46$). Conclusions: While the causes of malocclusion and obesity are multifactorial in nature, this preliminary study demonstrates that there is a significant relationship between patterns of dental arch form indicative of a Class III malocclusion and increased BMI values in Puerto Rican children.

P-014 Management of Spinal Chordomas: A Case Report

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Purpose: Chordomas are rare and recurrent tumors of the spine originating from embryonal notochord. The gold standard therapy for chordomas is total resection, which confers a disease-free interval of 2.27 years. Because of the aggressive nature of en bloc resection, we want to know if older patients benefit from subtotal resection with adjuvant radiation. It has been described that the latter therapeutic combination provides a disease-free interval of 2.12 years. Case description: We report 73-year-old female patient with persistent pain in the sacral region for 2 years. Clinical approach: MRI was performed and revealed a mass arising from S1. The lesion was biopsied and the diagnosis of chordoma was confirmed, for which the patient went subtotal resection. In the operating room, an incision from L4-S4 was made. Neuronavigation and neurophysiological monitoring were used to assess tumor location and nerve function respectively. A dissection was performed and an L5 laminectomy with tumor excision was achieved. Clinical findings: We resected a 5 cm mass, histologically confirmed as chordoma. Patient recovered satisfactorily without loss of bladder or anal sphincter tone. She had no focal neurologic, motor or sensory deficits. Patient has been followed for 6 months and no recurrence of disease has been detected on imaging. She is receiving adjuvant treatment with stereotactic radiosurgery. Hypothesis: Chordomas are classically treated in a complicated and aggressive manner. If similar outcomes and less complications are obtained with subtotal resection and adjuvant radiotherapy, this should be an option to be considered.

P-015 Do Adolescents Avoid Sleep to Play Videogames?

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Background: The National Sleep Foundation recommends adolescents to sleep 8-10 hours /day, but they usually don't comply. Insufficient sleep is linked to increased risk of unintentional injuries and death, poor school performance,

and behavioral problems. There are physiologically –driven sleep needs and patterns, but also behavioral and psychosocial factors that may influence sleep patterns. Activities associated with not getting sufficient sleep each night include the access to technology such as the use of computers and videogames. Objective: To determine if adolescents decreased sleep time to play videogames. Method: A Secondary analysis of a cross sectional study (IRB Protocol # A8500114) was done. A total of 32 teens (91%) receiving services at "Centro Para Tu Salud Emotional –N/A (CaPSE)" assented and their parents/guardian consented to their participation. Patients with a diagnosis of mental retardation, acute psychosis, or incapable to give assent were excluded. A 35-item self-administered questionnaire, which included questions about computer and/or videogames use and sleep habits was completed. Results: About 7% of adolescents reported sleeping less than 5 hours/day in the last week , 57 % slept 6-8 hours, and 37% more than 8 hours; 13% reported avoiding sleep in order to play videogames. Conclusion: There is no significant association ($p>0.05$) between average hours of sleep and sleep avoidance to play videogames. All teens who reported avoiding sleep, slept 6-8 hours/night. Since lack of sleep can have adverse outcomes, it's important for clinicians to explore duration of sleep and the risk of technology interference with adolescents sleep habits.

P-016 IgG-4 Related Lymphoproliferative Disease (LPD) with Sjogren's Syndrome-like Presentation Responsive to Rituximab

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Purpose: IgG-4 related diseases are characterized by lymphoplasmacytic infiltrates, IgG4-positive plasma cells, and CD4+ T lymphocytes in multiple organs, including lymph nodes, lungs, kidneys, pancreas, salivary and lacrimal glands. Actually, there is not standard treatment for this condition. Case Presentation: A 65 y/o female with dacryoadenitis of the left lacrimal gland resembling Sjogren's Syndrome. Throughout 3 years, there was involvement of salivary glands, inguinal nodes, and membranous glomerulonephropathy with variable response to steroids. Clinical Approach: Biopsies of lacrimal and submandibular glands, inguinal lymph node, and kidney were performed. Specialized anti-IgG-4 immunohistochemistry test and IgG-4 serum was employed. Clinical Findings: On histological samples, there were consistent plasma cells, interstitial infiltrate in organs, without evidence of lymphoma or malignancy. There were high levels of IgG-4 subclass in serum and lymph nodes with persistently elevated levels of erythrocyte sedimentation rate, consistent with diagnosis of IgG-4 related LPD. After diagnosis of IgG-4 related LPD, Rituximab monotherapy was recently initiated and patient is responding to this treatment as evidence by decreased proteinuria. Hypothesis: The inconsistent presentation and rarity of this condition represents a very challenging diagnostic task. It is of great importance to be aware of the clinical manifestations of this disease, as it can be easily mistaken with other disorders. This case presents a good sample of a potential therapy for IgG-4 related LPD, since there is no standard treatment for this condition and this patient is responding well to Rituximab that is a monoclonal antibody medication.

P-017 Acute Intoxication with Gabapentin: Clinical Presentation and Outcomes

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Purpose: Gabapentin is an antiepileptic drug approved in the treatment of partial seizures and postherpetic neuralgia in adults. It is also used for the treatment of many disorders, including diabetic neuropathy. In the literature, only rare cases of overdose-related adverse effects have been reported. Case description: A 57 years old male patient with medical history of arterial hypertension and diabetes mellitus type 2 was brought to our emergency room after being found lethargic, one hour after ingesting more than fifty pills of Gabapentin, in a clear suicide attempt. Clinical Approach: Upon evaluation, patient was found unresponsive, and was placed on mechanical ventilation. The patient was admitted for ventilator management and supportive measures. Clinical findings: Laboratory tests, including blood and urine toxicology screen were negative. Imaging studies did not reveal any acute pathology. Seventy two hours after admission, patient was having spontaneous respirations and neurological status began to improve as he was following simple commands. On the fifth day of hospitalization, patient was successfully extubated and transferred to an inpatient psychiatry ward to continue medical care. Hypothesis: This case illustrates the clinical progression of an acute intoxication with gabapentin. This is one of the few cases presenting an intentional, non-fatal gabapentin overdose not related with the presence of other drugs or substances. An understanding of the proper use, dosing and side effects of this commonly used drug is vital, since the survival of an acute intoxication is dependent on early recognition and the availability of medical support.

P-018 Seroprevalence of H. pylori in Puerto Rico

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Background: Gastric cancer (GC) is the 2nd leading cause of cancer death worldwide and one of the leading causes of cancer death in Puerto Rico. Helicobacter pylori infection is a major risk factor for GC. However, the prevalence of H. pylori among Puerto Rican Hispanics (PRH) is unknown. This study aimed to determine the seroprevalence and associated risk factors for H. pylori infection among PRH. Methods: A cross sectional study was designed using an existing population-based biobank collected in the parent study "Epidemiology of hepatitis C in the household population of Puerto Rico". Seroprevalence was determined using the Premier™ H. pylori enzyme immunoassay. H. pylori prevalence was estimated using logistic regression models according to sociodemographic characteristics. Pairwise comparisons according to H. pylori status were assessed using the Student's t-test or Mann-Whitney test for continuous outcome variables, and the χ^2 test or Fisher's exact test for categorical outcome variables, when appropriate. Multivariable log binomial regression models were fitted to estimate the prevalence ratio (PR) with 95% CIs for H. pylori seropositivity. Results: 528 serum samples were analyzed. Age, place of birth, marital status, years of education, annual family income, health insurance, place of residence, and population density were significantly associated with H. pylori seropositivity ($p<0.05$). Conclusions: This is the first report of the seroprevalence of H. pylori in the PRH population. The observed health disparities among PRH with regards to H. pylori seroprevalence may impact the incidence of GC and warrant further investigation.

P-019 Transport Risk Assessment in Pediatrics Score Predicts Clinical Course of Critically Ill Children

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This study evaluates the relationship of transport time to a pediatric intensive care unit (PICU) on patient's clinical outcome and the relationship between the Transport Risk Assessment in Pediatrics (TRAP) Score the Pediatric Risk of Mortality (PRISM III) score and patients' clinical outcome in PICU. Prospective observational study including pediatric patients admitted to a tertiary PICU in Puerto Rico from August 2014 to August 2015. Vital signs along with time of referral of patients transferred to the PICU was collected via phone call prior to transportation and used to calculate the TRAP score. Outcomes were measured as length of stay at PICU and death. Descriptive statistics and logistic regression were used to analyze data. A total of 79 patients met inclusion criteria, 38% females, 62% males with a mean age of 84.7 months. There was no association between time of transportation and mortality or LOS. There was a mean PRISM score of 5.3 and a mean TRAP Score of 3.2. Mortality rate was 5.1%. There was an association between mortality and PRISM score ($p = 0.02$). An association with mortality and a high TRAP score was observed ($p = 0.007$). A Mann-Whitney test showed that patients with a TRAP score greater than 5 were associated with a prolonged LOS at the PICU ($p=0.002$). TRAP score predicted morbidity and mortality among this sample of patients. More studies are needed to further assess and improve the safety of pediatric patients at high risk of clinical deterioration.

P-020 Decaying Teeth Leaves You Out of Breath

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This is a case of a 67 y/o male that was brought to the emergency room complaining of several days history of right costal pain with radiation to the right hemi thorax associated with, shortness of breath, fever, chills, fatigue and diaphoresis of several days of evolution which had gotten worse with time. The patient was found diaphoretic, with pain on the right costal area markedly increasing with respiratory effort with radiation to the right thorax and low grade fever (37.7). Laboratory findings are remarkable for leukocytosis (WBC 14.1), anemia (Hemoglobin 11.0). Chest CT scan reveals extensive opacification of the right lung compatible with a loculated fluid pocket of approximately 12 cm x 8 cm at the right lung base. Diagnostic considerations included an empyema, an infectious, inflammatory or malignant process. The diagnosis of right lung empyema was made. Throracentesis on the right side was performed and the result revealed abundant WBC: 2225 mm3, PMN: 89 %, Glucose 3 mg/dl, LDH 2008. Gram positive cocci and anaerobic bacteria were cultivated compatible with a diagnosis of right lung empyema. The source of primary infection for this patient was the poor oral hygiene with multiple decayed tooth and dental abscesses.

P-021 Hepatorenal Syndrome Secondary to Spontaneous Bacterial Empyema in a Cirrhotic Patient

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Purpose: To discuss an atypical presentation of hepatorenal syndrome (HRS), which is characterized by acute renal failure in cirrhotic patients secondary to severe circulatory dysfunction, as seen in sepsis. Case presentation: We present the case of a 33 year old male with history of chronic liver disease who presented to the ED with shortness of breath that had progressively worsened since being discharged from the hospital less than one week prior. Upon evaluation he was in respiratory distress, jaundiced, and edematous. Clinical Approach: The patient was taken to critical care area and started on broad-spectrum antibiotics for suspected nosocomial pneumonia and sepsis. Clinical findings: Initial workup showed hyperbilirubinemia, acute renal failure, and metabolic acidosis. Despite treatment, the patient continued with respiratory distress and was subsequently intubated. Post-intubation chest x-ray showed complete left lung opacification, consistent with fluid accumulation. The decision was made to perform a bedside thoracentesis for symptomatic relief of suspected massive hydrothorax/empyema. Follow up chest x-ray showed lung re-expansion; despite this, the patient continued deteriorating, and died shortly after admission to the intensive care unit. Cultures obtained from pleural fluid were positive for E. coli. Hypothesis: SBE is a rare and under-diagnosed complication in cirrhotic patients, which can be fatal. HRS can develop secondary to acutely deteriorating liver function, along with a septic insult such as SBE. SBE should be considered in all cirrhotic patients with SIRS and no focal sign of infection, in order to prevent complications such as HRS. Acknowledgements: none

P-022 ApoA1 rs2070665 SNP and Prostate Cancer Severity in a Cohort of Puerto Rican Men

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Background: Prostate cancer (PCa) is the leading cause of cancer-related death in Puerto Rican men. ApoA1 is part of the HDL cholesterol carrier which has been associated to risk and severity of PCa. The aim of this study was to evaluate the association of rs2070665 SNP in ApoA1gene with PCa severity in a cohort of Puerto Rican men. Methods: DNA was extracted from 512 FFPE non-tumor seminal vesicles from radical prostatectomies (RP). Genotyping was done by RT-PCR. Severity was defined using the RPs Gleason Score and Tumor Stage. Contingency tables were generated to assess the relationship of cohort's characteristics (age, Body Mass Index (BMI) and Prostate Specific Antigen (PSA) levels) with PCa severity. Crude and adjusted logistic regression models were fitted to estimate the odds ratios with 95% CI to define these relationships. RESULTS: Mean age was 58.2 years, 80.5 % were overweight/obese (O/O), 69.5% exhibited PSA ≥4.0 ng/mL, 95.2 % had at least one mutated allele (A/G) and 28.1% had high severity PCa. Age and PSA had a statistically significant relationship to PCa severity ($p < 0.05$). After controlling for age, PSA and BMI, we found no statistical significance ($p=0.139$) between ApoA1 rs2070665 and PCa severity. Conclusions: In this cohort, presence of rs2070665 does not seem to be related to PCa severity. In the O/O group, those patients with at least one mutated allele had a tendency to lower severity. Further studies are warranted to elucidate the effect of the heterozygosity of ApoA1 in PCa severity. Acknowledgements: RCMI at MSC (G12MD007600) and U54MD007587 (PRCTRC) from the NIHMD, NIH. (IRB 8860212).

P-023 Case of a Patient with Maple Syrup Urine Disease

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Purpose: Maple Syrup Urine Disease (MSUD) is a rare disease that can cause brain dysfunction. There is poor evidence of how to manage these patients in the OR setting. The aim of this case report is to provide information in order to prevent medical complications in this population. Case Description: A 17y/o male patient arrived to OR for an elective dental extraction under general anesthesia. Clinical Approach: Patient remained approximately 14 hrs on NPO. An IV was taking, in holding area, and D5W with .45% normal saline started. Standard monitoring was began. General induction was given with propofol 1.2mg/kg, fentanyl, midazolam and succynilcholine. Mantained intraop anesthesia with sevoflurane and O2. Total IV fluids given was 12ml/kg/hour (total time 2 hrs). A total of 600 of U/O(300/hr). Clinical findings: ABGs: pH7.44, pCO2 33.7, pO2 415.1, HCO3 23.7, BE -1.0, showed metabolic acidosis with increased anion gap of 18.4 Meq/l. Anesthesia was uneventful. After surgery patient was discharged home. Discussion: Patients with this condition are in a catabolic state which predispose them to dehydration and hypoglycemia that can be exacerbated by prolonged stress periods. Is important to hydrate and prevent hypoglycemia with intravenous glucose. Long periods of NPO should be avoided to prevent protein breakdown and increased levels of branched amino acids. At the same time, fasting may produce an acidic environment. In patients with convulsion, the use of propofol or ketamine for anesthesia has been proposed. Hypothesis: Awareness of Anesthesia staff in how to manage MSUD patients is needed. Acknowledgements: None.

P-024 Viral Signs: an Unexpected Manifestation of Influenza A

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95 year old Hispanic male with past medical history of hypertension, coronary artery disease, prostate cancer, and hyperlipidemia who was brought to emergency department due to quantified fever (101 F), chills, rhinorrhea, dry cough, myalgia, arthralgia and general malaise since 2 days ago. Physical examination with pharyngeal hyperemia, dry oral mucosa and mild tender cervical lymphadenopathy. Laboratories consistent for no leukocytosis, stable hemoglobin/hematocrit and platelets levels, chemistry remarkable for pre-renal azotemia and no electrolytes disturbances. Rapid influenza test from nasopharyngeal swab was positive for Influenza A. Chest X-ray with no acute cardiopulmonary pathology. Patient was admitted with diagnostic impressions of acute kidney injury due to dehydration and Influenza A. He was started on isotonic intravenous fluid expansion and oseltamivir to complete 5 days. Three days after admission patient developed malar-like non-blanching erythematous/purpuric lesions extending over both cheeks below the eyes, sparing the nasal bridge, with similar lesions over the dorsal aspects of both hands and the dorsal aspect of both feet; lesions between the 2nd and 3rd toes of the right foot were also found. Vasculitis work up was ordered and remarkable for decreased complements (both C3 and C4), with rest of work up negative. Tests for infections with Hepatitis C and HIV were negative. CRP-HS, LDH and CPK were slightly elevated compared to admission levels with normal sedimentation rate. Dermatology service was consulted for biopsy of patient's lesions. Biopsy results were remarkable for leukocytoclastic vasculitis. The classic manifestations of Influenza A virus infection could include fever, chills, rhinorrhea, sore throat, cough, headache, myalgia and general weakness. Cutaneous manifestations associated and observed with Influenza A virus generally presents with maculopapular eruptions. Leukocytoclastic vasculitis is a benign localized self-limited cutaneous disease. Histologically, is identified by vascular damage and neutrophilic infiltrate surrounding and disrupting small vessels associated with fibrin deposits and nuclear debris (leukocytoclasia). In medical literature there have been few cases reported of leukocytoclastic vasculitis associated with Influenza A virus infection, majority of cases reported have been secondary to administration of Influenza A vaccine. Leukocytoclastic vasculitis is usually secondary to an infection caused by Adenovirus, Enterovirus, Hepatitis B, Hepatitis C, HIV, and Parvovirus B19 infections. Nevertheless, few of these cases were confirmed by a skin biopsy. In medical literature this could be the first case of an elderly patient developing leukocytoclastic vasculitis secondary to Influenza A infection and confirmed by a skin biopsy

P-025 Validating P120 Interactions with COPS5 and SALL4

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Background & Objectives: Catenins play a major role in embryonic development and cancer progression. p120-catenin belongs to the p120-subfamily of catenins, which are widely known for their roles in cell adhesion. p120 is capable of influencing cytoskeletal activity by interacting with small GTPases. Additionally, emerging evidence suggest that p120 may have significant roles in gene expression. Even though p120 has been shown to respond to Wnt signaling, the pathway for p120 function and regulation has not been completely unraveled. Recently, a yeast-two-hybrid assay performed by the McCrea lab using p120 as bait and a mouse embryonic stem cell library suggested COPS5 and SALL4 as possible p120 binding partners. COPS5 is a member of the COP9 signalosome responsible for modulating E3 ligase ubiquitination and Sall4 is a transcription factor involved in pluripotency maintenance and self-renewal. Validation of these interactions could point to novel functions of p120 in protein degradation and stemnnes control. Methods: To validate these interactions we transfected human embryonic kidney cells with DNA constructs coding for epitope tagged versions of p120, COPS5 and SALL4. We then performed co-immunopreciptations and western blotting to pull down and visualize the proteins. Results: Our results could not confirm the hypothetical interactions under study due to the behavior of the negative control. Conclusion: We managed, however, to identify experimental modifications that could improve results of future experimentation.

P-026 Rare Cause of Abdominal Pain in an Adolescent: Gastric Adenocarcinoma

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Gastric adenocarcinoma is very rare in children, accounting for 0.05% of pediatric malignancies. We present a 17-year-old boy with intermittent upper abdominal pain for 2 months associated to vomiting and scleral icterus. Initially, he presented epigastric pain and workup revealed pancreatitis. An abdominal ultrasound (US) showed biliary sludge, otherwise, unremarkable. Symptoms improved with bowel rest and analgesics. One week after discharge, he developed icteric sclerae, jaundice and epigastric pain. Repeat abdominal US revealed biliary duct dilation and laboratories consistent with pancreatitis and transaminitis. Cholecystectomy was performed and pathology revealed chronic cholecystitis. He also had an endoscopic retrograde cholangiopancreatography (ERCP) and a stent placed in the biliary duct. His symptoms

improved. One month later, he presented epigastric and left sided abdominal pain, nausea and non-bilious emesis that gradually evolved to be coffee-ground. Again, he was diagnosed with transaminitis and pancreatitis and a larger stent was placed via ERCP. During this procedure, endoscopy revealed gastric varices, gastritis, duodenitis and a hiatal hernia. Biopsies were obtained. At that time, he also developed severe hypertension, non-oliguric acute kidney injury, normocytic, normochromic anemia, thrombocytopenia and hyperbilirubinemia. In view of these findings, was transferred to our institution for pediatric nephrology evaluation. Three days later, his gastric biopsy revealed a poorly differentiated adenocarcinoma of gastric origin. Chemotherapy was commenced and led to partial remission with subsequent decease 2 months later. High index of suspicion is required to diagnose gastric adenocarcinoma due to its rarity and non-specific symptoms.

P-027 Síndrome de Estrés Post Traumático y el Soporte Social percibido en el Personal de Enfermería que Trabaja en una Unidad de Trauma

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Trasfondo. El personal de enfermería que trabaja en una unidad de trauma se expone a eventos traumáticos que ocacionan estrés constante tornándolos vulnerables y podrían desarrollar el sindrome de estrés postraumático PTSD (Ariapooran, 2013). Objetivos. 1) Analizar frecuencia y severidad de síntomas de PTSD en personal de enfermería que trabaja en una unidad de trauma. 2) Analizar nivel de apoyo que tiene este personal a nivel familiar, personas significativas y amigos y 3) Relacionar apoyo social percibido con PTSD en este personal. Método. Estudio descriptivo correlacional con una muestra de 80 enfermeras/os de la unidad de trauma. Los instrumentos de medición son: Escala Modificada de Síntomas de Desorden de Estrés Post-Traumático (Falsetti, 1993) y Escala Multidimensional de la Percepción del Soporte Social (Zimet 1988). Resultados. El 38 (71.7 %) eran del género femenino y 15 (28.3 %) del género masculino. El 32 % presentó síntomas de PSTD. Hubo correlación negativa y significativa entre la frecuencia del PTSD con el apoyo familiar (-rho=.352, p<.05) y con el apoyo social en general (rho=-.317, p<.05). Similarmente, esta relación también se encontró entre la severidad del PTSD y el apoyo familiar (rho=-.350, p <.05) y apoyo social (rho=-.281, p<.05). Conclusión. Los hallazgos indican que existe una relación estadísticamente significativa entre el PTSD y el apoyo social, son valiosos para promover el desarrollo de proyectos de apoyo para este personal. El estudio implica que el PTSD debe ser reconocido como una posible consecuencia de eventos traumaticos experimentados por las enfermeras en su practica.

P-028 Emergency Department Visit Of A Previously Healthy Adolescent With Acute Neurologic Deficit

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Background: Acute neurological deficits in previously healthy adolescent encompass a very large differential diagnoses that includes illicit drugs, poisons exposure, trauma, seizures, intracerebral mass, and Cerebrovascular Accident (CVA)/ stroke. While information about pediatric stroke epidemiology is limited, the average annual incidence of hemorrhagic and ischemic stroke is 2.1/100,000 per year. In the pediatric population, ischemic stroke and hemorrhagic strokes are about equal in incidence in contrast to adults were ischemic strokes accounts for 85%. Also, 66% of affected children are burdened with irreparable neurological damage or seizures, 25% will have recurrence, and 10-15% will die. Case presentation: 17 y/o male brought by EMS after allegedly having a syncopal episode while riding his bicycle. No previous history systemic disease was reported. Physical exam was pertinent for Rt sided hemiparesis, aphasia, preferential gaze and RT sided hemineglect. On arrival an, NIH stroke scale of 18 was noted. Given history syncope, he was promptly escorted for a head/ neck computed tomography (CT). It showed a LT sided hyperdense middle cerebral artery (MCA) which is consistent with an acute CVA. Conclusion: Although a rare event by all standards, CVA in children must be excluded when presenting with focal neurological deficits. Given clinical findings were consistent with CT results, the patient was transferred for a neurological and neurosurgical evaluation. Endovascular evaluation and MRA scan confirmed dissection with thrombus formation of the Lt internal carotid artery as the cause for the left MCA stroke. Carotid dissection in childhood is rare, as in our patient. However, emergency physicians should consider it in the differential diagnosis when hyperdense MCA sign is detected in an adolescent. High index of suspicion is crucial in order to make early diagnosis, facilitate proper interventions/ treatments and to avoid further morbidity and mortality.

P-029 Metabolic Pathways Predictions using Machine Learning Method

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Background and objectives: Metabolic pathways are a series of chemical reactions, where enzymes are involved to obtain other products. Many pathways remain incompletely characterized, and some enzyme components have not been identified. Existing models to predict pathways are dependent on genome annotation pipelines, propagating error accumulation for incorrectly annotated genes. To predict relationships among two pairs of entities (e.g., enzymes), machine learning methods have been developed, such as Pairwise Support Vector Machines (P-SVMs). P-SVMs use pairwise kernels,

which are computationally expensive in terms of processing when sequence data (i.e., sequence kernels) are involved. Rational kernels have been efficiently used as sequence kernels, by computing similarity measures between sequences as automata. We propose a new computational framework, Pairwise Rational Kernels (PRKs), as a combination of pairwise and rational kernels, to predict metabolic networks. PRKs compute raw sequence data, avoiding errors in genome annotation pipelines. Methods: We described and implemented the PRK framework and associated algorithms. Several experiments were developed using PRKs. As data, known pathways were used to evaluate and compare our framework with other sequence kernels to predict metabolic pathways. Results: We obtained better accuracy values using sequence kernels (manipulating raw sequences) than other type of kernels. Our framework, PRKs, performed better than other implementations. Conclusion: We obtained an efficient method to predict metabolic pathways through PRKs framework, likewise our predictor method avoids the errors introduced by incorrect gene annotations, since raw sequence data can be used. Acknowledgements: This research was support by MGCB2, Canada, and RCMI grant G12 MD007600.

P-030 Atraumatic Bilateral Femoral Neck Fractures in a Premenopausal Female With Hypovitaminosis D

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Bilateral femur neck fractures in young adult patients are very rare in atraumatic circumstances. We report a young premenopausal female with osteomalacia secondary to vitamin D deficiency and spontaneous bilateral femur neck fractures. Patient had no reported risk factors for osteomalacia but hypovitaminosis D was noted on laboratory evaluation. Osteomalacia secondary to low serum levels of vitamin D may lead to stress and fragility fractures. Imaging tests revealed possible, non-displaced, acute bilateral femoral neck stress fractures. We recommended internal fixation with two cannulated hip screws for both hips. Follow up laboratories showed improvement in hypovitaminosis D following administration of oral supplements. Our patient was able to return to her activities of daily living without assistance three months post operatively.

P-031 Insurance-Related Disparities in Care For Trauma Patients

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Background/Objective: Health disparities due to patient insurance have been documented among a variety of diseases, including trauma. However, this has not been well evaluated in patients with penetrating trauma. Thus, we aimed to examine the association between health insurances and penetrating-trauma-patient outcomes at Puerto Rico Trauma Hospital.

Methods: A cross-sectional study of patients with private (n=758), public (n=2,976) and self-paid (n=1,289) health insurance was undertaken using patients' records, 2000-2014. Variables included in the study were: socio-demographic, clinical, complications, and mortality. A bivariate analysis was undertaken using the Chi-square Pearson and Kruskal-Wallis tests. A logistic-regression model was performed to associate health insurance with mortality. This study was IRB approved (#B0030715). Results: Most patients were male. Patients with public insurance were younger than those in the other groups. A greater proportion of chest and abdominal injuries ($p<0.001$; 40.93% and 48.66% respectively), hypotension (90.80%), and blood transfusions (17.24%) was observed in patients with public health insurance. In the sample, this group presented ISSs ≥25 (15.70%) with the highest frequency. Additionally, patients with public insurance showed more complications such as ARDS, bacteremia, arrhythmia, pneumonia, renal and respiratory failure, and septicemia. In the mechanism-stratified analysis, however, self-paid patients with gunshot wounds had a 54% (OR=1.54; 95%CI: 1.01-2.3) higher mortality rate relative to private-insurance patients. Conclusion: Even though patients with public insurance had worse health outcomes overall, in the stratified analysis, self-paid patients with gunshot wounds had higher mortality rates. These findings are consistent with previous studies suggesting that uninsured patients have the highest mortality rates.

P-032 Development and Validation of a UHPLC-MS-MS Method for the Determination of Anti-Hypertension Drugs in Dietary Supplements

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Dietary supplements are products intended to improve patient's health, but in the past few decades they have been adulterated by their manufacturers making them a public threat. Currently, we are interested in developing a UHPLC-MS/MS for analyzing dietary supplements marketed for anti-hypertension treatment. We developed a UHPLC-MS/MS method which consist of a gradient using 0.1% formic acid in water and 0.1% formic acid in acetonitrile at 0.21 mL/min flow, an injection volume of 1µL, oven and autosampler temperature of 40°C and 15°C, respectively and run time of 10 minutes.. Compounds were monitored using multiple reaction

monitoring Parameters validated were precision, linearity, limit of quantification (LOQ), limit of detection (LOD), specificity, stability and accuracy. Stability test showed that solutions didn't degrade for at least 21 days. LOQ and LOD for each drug range from 0.195ppb to 31.25 ppb in both blank samples and reference standards. Linearity was evaluated in a concentration range of 2.5 ppb to 1.0 ppm with correlation coefficients range 0.9826 to 0.9997. Average recoveries ranged from 33% to 346% suggesting that there is a matrix effect that impacts the recovery of the different drugs. However, no interferences were observed from the matrices that would impact the detection of the drugs. According to the literature, this is the first UHPLC-MS/MS method developed for the analysis of these drugs in dietary supplements. Also, it shows better detection limits, reduces sample preparation time and provides more specificity in comparison with other methods found in the literature.

P-033 Can Music Help Persons with Alzheimer's Disease?

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Background and Objectives: Alzheimer's disease (AD) is a neurodegenerative disease that causes irreversible damage in the brains of people with this condition, affecting dramatically not only their cognition, but also their mood. It has been suggested that music might have beneficial effects on persons with AD. The main goals of this study are: 1) to identify the areas of the brain that are involved in processing music; 2) to identify biological changes that occur in the brain while listening to music or performing music related activities; and 3) to understand and propose possible therapeutic effects of music in AD. Methods: This study was conducted by doing a literature review of mainly neuroimaging studies that included PET scans and fMRI. We used PubMed, ScienceDirect and EbscoHost as our main databases, searching keywords such as: "music processing AND brain", "music AND Alzheimer's", "music AND dementia" and "music AND brain". Results: Music is processed by complex pathways that vary depending on the information the brain receives. Exposure to music causes biological changes in the brain, such as increasing blood flow and activation of several regions of the temporal lobe, cerebellum, amygdala and hippocampus, among others, evoking cognitive and emotional responses. Music has also been shown to decrease stress levels and improve immune function in humans. Conclusion: These findings might explain why exposure to music might be beneficial to Alzheimer's patients. Music could be used to improve the emotional and cognitive state of persons with AD, and therefore their quality of life.

P-034 Identification of Interacting Partners of the Cell Wall Sensor Mtl1p in Saccharomyces Cerevisiae

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Background and objectives: Proteins in cell membranes comprise a class of special interest. They are involved in processes such as adhesion, metabolism, and signal transmission, and some have even been associated to disease. As a consequence they constitute major pharmaceutical targets, along with its cytosolic interacting partners. Although the study of membrane proteins is usually difficult because of their hydrophobic nature, methods have been developed to study their interactions in vivo. In Saccharomyces cerevisiae, the cell wall sensor Mtl1p has been implicated in the response to oxidative stress. The objective of our study is the identification of proteins whose interactions with the cytosolic domain of Mtl1p are relevant, to test them as therapeutic targets in yeast. Methods: Our method is based on the affinity purification of extracts from a MTL1–TAP (tandem affinity purification tag) strain of S. cerevisiae coupled to mass spectrometry analysis. Results: We preliminarily identified 10 proteins whose interactions with Mtl1p were classified as relevant and that have not yet been reported in the Saccharomyces Genome Database (www.yeastgenome.org). Conclusions: Our results show that novel interactions with cytosolic partners can be found for membrane proteins using our experimental approach. Acknowledgements - This research is supported by the University of Puerto Rico and NIH awards RCMI G12MD007600, RISE R25GM061838, and INBRE P20GM103475.

P-035 Unique Etiology of a Headache

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Cryptococcal Meningitis is a serious and fatal condition caused by an opportunistic pathogen, Cryptococcus neoformans. Patients immunocompromised have a higher risk of developing a cryptococcal infection such as: Human Immunodeficiency Virus (HIV) and leukemia patients. In this case we report a 74 year old female with past medical history of Multiple Myeloma treated with thalidomide for two years and formally in remission for the last 6 months. The patient was admitted due to symptomatic anemia and during the hospitalization she developed fever and

headaches. Magnetic Resonance Imaging was done showing leptomeningeal inflammation. Cryptococcal Cerebrospinal fluid (CSF) antigen and cryptococcal serum antigen were positive confirming the diagnosis of cryptococcal meningitis. Therapy with Amphotericin B was started and a significant improvement of symptoms was observed. The patient was discharged on maintenance therapy with fluconazole and has remained asymptomatic after close to a year of follow up visits with an Infectious Disease specialist. This case should remind us, as Primary Care Physicians of the importance to keep in mind opportunistic infections that can surface when patients are in the recovery phase of an immunosuppression state. Immune reconstitution syndrome is not only seen in HIV patients, but also in patients receiving immune suppression therapy.

P-036 Targeting Microrna-143 in Glioblatoma Reduces in Vitro Tumor Growth

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The purpose of this study is to assess the biological role of microRNA-143 (miR-143) in Glioblastoma multiforme (GB). In United States, the incidence of GB is about 17% of all primary brain tumors and about 60-75% of all Astrocytomas (American Brain Tumor Association, 2014). The standard therapy is surgical tumor removal followed by Temozolomide based-chemotherapy and radiotherapy. However, many patients recur after treatment and the median survival rate for GB has remained 15 months for the past 20 years. Thus, novel therapies for GB treatment are urgently necessary. MicroRNAs (miRNAs) are a class of small non-coding RNAs (18-22 nucleotides in length) that regulate gene expression at the post-transcriptional level. Several deregulated miRNAs have been identified in all cancer types including GB. Contrasting results have been published regarding the role of miR-143 in GB cell lines and tumor patients. Total RNA was isolated from FFPE samples from brain tumor patients. TaqMan-based Real-time PCR showed that the relative expression of miR-143 was higher in GB patients compared to control individuals, and with paired surrounding non-cancerous tissue. GB cells transiently transfected with a miR-143 oligonucleotide inhibitor showed reduced cell proliferation (68.5%) as assessed by a colony formation assay. Inhibition of miR-143 also increased apoptosis and arrested the cell cycle of GB cells in the G0/G1 phase. These results suggest that miR-143 is endowed with oncogenic properties in GB cells and patients. Ongoing experiments will aim to determine the role of miR-143 in sensitivity towards temozolomide, currently the principal chemotherapeutic drug administered for GB. This research project is being supported by: PRCTRC: NCRR (U54 RR 026139-01A1), NIMHD (8U54 MD 007587-03), and RCMI: MBRS-RISE, NCRR (2G12-RR003051) and NIMHD (8G12-MD007600) from the NIH.

P-037 Congenital or Traumatic Os Odontoideum, wait to fix it? If It's Broken, Fix It! : A case report after neck injury

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Purpose: There is continued debate as to the etiology and management of Os odontoideum (OO). Here we present a case of OO diagnosed after a traumatic event. Case: A 38-year-old male patient with history of trauma to the cranio-vertebral junction two weeks prior to encounter that presented to our institution with new onset upper extremity myelopathy. Clinical Approach: A neck CT revealed OO with atlantoaxial instability; there were no previous imaging studies available before the traumatic event. Atlantoaxial fixation and fusion was done. Clinical findings: The patient had an uneventful recovery and was discharged 3 days after surgery and followed 2 weeks after the procedure with no neurological sequela. Hypothesis: This patient was asymptomatic prior to the trauma. Clearly the traumatic event triggered the new onset of symptoms. Radiographic characteristics such as smooth cortical borders of the odontoid process seen on x-rays taken 2 weeks after the traumatic event might suggest that the OO was present before the trauma as a subclinical entity and progressed to become symptomatic as a consequence of the instability in the region. This might point towards the direction that the etiology of the OO was congenital. The poor vascular supply of this region would not give time to heal and form cortical borders in 2 weeks in which the original accident occurred. Os odontoideum can lead to instability of the atlantoaxial joint and places the spinal cord at significant risk for acute traumatic catastrophic events or chronic neurologic change.

P-038 Association of genetic ancestry with colorectal tumor characteristics in Puerto Rican Hispanics

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Background: Colorectal cancer (CRC) is the 1st cause of cancer deaths in Puerto Rican Hispanics (PRH). The genetic background of the Puerto Rican population, which is mix of European, African and Amerindian races, could account, at least in part, for the differences observed in the

CRC mortality rates for this population. The objective of this project was to assess the role of genetic ancestry in CRC risk and clinicopathological features of CRC tumors in the PRH population. Methods: We used a panel of 105 ancestry informative markers to estimate genetic ancestry in 224 PRH CRC cases and 202 PRH controls. We examined the association of genetic ancestry estimates with CRC risk and clinicopathological characteristics of tumors in our study population. Results: Our results no association of genetic ancestry with CRC risk in the PRH population was found in our study (OR= 0.86 [0.43-1.69], p=0.655). However, genetic ancestry was found to have a significant role on the CRC tumor characteristics of the studied population. High African ancestry (>21.0%) was associated with distal tumor location, when compared to low African ancestry (≤ 21.0%) (p=0.012). Furthermore, low Amerindian ancestry (≤ 19.2%) was associated with poorly differentiated tumors (p=0.022). Conclusion: The preliminary results presented in this study show that genetic ancestry is associated with tumor location and differentiation, both associated with CRC prognosis. Additional studies are needed to fully elucidate the role of genetic ancestry in CRC susceptibility and prognosis.

P-039 Synthesis and Characterization of Nanocellulose-Based Nanodiamond Coatings for Applications in Bone Tissue Engineering

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Background and objectives: Diamond nanoparticles (DNP's) are physically hard and non-cytotoxic structures that can be easily modified and intermixed with other materials due to their easily modifiable surface sp and sp2 carbons. In order to expand the usability of DNP's herein we present the modification of this material with the novel cellulose nanocrystals (CNC's). Methods: The synthesis and characterization of these CNC's coupled covalently with DNP's were carried out in this project to explore its possible uses in bone tissue engineering. In brief, the CNC's were silylated with APTES at its 1° hydroxyl group to install a –NH2 group. Then, non-oxidized DNP's (nonoxDNP) were carboxylated at their surface moieties following a strong acid oxidation reaction to yield oxidized DNP's. This oxidation was evidenced by FTIR analysis. Thereafter, the CNC and oxDNP were coupled covalently through the well-known EDC/Sulfo-NHS reaction to form a peptide linkage between the two compounds. The resulting construct and its analogues were characterized through: Fourier transform infrared spectroscopy (FTIR), Thermogravimetric analysis (TGA), X-ray powder diffraction (XRPD), Raman spectroscopy and subject to an MTS cytotoxicity assay to study its compatibility with osteoblasts. Results: The FTIR analysis provided evidence for the formation of the peptide bond, albeit not at 100% yield. TGA thermograms show that the addition of cellulose to the construct reduces thermal stability, but all constructs showed considerable stability until approximately 300°C. Furthermore, as shown in the MTS assay, CNC does not negatively affect osteoblast viability, but all DNP constructs lower it below 30%. Conclusion: Future works for this project include further characterization by: Scanning Electron Microscopy (SEM), X-ray photoelectron spectroscopy (XPS), Lethal Dose 50% (LD50) assays and zeta potential analyses. Acknowledgment: NASA EPSCoR Program under grant # NNX14AN18A and PR-LSAMP

P-040 Noise environmental hazard in the Neonatal Intensive Care Unit

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Background: The United States Environmental Protection Agency and the American Academy of Pediatrics established that sound levels in the Neonatal Intensive Care Units (NICU) should not exceed 45 dB during the day and 35 dB at night [2]. However, NICU's sound levels are usually in a range from 7 dB to 120 dB, exceeding the recommended parameters. These sound levels mostly come from human related sources [3]. Noise is unwanted sound. Methods: This is a descriptive observational study. A data collection form was created. Sound sources and frequency of events were recorded in 3 locations within the NICU, during 2 periods of time, by anonymous observers. Results: 7,320 noise events were identified, 3,103 in the morning (9 AM - 12 PM) and 4,217 in the afternoon (12 - 3 PM). The number of events was greater (16%) in the afternoon. Human related sources are the most common sound source, 51% in the morning, 56% in the afternoon. The most frequent human sound source was conversations among hospital staff (12.3% morning, 15.7% afternoon). The most common non-human related source was alarms of medical equipment (39.7% morning, 38.4% afternoon). Discussion: Noise-related hearing loss is one of the most common occupational health issues. Neonates exposed to NICU noise may have immediate and long term effect, including hearing loss and language development problems. Identifying sources of noise in the NICU provides the understanding of the practices of the health care system to create quality improvement projects to lessen this environmental hazard.

P-041 Morbid Obesity might be a Barrier to Cervical Cancer Screening

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Background & Objectives: Obese women have higher cervical cancer incidence and mortality than normal weight women, which may be related to non-adherence to screening recommendations. We aimed to assess adherence to cervical cancer screening recommendations (Pap smear testing within the past 3 years) according to BMI categories. Methods: A cross-sectional analysis was performed using data from 532 women aged 18-64 years obtained from a population-based study of HPV infection. Face-to-face and computer-assisted interviews and measured weight and height were used. BMI (kg/m2) was computed and classified as normal (18.5-24.9), overweight (25.0-29.9), obese Class I (30.0-34.9), obese Class II (35.0-39.9), and obese Class III or morbid obesity (≥40.0). A multivariate logistic regression model was used to estimate the odds ratio (OR) with 95% confidence intervals. Results: 78% of women had a Pap smear testing within the past 3 years, 31% were overweight, and 45% were obese (Class I: 23%, 11% Class II, and 11% Class III). No significant associations were observed between Pap smear testing within the past 3 years and overweight, Class I and Class II obesity. However, the odds of not having Pap smear testing within the past 3 years among morbidly obese women were 3.2 (95% CI: 1.4-7.3) times the odds among normal weight women, after adjustment for sociodemographic, sexual, lifestyles, and clinical characteristics. Conclusions: The proportion of Pap smear testing was below the established target in Healthy People 2020 of 93% and highlights the importance of adequate interventions to decrease screening disparities, especially in morbidly obese women. Acknowledgements: This project was approved by the UPR-MSC-IRB (A1810610), funded by the NIAID grant SC2AI090922, and partially supported by NCRR U54 RR026139 and NIMHD 8U54MD 007587.

P-042 Traumatic Vascular Injuries and its management with Temporary Intravascular Shunt (TIVS): Puerto Rico Trauma Hospital experience

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Background & Objective: Temporary Intravascular shunts(TIVS) are commonly used as a damage control procedure for a peripheral or truncal vascular injury, fracture of extremities and need for perfusion as complex revascularization is perfomed. Our aim is to evaluate TIVS usage and outcomes in patients treated at the Puerto Rico Medical Center. Material and Methodology: A chart review was performed during the years 2007-2013 for all patient how sustained a vascular injuries and need a temporary intravascular catheter prior vascular surgery. Statistical descriptive analysis was conducted. This protocol was approved by IRB (B0030314). Results: We found 31 patients that were admitted to the PRTH during the years 2007-2013. Out of those 11 need placement of TIVS. Most were injured by a penetrating injury (Gunshot wound) 7 (82%) and less likely blunt trauma (motor vehicle accident) 1 (9%) or fall 1 (9%). The most common vessel injured being the superficial femoral artery (SFA), the average indwelling time was from 6 to 96 hours. Shunt thrombosis was reported in 2/11 patients. The different types of shunts used were IV tube lines(4/11), plastic shunts (no otherwise specified)(1/11), arterial line plastic shunt (1/11), suction tube catheter(3/11) as well as #8 Fr tube(1/11) and cardiac catheter(1/11). Conclusions: No death was attributable directly to the use of TIVC. TIVC can be created with any available hollow tube. TIVC as part of damage control surgery is currently used as part of our vascular trauma surgeries at the PRTH.

P-043 Macrophage inflammatory protein-1β and Interleukin 15 Modulate Gene Expression Patterns Associated with Prostate Cancer Progression

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Prostate Cancer (PCa) is the second-leading cause of cancer-related deaths in the United States. Inflammation is associated with PCa development and progression. Cytokines such as macrophage inflammatory protein-1β (MIP1β or CCL4) and Interleukin 15 (IL-15) are differentially expressed in prostate cancer patients with recurrent disease (MIP1β) or recurrence-free survival (IL-15). However, the specific pathway by which these cytokines affect PCa progression is unknown. We evaluated the changes in gene expression patterns using

in vivo models of prostate cancer and microarray analysis. To generate prostate tumors in vivo we used a mouse orthotopic xenograft model. Androgen-receptor-positive (AR+) cells, 22RV1, were orthotopically injected in the anterior prostate lobes. MIP1β and IL-15 were administered bi-weekly with intraperitoneal injections during 4 weeks. Tumor tissue was collected and snap frozen for RNA extraction, and microarray analysis with the Affymetrix Human Gene 2.0 Gene Array. Differences in gene expression were analyzed with Ingenuity Pathway Analysis (IPA) software and confirmation was done via real-time PCR. Microarray analysis showed 179 genes differentially expressed between MIP1β and control. In addition, 952 genes were differentially expressed between IL-15 and control. Ingenuity Pathway Analysis revealed that MIP1β affected networks associated with cell development, proliferation and movement while IL-15 affected networks involved in lymphocyte development and movement, cell death, and the inhibition of cancer cell invasion. Knowledge of the role of MIP1β and IL-15 in the alteration of gene expression patterns is pertinent to elucidate the significance of these cytokines in prostate cancer progression.

P-044 Alloimmunization in Sickle Cell Disease Patients Using Phenotype-matched Red Blood Cells in the Transfusion Service of the Puerto Rico Medicine

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Sickle Cell Disease (SCD) refers to a group of hematologic disorders distinguished by an abnormal production of Hemoglobin S. It has a high prevalence in individuals with African ancestry. Red blood cells (RBC's) transfusions are an essential part of the treatment for SCD. This leads to an increase risk of developing alloantibodies to RBC's antigens. Phenotypically identical blood for some blood group antigens could be used in order to minimize the development of these alloantibodies. We hypothesized that the phenotypically identical blood transfusions decrease the frequency of alloimmunization in our SCD patients. Objective: To describe the SCD population in the Transfusion Service of the Puerto Rico Medical Center, and to determine the prevalence and significance of alloimmunization between phenotype and non-phenotype RBC's transfusions. Methods: We identified 138 SCD patients in our database who had received blood transfusions from July 2005 to December 2014. The population's age, sex, RBC's phenotype, number of transfusions, and alloantibody production were evaluated. A descriptive analysis of alloimmunization between phenotype transfusions and non-phenotype transfusions has been performed. Results: Preliminary results showed that patients transfused with phenotypically identical blood did not develop alloantibodies. Partially-identical phenotype and non-phenotype transfusions induced the formation of alloantibodies in 3% and 15% of patients, respectively. Conclusions: Phenotypically identical transfusions seems to prevent the formation of alloantibodies; partially-identical or non-phenotype transfusion induce alloimmunization. Another advantage of the phenotyping is that it facilitates obtaining compatible blood in the eventuality that they develop alloantibodies to RBC's. Acknowledgments: ASEM Clinical Laboratory Transfusion Service

P-045 Tracheostomy in Pediatric Intensive Care: Impact of Timing on Patients Clinical Course

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Background & Objectives: There is no recognized standard timing for tracheostomy placement in children undergoing prolonged mechanical ventilation. Despite the known advantages, considerable controversy remains regarding the appropriate indications, timing, and results of tracheotomy in pediatrics. Method: This retrospective study evaluated patients who underwent tracheostomy placement during their admission to the Pediatric Intensive Care Unit (PICU) at the University Pediatric Hospital of Puerto Rico from January 2006 to December of 2014. We evaluated primary diagnosis, age, indication for tracheostomy placement, timing of the procedure, length of stay (LOS) and mortality rate related to the procedure. A total of 123 tracheostomies were performed during the study period. Results: 42 out of 123 patients who had a tracheostomy placement were females (36%) and 64% of patients were male. Patients that required a tracheostomy had a median age of 24 ± 68 months, 79% of the patients had Medicate and 21% had private insurance. Patients LOS was 29 ± 38.5 days at PICU with a median of 12 ± 28.7 days on mechanical ventilation support. The average time for tracheostomy placement was 18 ± 16.9 days. Conclusions: The most common indication identified was chronic respiratory failure, the primary diagnosis where pulmonary diseases and neurological problems. There was no mortality associated to tracheotomy placement. Knowing the risk factors of patients admitted at PICU that required a tracheostomy placement will give us guidelines about the age and diagnosis to determine the perfect timing for the procedure to improve patient clinical course and reduce PICU LOS. Acknowledgements: Authors

want to acknowledge Ms. Wally Aponte, RN for their help in data collection. Ms. Adriana E. Mojica-Márquez wants to thank the UPR-School of Medicine Department of Pediatrics, for the opportunity to help her develop her research experience.

P-046 Recurrent Ischemic Strokes As Presentation Of Moyamoya Disease in a 3 Month Old Hispanic Girl: A Case Report

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Purpose: To describe the youngest reported case of Moyamoya disease in the Puerto Rican population. Case description: Case of a 3 month old female with no systemic illness, who presented seizures de novo. Electroencephalogram revealed electrographic seizures arising from the left occipito-temporal region. Brain MRI showed left anterior cerebral and bilateral middle cerebral artery ischemic strokes. Four days later, patient developed status epilepticus associated to a new right middle cerebral artery ischemic stroke. Clinical Approach: Brain Magnetic Resonance Angiography showed bilateral symmetric narrowing of the carotid terminus and proximal anterior and middle cerebral arteries. Infectious, hematologic and cardiac evaluations were normal. After a prolonged hospitalization, patient was discharged on levetiracetam and aspirin therapy. Clinical findings: Three months later, patient presented with status epilepticus due to a right internal carotid artery ischemic stroke. Head Computed Tomography Angiography showed progressive severe narrowing of the anterior circulation, new severe narrowing of the posterior circulation, and development of transdural collaterals, compatible with diagnosis of Moyamoya disease. After extensive counseling, parents refused neurosurgical management and patient was discharged on aspirin therapy. Patient developed residual generalized spasticity and severe global developmental delay. Hypothesis: Moyamoya disease is an uncommon cerebrovascular condition characterized by progressive stenosis of the bilateral internal carotid arteries with compensatory formation of collateral circulation. A genetic etiology is suspected, although other risk factors have been identified. Moyamoya should be considered in the differential diagnosis of any patient presenting with stroke and atypical features such as young age and no obvious risk factors. Acknowledgements: We wish to thank all participants: Dra. Jessica González Montes, Child Neurology Section and Dr. Luis Garcia Irizarry, Neuroradiology Section

P-047 An atypical etiology of Acute Appendicitis: Appendix Carcinoid Tumor

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Purpose: Cancers of the appendix are very rare. Most of them are found accidentally on appendectomies. Carcinoid tumors were made up of enterochromaffin cells within the lamina propria and submucosa. When the tumor is located at the base of the appendix, it can occlude the lumen and give the patient similar symptoms of appendicitis. Case Description: A 33 year old male patient presented with periumbilical pain with radiation to RLQ, of 1 day of evolution. Patient refers nausea, vomits, fever but denies any flank pain, palpitations, skin changes or dizziness. Physical exam with RLQ tenderness, rebound tenderness and involuntary guarding and Mc'Burney point tenderness. Clinical Approach: Abdominal and pelvis CT scan reveals acute appendicitis with perforation. During the procedure of laparoscopic appendectomy, appendix was obtained for biopsy. Clinical findings: The appendix biopsy reveals a 1.3 cm proximal half of the appendix well differentiated neuroendocrine tumor (carcinoid tumor), grade 2. Hypothesis: The diagnosis of carcinoid cancer is typically made by pathology after an appendectomy has been performed. They are found in about 1% of appendectomy specimens and according to a report published by the National Cancer Institute account for about 0.4% of intestinal neoplasms. Hemicolectomy is the treatment for carcinoid tumor. Acknowledge: None.

P-048 Hypertriglyceridemia in VLBW infants and its association to intravenous fat emulsions

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Background: Premature infants are treated routinely with total parenteral nutrition (TPN). Intravenous fat emulsions (IVFE) constitute an important energy source because of their high energy density and provide essential fatty acids necessary for central nervous system and retinal development. New guidelines recommend starting IVFE at 2g/kg/day the first day of life. At the University Pediatric Hospital Neonatal Intensive

Care Unit (UPH-NICU), IVFE is started at 1g/kg/day and we frequently observe hypertriglyceridemia. We aimed to determine the prevalence of hypertriglyceridemia in very low birth weight (VLBW) infants receiving IVFE during the first 5 days of life (DOL). Methods: Retrospective study using data collected by the UPH-TPN team from VLBW infants admitted to UPH-NICU during 2011-2014. Hypertriglyceridemia was defined as serum triglyceride levels above 200mg/dL. Statistix 8.0 was used for data analysis. The study was approved by the IRB. Results: Data from 293 infants were analyzed. The mean birth weight was 1074 grams (range 429-1500). The mean gestational age was 29 weeks (range 23-37). The prevalence of hypertriglyceridemia ranged from 7-15% being higher on DOL #2. Univariate analysis showed an association of hypertriglyceridemia with lower birth weight during DOL #1-4 and higher doses of IVFE during DOL #1-3 ($p<0.05$). Conclusions: The prevalence of hypertriglyceridemia in this group of infants is higher than that reported in the literature. This fact opens the door to investigate further what factors are associated with the presence of hypertriglyceridemia in our neonates and which IVFE infusion rates they can tolerate. Acknowledgment: NCMHD-NIH Grants 5S21MD000242 and 5S21M

P-049 Background: Premature infants are treated routinely with total parenteral nutrition (TPN). Intravenous fat emulsions (IVFE) constitute a good energy

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Background: Premature infants are treated routinely with total parenteral nutrition (TPN). Intravenous fat emulsions (IVFE) constitute a good energy source because of their high energy density and provide essential fatty acids necessary for central nervous system and retinal development. New guidelines recommend starting IVFE at 2g/kg/day the first day of life. At the University Pediatric Hospital Neonatal Intensive Care Unit (UPH-NICU), IVFE is started at 1g/kg/day and we frequently observe hypertriglyceridemia. We aimed to determine the prevalence of hypertriglyceridemia in very low birth weight (VLBW) infants receiving IVFE during the first 5 days of life (DOL). Methods: Retrospective study using data collected by the UPH-TPN team from VLBW infants admitted to UPH-NICU during 2011-2014. Hypertriglyceridemia was defined as serum triglyceride levels above 200mg/dL. Statistix 8.0 was used for data analysis. The study was approved by the IRB. Results: Data from 293 infants were analyzed. The mean birth weight was 1074 grams (range 429-1500). The mean gestational age was 29 weeks (range 23-37). The prevalence of hypertriglyceridemia ranged from 7-15% being higher on DOL #2. Univariate analysis showed an association of hypertriglyceridemia with lower birth weight during DOL #1-4 and higher doses of IVFE during DOL #1-3 ($p<0.05$). Conclusions: The prevalence of hypertriglyceridemia in this group of infants is higher than that reported in the literature. This fact opens the door to investigate further what factors are associated with the presence of hypertriglyceridemia in our neonates and which IVFE infusion rates they can tolerate. Acknowledgment: NCMHD-NIH Grants 5S21MD000242 and 5S21M

P-050 Hyperextension Lumbar Injury Resulting in Intervertebral Bowel Entrapment: A Case Report and Review of Literature

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Purpose: Traumatic vertebral bowel entrapment is an exceedingly rare event, in which, as a result of a traumatic flexion/extension event, a segment of bowel is snared between two vertebrae. Very few events of these genera have been reported in the literature, with estimates close to a dozen, and none including Puerto Rico. Case description: We report the case of bowel entrapment in vertebrae after a rollover motor vehicle accident in a 42-year-old man who presented with acute abdominal pain. Clinical Approach: Trauma workup was performed, including head and neck CT scan, as well as chest and abdominopelvic CT scan with IV/PO contrast. A L2 Chance fracture was identified, and a thoracolumbar MRI was performed to assess neural involvement. Since abdominal pain persisted, an exploratory laparotomy was performed. Clinical findings: On exposure of abdominal contents, the small bowel was followed and noted to "disappear" in the lesser sac. Bowel was found entrapped and necrotic within the intervertebral space. Discectomy with L2/L3 end plate shaving was performed followed by bowel resection due to ischemia and necrosis of entrapped bowel. Finally, an end-to-end anastomosis of the jejunum was performed. Hypothesis: This cause for mechanical bowel obstruction is rare and constitutes a diagnostic challenge. It is important for all Trauma surgeons and radiologists to be aware of the possibility of intervertebral impingement as the cause of mechanical bowel obstruction. Hyperextension/

flexion injury may be an uncommon cause of persisting abdominal pain; therefore, it should be considered in the initial differential diagnosis.

P-051 Judo Injury Epidemiology: A Pilot Project Using Text Messaging for Injury Surveillance

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Background and Objective: The objective of our study is to apply this modern technique for injury surveillance in the sport of judo and to evaluate the incidence, prevalence, and duration of traumatic and overuse injuries, as well as the injury rate during practice or competition. Methods and Study Design: Ongoing prospective cohort study. A small group of 19 judokas, ages 17-22 years, male and female will be surveyed each week for one year. They will be asked 3 questions via text message regarding exposure to training, competition and the presence of a time loss injury during the week. The athlete who suffers an injury will then complete an injury report form that will evaluate the body area, type of injury, duration of traumatic and overuse injuries, and if the injury occurred during practice or competition, as well as other judo specific questions. Results: In the first 15 weeks of surveillance the response rate to the weekly text messages has been 100% of all the athletes. A total of 1,133 hours of practice and 72 competition combats were reported for athlete exposure. 7 injuries have been reported. 6 injuries have been sustained during practice (5.3/1000 hrs of exposure) and 1 injury during competition (13.9/1000 competition combats of exposure). Conclusions: The use of text messaging seems to be an effective method for injury surveillance in the sport of judo. The high response rate provides more complete data in respect to injury description and athlete exposure for prospective studies.

P-052 Long-term Outcomes in Hispanics from Puerto Rico with Rheumatoid Arthritis Receiving Early Treatment with Disease-Modifying Anti-Rheumatic Drugs

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Background/Objectives: To determine the long-term outcome in a cohort of Puerto Ricans with rheumatoid arthritis (RA) treated with disease-modifying anti-rheumatic drugs (DMARDs) within 6 months from the onset of symptoms attributable to RA. Methods: Demographic features, health-related behaviors, comorbidities, cumulative clinical manifestations, disease activity (per Disease Activity Score 28 [DAS-28]), functional status (per Health Assessment Questionnaire), and pharmacologic treatment were determined. Early treatment was defined as the use of DMARDs (traditional and/or biologic) within 6 months from the onset of symptoms attributable to RA. Data were examined using bivariable (chi-square or Student's t tests) and multivariable (logistic regression) analyses. Results: A total of 387 RA patients were studied. The mean (standard deviation [SD]) age of the study population was 56.0 (14.0) years with a mean disease duration of 14.9 years; 337 (87.0 %) were women. One hundred and twenty one (31.3%) patients received early treatment with DMARDs. In the multivariable analysis, those who received early treatment were less likely to have joint deformities (Odds ratio [OR] 0.49 [95% confidence interval [CI] 0.31–0.78]), joint replacement surgeries (OR 0.37 [95% CI 0.18–0.72]), disability (OR 0.53 [95% CI 0.34-0.83]), and receive less intra-articular corticosteroid injections (OR 0.61 [95% CI 0.39–0.96]) than those who had late treatment. Conclusion: In this group of patients, those receiving early therapy with DMARDs had better long-term outcomes, having less physical damage and functional impairment than those receiving late therapy. This study highlights the importance of early detection and treatment of RA to prevent disease damage.

P-053 Association between Perceived Unsafe Environment, Being Bullied, and Suicidal Ideation in a Representative Sample of Puerto Rican Adolescents

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Suicidal behavior among adolescents has been associated with their social and environmental contextual influences, particularly their school and neighborhood environments. However, this relationship has seldom been explored among Puerto Rican teens. Our objective was to explore if suicidal ideation was associated with adolescent's perception of being unsafe in their schools, communities, or homes, and being bullied. A representative sample of all 7th-12th grade students in PR was selected using a multi-stage stratified cluster sampling design. Approximately 3,982 students participated

in the cross-sectional survey answering a pre-coded self-administered questionnaire. Proportions were compared using chi-square tests. Multiple logistic regression models were fitted to estimate the odds ratios and their 95% confidence intervals. Prevalence of suicidal ideation in the last year was estimated in 8%. Seriously thinking about suicide was highest among females, those age 15, those who reported being bullied, and among those who reported not feeling safe in their schools, communities, homes, or in the places where they spent time with friends. Among females, bullying (OR=2.82, 95% CI=2.70-2.95) was more strongly associated with suicidal ideation than feeling unsafe in the different environments after adjusting for age, depression, and unsafe environments. However, for males, feeling unsafe in their homes had a higher odds of ideation (OR=2.90, 95% CI=2.63-3.18) than bullying and feeling unsafe in other environments. This study highlights the influence that environments have is the teen's mental health and well-being. Suicide prevention programs should target these external factors in order to be more effective.

P-054 Neonatal Sacrococcygeal Neuroblastoma mimicking a Teratoma: Case Report

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Purpose: Describe the uncommon presentation of a neonatal neuroblastoma mimicking a sacrococcygeal teratoma. Case description: Case of a term male born at 39 1/7 WGA by spontaneous vaginal delivery to an 18-years-old G2P1A0 mother. Prenatal screening tests were negative. Patient admitted to NICU at first day of life due to suspected neonatal sepsis and started on antibiotics. On day #2 of life, the patient presented with marked abdominal distention and bright red bloody stools. Clinical approach: Abdominal radiography revealed bowel dilation with no distal air and a persistent radio-opaque shadow in the lower abdomen. On day #4, abdominal ultrasound was performed revealing bilateral hydronephrosis and a prominent presacral mass. Barium enema revealed a presacral soft tissue mass. On day #5 CT-scan showed a well-defined mass in the presacral space favoring a Sacrococcygeal teratoma without evidence of metastasis. On day #6, a pelvic MRI revealed a large hypervascular presacral mass. Patient taken to OR on day 7 and the intrapelvic tumor was removed. Microscopic examination disclosed a poorly differentiated neuroblastoma. Clinical findings: Patient treated with chemotherapy at oncology ward. Has been followed at clinics with no relapses. Hypothesis: Sacrococcygeal neuroblastoma is an uncommon presentation on neonates and can mimic a teratoma. Prenatal and postnatal ultrasound is a useful screening modality in the evaluation of congenital neuroblastoma. Comprehensive and interdisciplinary approach when evaluating neonates with abdominal masses is of importance for prompt diagnosis and management of cases.

P-055 Intraoperative Anesthetic Management of Dysautonomia Associated to Guillain-Barré Syndrome Using Dexmedetomidine

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Purpose: Guillain-Barré is an autoimmune disorder affecting the peripheral nervous system resulting in varying degrees of muscle weakness presenting dysautonomia in as much as 20% of the affected patient population. Case Description: We present the case of a 19-year-old female who was scheduled for tracheostomy due to prolonged mechanical ventilation. She was diagnosed with Guillain-Barré manifesting dysautonomia with uncontrolled hypertension unresponsive to several antihypertensive medications. Clinical Approach: Intraoperative anesthetic management consisted of general anesthesia with dexmedetomidine as adjuvant. This centrally acting α2-adrenergic agonist has sedative and anxiolytic properties that result primarily from its activity in the locus ceruleus. Receptor stimulation results in reduced central sympathetic output, with a resulting increase firing of inhibitory neurons. Dexmedetomidine also provides analgesia, as it is able to modulate the release of substance P at the dorsal horn of the spinal cord. Aside from these anesthetic properties, postsynaptic activation in the central nervous system inhibits sympathetic activity and therefore can decrease blood pressure and heart rate. Clinical findings: In light of this sympathetic blunting, otherwise uncontrolled hypertension was successfully managed intraoperatively with the use of dexmedetomidine providing hemodynamic stability and anesthetic sparing effects. The wide swings in blood pressure that are commonly seen during general anesthesia were safely blunted with a continuous intravenous infusion throughout surgery. Hypothesis: Dexmedetomidine can be successfully used as an adjuvant for intraoperative management of patients presenting with dysautonomia associated to Guillan- Barre.

P-056 Differential associations of overweight and obesity with youth risk behaviors in Puerto Rico

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Background & Objectives: Few studies have assessed the association of overweight/obesity with youth risk behaviors in different groups defined by age and gender. This study examined this association in secondary students attending public and private schools in Puerto Rico. Methods: Analysis of the cross-sectional data of 10,235 adolescents who participated in Consulta Juvenil VIII (2010-2012) was performed. Approximately 57% adolescents self-reported height and weight. BMI was assessed using the CDC age- and gender-specific percentiles. Substance use (smoking, drinking, and illicit drugs), violent behavior (weapon possession and carrying to school, physical fighting, hurting others, gang member), and extracurricular activity participation (work, sports, church, art, clubs) were assessed. Weighted logistic regression modeling was used to estimate the odds ratio (OR, 95% CI) for the association of interest, while adjusting for family composition. Results: Overweight/obesity was significantly associated with higher odds of illegal drug use in younger females (OR=2.88, CI: 1.30-6.38). However, it was associated with lower odds of drinking in younger males (OR=0.61, CI: 0.39-0.96). Overweight/obesity was associated with lower odds of smoking in both younger (OR=0.51, CI: 0.24-1.08) and older males (OR=0.56, CI: 0.31-1.03), higher odds of not engaging in sports (OR=1.54, CI: 0.97-2.44) in older males, and lower odds of violent behavior in older males (OR=.49, CI: 0.24-1.03). Conclusion: Further research is needed to understand the associations of overweight/obesity with youth risk behaviors, with a particular focus on age and gender groups, before effective prevention strategies are implemented to reduce the additional morbidity associated with excess weight in youth. Acknowledgement: Approved by IRB # 6050313

P-057 Cross-Sectional Association Between Clinically Measured Periodontal Disease and Blood Pressure Levels in Overweight and Obese Adults

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Background & Objectives: Few studies have assessed the association between periodontal disease and hypertension; however, evidence is inconsistent. This study evaluated the association between clinically measured periodontal disease status and blood pressure levels among adults living in Puerto Rico. Methods: Overweight and obese adults aged 40-65 years and free of type 2 diabetes who participated in the San Juan Overweight Adults Longitudinal Study baseline examination were included in the analysis. The Centers for Disease Control and Prevention/American Academy of Periodontology definitions were used to categorize periodontal disease as normal/mild, moderate, or severe. Blood pressure levels were classified as normal, prehypertension, stage 1 hypertension, and stage 2 hypertension, according to the JNC-7 guidelines. Multinomial logistic regression models were used to compute the prevalence ratio (PR) with 95% confidence interval (CI) for the associations between periodontal disease and blood pressure categories, while controlling for age, sex, smoking, alcohol consumption, BMI, and preventive dental care. Results: Of 1,351 participants, 66.2% had moderate or severe periodontal disease and 29.2% were classified as having stage 1 or stage 2 hypertension. Compared to participants with mild or no periodontal disease, those with moderate disease had a nonsignificant increase of stage 2 hypertension (PR=1.58, 95% CI: 0.85-2.93); however, those with severe disease had significantly higher odds of stage 2 hypertension (PR=2.09, 95% CI: 1.06-4.11). Conclusion: The present study suggests that severe periodontitis is associated with stage 2 hypertension. Further longitudinal research is needed to assess whether improving periodontal disease could reduce or prevent hypertension.

P-058 An Unusual Presentation of Decompensated Heart Failure in a Child

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Purpose: To improve the awareness of a condition that may present with abdominal complains but it is due to a heart condition. A high index of suspicion is required to improve patient outcomes. Case description: An unusual case presentation of a 9 year old male patient who presented with an abdominal pain secondary to congestive heart failure. However, appendicitis was suspected and this 9 years old patient was exposed to an unnecessary ionizing radiation of a CT scan and delayed in management. Clinical Approach: CT scan revealed cardiomegaly and bilateral pleural effusions. Severe decompensated congestive heart failure due to dilated cardiomyopathy was diagnosed. Initial ejection fraction and shortening fraction were 27% and 13% respectively. He was transferred to a heart transplant center and subsequently transplanted successfully. Clinical findings: Patients with dilated cardiomyopathy present with sign and symptoms of congestive heart failure, such as, cough, generalized edema, fatigue, metabolic acidosis, and encephalopathy. The management is focused to decreased congestion and optimized oxygen delivery. Hypothesis: This is an unusual presentation of a child

with congestive heart failure complaining of abdominal pain most probably secondary to poor perfusion to the mesenteric circulation. The astute physician must be aware of this unusual presentation in order to improve patient outcomes, avoid unnecessary radiologic studies, hence, ionizing radiation to a pediatric patient and improve cost effectiveness.

P-059 Disruption of VTA and NAc Plasticity by the myristoilated Z-inhibitory Peptide (ZIP) in Cocaine Sensitized Rats

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Background & Objectives: Cocaine addiction induces long-lasting alterations in the mesocorticolimbic system; some of which may be mediated by mechanisms of long-term potentiation (LTP). Protein kinase M zeta (PKMζ) mediates the maintenance of LTP and its inhibition by ZIP, reverts this process. Previous laboratory data showed ZIP microinjection in the ventral tegmental area (VTA) on day 5 of a cocaine behavioral sensitization protocol, blocked initiation of sensitization but not expression. We hypothesized that uninterrupted signaling from VTA to nucleus accumbens (NAc) before inhibiting PKMζ, triggered plastic changes in the NAc. To elucidate if VTA LTP is essential for plasticity changes in the NAc, we continuously interrupted VTA LTP and looked for expression changes. Methods: Male Sprague-Dawley rats were given ZIP microinjections into the VTA for 5 days, 6hr after cocaine administration, followed by a withdrawal and cocaine challenge. Electrophysiological measurements of AMPA/NMDA ratios of VTA dopamine cells and and NAc gabaergic cells were done at two timepoints. Results: Behavioral results showed a decrease in total and stereotypic locomotion on day 5, but not on challenge day. Electrophysiological results showed that ZIP inhibition in the VTA interrupted NAc LTD after 5 days of sensitization and inhibited NAc LTP after a withdrawal period. Conclusions: VTA LTP is important but not essential for initiation, is not necessary for sensitization expression and is crucial for plasticity changes in the NAc. Further studies will shed light into the cocaine-induced LTP mechanisms that underlie cocaine addiction

P-060 High Overweight And Obesity Rates Among Childhood Cancer Survivors In A Sample Of Puerto Rican Children

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Background: Obesity is being increasingly recognized as a major cardiometabolic risk factor in childhood cancer survivors. Data about weight patterns among Hispanic children surviving cancer is limited. We describe the anthropometric patterns in a sample of Puerto Rican childhood cancer survivors and its relationship with cardiovascular outcomes. Methods: Retrospective, cross-sectional chart review of children(2-21yrs) with history of cancer that have attended an oncology clinic in a supratertiary hospital in Puerto Rico(PR) from May-November 2015, who have been on remission for >6mo. Subjects were categorized as overweight/obesity with body mass index(↑BMI) >85th percentile; elevated waist-to-height ratio(↑WHtR) if >0.5; elevated waist-to-hip ratio(↑WHR) if >0.85 females and >0.9 males; and elevated blood pressure(↑BP) if BP>90thpercentile. Medians/range, frequencies and percentages and Chi-Square/Fisher exact were used. Results: 80 subjects, median age was 13yrs(3,21), 51%female, age at cancer diagnosis 6yrs, time on remission 50mo(6,201). 43%subjects had leukemia/lymphoma, while 23% CNS tumors, and 36% other malignancies. 17% received radiotherapy. 49%subjects had ↑BMI, 57% had ↑WHR, and 7% had ↑WHtR, while 33% had ↑BP. ↑BP was associated with ↑BMI(11% normal wt vs 38% ↑wt, $p<0.05$) but not ↑WHR or ↑WHtR. No differences in age, sex, insurance, diagnosis, radiotherapy, WHtR and WHR were observed among subjects with normal BMI and ↑BMI($p>0.05$). Discussion: Hispanic children surviving cancer in this study had alarming high rates of overweight/obesity. ↑WHR and ↑BMI was observed in half of subjects, however, only BMI was associated to ↑BP. Interventions to prevent overweight/obesity in this childhood cancer survivors' population are needed.

P-061 Perfil Sociodemográfico de los Abuelos Responsables de sus Nietos, Puerto Rico: 2014

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Trasfondo y objetivos: Los abuelos responsables de sus nietos es un tema en apogeo, desde finales del siglo XX y principios

del siglo XXI, puesto que las situaciones sociales, económicas y culturales han cambiado a lo largo del tiempo y trastocan la formación familiar. El objetivo principal fue presentar las características sociodemográficas de los abuelos responsables de sus nietos. Métodos: El estudio es de carácter descriptivo. La población estudiada son los abuelos de 30 años o más, quienes eran responsables de sus nietos. El archivo de datos analizado es la muestra de la Encuesta de la Comunidad de Puerto Rico del 2014, que preparó el Negociado del Censo de Estados Unidos. Resultados: Se encontró que 4.3% de las personas no institucionalizadas de 30 años o más vivía con sus nietos. De estas, 47.4% era responsable de sus nietos. Además, se estimó que, entre los abuelos responsables de sus nietos, 61.5% era del sexo femenino, 61.7% estaba casado, 46.0% había sido responsable de sus nietos por 5 años o más, 62.4% estaba bajo el nivel de pobreza, 32.6% tenía diversidad funcional (incapacidad) y 4.5% no tenía seguro médico. La mediana de edad de este grupo poblacional es 59 años. Conclusión: En el pasado, se tenía la idea de que los abuelos eran mayormente personas de edad avanzada. Sin embargo, 53.2% de los abuelos responsables de sus nietos tenía 30 a 59 años. Por lo tanto, es importante hacer un análisis más profundo sobre sus características. Reconocimientos: No hay conflictos de interés.

P-062 Crímenes Violentos: Factores Biológicos y su Manejo desde una Perspectiva Ético-Salubrista

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Se analizan los factores biológicos (genéticos, neurológicos, neuroendocrinos y neuroquímicos) a considerar al juzgar a acusados de actos criminales violentos. Se hizo una amplia revisión de literatura de cómo los factores biológicos influyen en la violencia y criminalidad; asimismo cómo el aprendizaje mediado por factores del entorno social y los determinantes sociales de la salud inciden en los actos violentos. Se examinan las diferencias entre agresión y violencia, las características de la violencia y los factores que inciden sobre la conducta criminal en la comunidad puertorriqueña. De esta revisión concluimos que el conocimiento de la biología (las condiciones físicas, mentales y hereditarias o congénitas), además de los aspectos sociales del agresor violento debe formar parte de las consideraciones y deliberaciones en el sistema de justicia de PR. Se ofrecen recomendaciones para el manejo de la violencia desde un enfoque salubrista basado en la ética y la justicia social a nivel primario, secundario y terciario, tomando en cuenta nuestras características particulares como nación. Referencias: ASTHO {Asssociation of State and Territorial Health Officials} (2014) "Baseline Assessment of the Puerto Rico Public Health System ". Recuperado de: WWW.IMPACTIVO.COM; Beecher-Monas, E. & García-Rill, E. (2006) 'Genetic predictions of future dangerousness: Is there a blueprint for violence?' Recuperado de: http://law.duke.edu/journals/lcp; Dajas, F. (2010). El cerebro violento. Sobre la psicobiología de la violencia y los comportamientos agresivos. Rev Psiquiatr Urug 74(1):22-37, 2010.; Irizarry Castro, A., Ed. (2013) Perfil de la Violencia en Puerto Rico: 1984-2004, Centro Agenda Puertorriqueña para la Calidad de Vida, UIA Metro, 2013.

P-063 Effects of Piracetam Treatment on Learning and Memory in Adult and Adolescent C57BL/6J Mice

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Background & Objectives: Learning and memory processes have been widely studied within the context of cognitive impairments. Drugs known as 'nootropics' have been developed to improve such deficits in cognitive impaired individuals. Nevertheless, the impact of nootropics on 'boosting' learning and memory in healthy subjects remains unclear. Currently, the most commonly used nootropic agent is piracetam, which appears to enhance cognition by activating various neurotransmitters, particularly acetylcholine. In this study we hypothesized that piracetam treatment would improve spatial learning in adolescent and adult C57BL/6J mice. Methods: Two experiments were performed (n=6-8/treatment/age) where learning and memory was measured using a Morris-water maze spatial learning task. The latency to reach a hidden platform was recorded across four testing trials for three consecutive days. In the first experiment, prior to spatial learning, mice received an intraperitoneal injection of piracetam 100 mg/kg or saline. In the second experiment, adult mice (n=6-7/treatment) had piracetam (100 μM) or aCSF infused into their prefrontal cortex followed by the spatial learning task. Results: Systemic piracetam treatment significantly enhanced spatial learning in adult, but not adolescent mice where it considerably reduced spatial learning instead. Consistent with the first experiment, intra-cranial treatment of piracetam resulted in a significant enhancement of spatial learning in adult mice. Conclusions: These findings suggest that piracetam selectively enhances prefrontal-dependent learning during adulthood only, which may result from changes in the expression of cholinergic receptors during brain development.

P-064 Perfil de los usuarios de automóviles y de otros medios de transportación para ir al trabajo, Puerto Rico: 2009 - 2013

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En el 2013, la población de Puerto Rico se estimaba en 3,682,996 y aproximadamente 1,057,020 personas estaban empleadas. De éstas, el 91 por ciento utiliza su auto para transportarse a

su trabajo mientras el 9 por ciento se sirve de otros medios. El objetivo de esta investigación es compilar y comparar un perfil sociodemográfico de los usuarios de automóviles con los usuarios de otros medios de transporte para ir a trabajar. Se recurrió a los datos obtenidos en la Encuesta sobre la Comunidad de Puerto Rico para 2009-2013 contenidos en los Archivos Microdata-PUMS del Negociado del Censo. El 18.2 por ciento de los hogares no cuenta un vehículo. En la mayoría de los hogares en Puerto Rico hay más de un carro (1.3). La edad promedio de las personas que no llegan a su trabajo por medio de un carro es dos años mayor (43.49 años) que los que sí utilizan su auto (41.90.) Por otro lado, las personas que no se valen de un automóvil para transportarse al empleo, tienen un promedio de dos años de escolaridad menos (12.20) que los que sí usan un auto para llegar a sus empleos (14.19). El porcentaje de personas que aprovechan otros medios de transportación para dirigirse a sus trabajos es mínimo comparado con las personas que usan sus vehículos para los mismos fines. Estos datos sugieren estudiar los beneficios de un sistema de transportación pública adecuado que disminuya las consecuencias del uso de automóviles como medio de comparecer al trabajo.

P-065 Promoting Biomedical Sciences: 3D Printing Workshop for Undergraduate Students

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Background & Objectives: Three-dimensional (3D) printing technology is now being used in many science fields for the production of prototypes and tools for scientific use. We recognize how this technology has quickly evolved and how it has become a very important asset in science. The objective of our project was to develop a 3D Printing Workshop to teach Puerto Rican undergraduate students how to use this technology in developing educational tools relevant to the biomedical sciences. Methods: A group of 5 students was selected from applications received from the University of Puerto Rico (UPR) Rio Piedras and Cayey campuses. Activities included conferences, demonstrations, and training in the use of a 3D printer. Students were also exposed to design software programs such as: Sketch Up, netfabb Basic, Cura and Repetier Host. Weekly attendance (3 hrs) was required for a nine-week period. Results: Various educational 3D biomedical models were created using open-source programs from the National Institutes of Health including a neuron, the Hepatitis B protein and an ear. As a final project students designed a 3D printed prototype for a personalized finger splint, applying the knowledge and skills developed during the workshop. Conclusion: The Biomedical Research 3D Printing Workshop demonstrated that 3D printing technology can be applied diversely in the biomedical field and also can be used as an educational tool to stimulate the interest of Puerto Rican undergraduate students in biomedical research. Acknowledgments: Supported by National Institute of Minority Health and Health Disparities (NIMHD), RCMI Grant G12 MD 007600.

P-066 Amantadine administration after spinal cord injury does not enhances functional locomotor recovery in female Sprague-Dawley rats

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Background & Objectives: Spinal Cord Injury (SCI) is a condition with an incidence of 12,000 new cases per years in the US. SCI may lead to serious health complications and, ultimately, death. After injury, the affected area suffers from demyelination, glutamate excitotoxicity, and astrogliolisis, among other adverse reactions toward axonal regeneration. Amantadine (AMA), an FDA-approved drug, has been shown to act as an NMDA blocker and confer neuroprotection to the brain after traumatic brain injury (TBI). We hypothesized that AMA administration on the injured spinal cord would improve functional locomotor recovery. Methods: AMA (3.6 mg/kg daily) was immediately administered intrathecally after an injury at the T10 level with NYU impactor device on Sprague-Dawley female rats. Rats were evaluated during 14 and 28 days post-injury (DPI). Animals were weekly submitted to BBB, Grid walking and Beam Crossing tests to

assess locomotor skills improvement. Western Blots of the cord were performed to analyze protein expression level of NFH, Neu-N, Gap-43, and GFAP, and study axonal structure and regeneration. Results: Results showed no significant difference between experimental and control groups at any of the time-points evaluated at the behavioral and molecular levels. Conclusion: Interestingly, these results led to the conclusion that the administered dose of AMA was not enough to enhance functional locomotor recovery, or confer any notorious neuroprotective effect on the cord, different to its effect on the brain after TBI. Future immunofluorescence and histological studies will be conducted to further determine AMA effects after SCI. Acknowledgments: Approved by IACUC (#245015) in February 2015. Supported by: Title-V cooperative (P031S130068), COBRE (P20-GM103642).

P-067 Public Health Workforce 2015 Training Needs Update in Puerto Rico

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Background and Objectives: A capable and qualified workforce is an essential component of the public health (PH) infrastructure and fundamental to provision of essential PH services. A strong infrastructure provides the capacity to prepare and response to emergent threads to the health of the communities. The goal of this assessment survey of governmental PH workforce in Puerto Rico (PR) was to gather information regarding the training needs priorities since previous 2011 comprehensive need assessment by PR Florida Public Health Training Center. Methods: A brief online training needs survey designed by Region 2 PHTC was performed in March 2015 by top executive level of 13 Regions of Department of Health. Leaders were asked to rank the importance of training for each occupational level (entry, middle and top executives). Results: The five specific training domains identified as priority was: financial planning/management, policy development/program planning, analytical/assessment skills, leadership and system thinking. The five top content priority areas identified were: environmental PH, Health Information Technology, PH Preparedness, Infectious diseases, Nutrition/Obesity and social disparities. Conclusions: The development of assessment culture is a priority for addressing needs or gaps for organizational improvement, resource allocation, informed decisions, health prevention and health promotion. Evidence has shown that high quality and priority trainings improve the performance, efficiency and effectiveness of the PH systems. Acknowledgement: HRSA Grant No UB6HP27878 funded this study. The authors report no conflict of interest.

P-068 Dibutyl phthalate affects synaptic growth and stability at the Drosophila NMJ

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Dibutyl phthalate (DBP) is a contaminant found ubiquitously in the environment that could therefore affect multiple organisms. In the present study, we address the effect of DBP at the Drosophila neuromuscular junction (NMJ). We reared animals in contaminated food at environmentally relevant concentrations and tested the effect of DBP on the synapse structure and morphology. We characterized a variety of synaptic markers: the vesicle marker synapsin, the microtubule associated protein Futsch (MAP1B homolog), the active zone associated structural protein Bruchpilot (CAST homolog), the postsynaptic marker discs large (Dlg; PSD-95 homolog) and the presynaptic membrane marker HRP. The animals that were reared in a milieu with a concentration of 0.06 mg/L DBP, presented a reduction in synaptic growth. Indeed, synapses from contaminated milieu showed a growth that was 80% of the control synapses. In addition, the animals reared in contaminated milieu showed synaptic retractions. These retractions are defined by the presence of postsynaptic markers and the absence of a subset of presynaptic markers. In animals reared in milieu containing a concentration at 0.06 mg/L DBP, 30% of the synapses showed a retraction phenotype (boutons lacking synapsin staining) and these retractions showed a severity of 5 boutons on average. We also observed that the animals exposed to DBP have boutons deficient in MAP1B and CAST. We conclude that DBP is able to provoke synaptic instability akin to what is seen in neurodegenerative diseases. We are now focusing on the consequences of DBP on synaptic release and plasticity. Acknowledgements NSF-CREST HRD-1137725

P-069 Musculoskeletal Manifestations of Non-Accidental Trauma: Analysis at a Level 2 Trauma Center

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Background & Objectives: Non-accidental trauma remains a major cause of injury and death among children. Abuse is second most common cause of death in children between 1 and 5 months old and older than 1 year. To date, there is no study exploring the epidemiology of non-accidental trauma in Puerto Rico (PR). This study aims to gain a perspective on the incidence of child abuse in PR, to better identify risk factors that may place a child in danger of physical abuse, and to aid in physician recognition of this condition. Methods: We included children under 3 years old presenting to the Emergency

Department of a Level 2 Trauma Center from 1996 through 2014. Medical records were reviewed to see if indicators helpful in distinguishing potential abusive from accidental injuries were documented. Demographic data, presenting features, mechanism of injury, fracture patterns and referrals to Child Protective Services were recorded. Results: A total of 75 patients were included. Children less than 1 year old were most affected and femur fractures were the most common long bone injury. Most incidents were classified as unwitnessed by caregivers but health care professionals evaluated patients the same day as the accident. Most parents were unemployed and single at the time of the incident. Social Work and Child Protective Service intervention led to change in custody in about half of cases. Conclusion: Musculoskeletal manifestations of non-accidental trauma in the Hispanic population did not differ from that in orthopedic literature. Acknowledgment: Biopsychosocial Program UPR Medical Sciences.

P-070 Exogenously Applied Retinoic Acid Signaling Modulators Promote Changes in Optic Nerve Regeneration after Axotomy

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Introduction: Recovery of vision after optic nerve injury requires retinal ganglion cell (RGC) survival, axonal regrowth past area of the lesion and reformation of appropriate synaptic targets. Frog RGCs suffer an approximately 50% cell loss, but regeneration and reconnection to target areas still occurs thanks to the lack of inhibitory glial molecules and physical obstructions. Objective: To understand how retinoic acid (RA) signaling affects RGC axonal regeneration in the adult frog visual system after inducing an injury to the optic nerve. Methods: We quantified the number of viable retinal axons crossing the lesion area, changes in the speed of regeneration, changes in the abundance of regeneration associated proteins (GAP-43, NAV-2, BASP-1, and Neurogranin), and activation of relevant intracellular pathways in non-treated and animals treated with RA signaling agonists and antagonists. Results: A significant increase in the number of regenerating axons was found in the optic nerves of animals treated with all-trans Retinoic Acid (ATRA). Levels for regeneration associated molecules and activation of MAPK, STAT3, and AKT change with both RA agonist and antagonist treatments. Conclusions: RA potentiates axonal regeneration in the injured adult frog optic nerve, the abundance of proteins associated to axonal elongation, and the activation of relevant signaling cascades. Understanding RA role in the response of RGCs to trauma may help in the discovery and generation of new treatments for conditions such as glaucoma, diabetes, and optic ischemia. Support: NIH-GM 093869, NIH RCMI-G12RR0305, MBRS-RISE R25GM061838

P-071 The Biological Role of BAT-1 in Prostate Cancer

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Background & Objectives: Prostate cancer is the most common cancer in men in the United States and the second cause of cancer death in men. In Puerto Rico, prostate cancer is the most common type of cancer and the leading cause of cancer death in men. The current available biomarkers are unable to predict malignant outcomes such as recurrence. Thus, there is a critical demand for the development of innovative diagnostic and prognostic tools for the management of prostate cancer. In the current study, we evaluated the biological role of BAT-1 in prostate cancer. Preliminary data from patients who had prostate cancer recurrence identified that HLA-B associated transcript 1 (BAT-1) was down-regulated in patients with prostate cancer recurrence when compared with non-recurrent patients. Methods: We down-regulated BAT-1 in prostate cancer cell lines using small interfering RNA (siRNA). In vitro assays were performed to measure proliferation, apoptosis, migration and invasion. Results: Flow cytometry analysis using the cell Viability/Annexin V cell staining kit showed that down-regulation of BAT-1 significantly increased the proliferation of PC3 cells ($P<0.05$) but decreased apoptosis. Wound healing assays showed that cells treated with BAT-1 siRNA significantly increased migration and motility at 12h and 24h of PC3 cells when compared to control ($P<0.05$). Our results showed that BAT-1 down-regulation increased migration and cell motility. Cells also tend to proliferate more, but have reduced apoptosis. Conclusions: These results were expected due to its down-regulation in recurrent prostate cancer patient samples, suggesting that BAT-1 down-regulation promotes aggressiveness in prostate cancer recurrence.

P-072 Andrographolide Alters Genes Associated with DNA Repair in Prostate Cancer

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Background & Objectives: Prostate cancer is the most frequently diagnosed non-cutaneous cancer and the second cause of cancer-related deaths in American men. Andrographolide, a component of the medicinal plant Andrographis paniculata, has been reported to have a wide range of biological activities including anticarcinogenic properties. In previous studies, we found that Andrographolide inhibits cell growth, tumor growth and angiogenesis in prostate cancer. Therefore, the objective of this study is to determine the mechanism of action of Andrographolide in prostate cancer. Methods: Thus, we did gene expression profile to compare genes differentially expressed in tumors treated with Andrographolide (10 and 25 mg/kg) and their vehicle. Tumors were developed using a xenograft model in which the prostates were injected with 22RV1, and mice were treated bi-weekly with Andrographolide (10 and 25 mg/kg). Tumor tissues were collected and snap frozen. Results: Microarray studies showed a total of 674 and 218 genes differentially expressed in tumors treated with Andrographolide 10 and 25 mg/kg, respectively, when compared to vehicle. Genes involved in cellular processes such as cell cycle and DNA damage response were differentially expressed. Ingenuity Pathway Analysis (IPA) revealed networks associated to DNA replication and repair in tumors treated with Andrographolide (10 mg/kg). Moreover, IPA revealed networks associated to cell death and survival and cellular function in tumors treated with Andrographolide (25 mg/kg). The microarray results were confirmed by quantitative real-time PCR. Conclusions: Our results demonstrated that Andrographolide altered the expression of genes associated with DNA repair which could be a possible mechanism of action of its anticarcinogenic effect.

P-073 Mathematical Model for the Kinetics of Calcium-induced Mitochondrial Swelling: Biophysical Approach

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Background: Opening of the mitochondrial permeability transition (MPT) pores plays a decisive role in cell death through apoptosis and necrosis results in mitochondrial swelling. Hence, elucidating the mechanisms of mitochondrial swelling is important for understanding the role of Ca2+, a potent MPT inducer, and divergent mitochondrial subpopulations in mitochondria-mediated cell death. Purpose: We develop a simple kinetics model of mitochondrial swelling in response to increased Ca2+ concentrations that occurs under pathological conditions. Additionally, this model will be extended to investigate divergent mitochondrial subpopulation based on spatial heterogeneity and size of mitochondria. Methods & Results: We use a kinetic analysis of mitochondrial swelling based on biophysical characteristics of mitochondria. This model will be verified experimentally by simulation and fitting procedures on different subpopulation of cardiac and liver mitochondria isolated from rats. Swelling is induced in isolated mitochondria by addition of gradually increased concentration of exogenous Ca2+. The extent of mitochondrial swelling is measured by light scattering at 540 nm by a spectrophotometer. Concentration of free Ca2+ in the incubation media is quantified by measuring of Calcium green-5N fluorescence. Physical and chemical parameters/constants necessary for modeling of swelling kinetics will be taken from previously published articles. Conclusion: Our model describes the mitochondrial swelling kinetics induced by variety in Ca2+ flux, reveal the number of MPT pores, quantify the limits by which different mitochondria switch from physiological to pathological functions, and determine dependence of volume swelling on mitochondrial number. Acknowledgement: Study was supported by the SC1HL118669 NHLBI NIH grant. Conflict of interests: None

P-074 Efecto del Aumento del Nivel del Mar en las costas de Cartagena de Indias, Colombia

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Cartagena de Indias posee el mayor puerto de la costa del Caribe y es una de las zonas con mayor afluencia turística de Colombia. El Aumento del Nivel del Mar (ANM) por efecto del Cambio Climático (CC) influye en la erosión del litoral, las fuertes lluvias y los fenómenos oceánicos como el mar de leva y las marejadas. Todos estos factores se combinan con un sistema de drenaje insuficiente para producir patrones de inundaciones en toda la zona, particularmente en el Centro Histórico, la península de Boca Grande, Castillo Grande, El Laguito, Manga y El Pozón. El objetivo de este trabajo es evaluar el ANM y su efecto sobre la vulnerabilidad de la infraestructura urbana, hotelera, y de salud en las zonas más susceptibles a inundaciones, utilizando como herramienta de investigación ArcGIS. Según la proyección del modelo de ANM de 1m y 5m para Cartagena de Indias dado por NASA (http://flood.firetree.net) se pudo establecer que las áreas más afectadas corresponden a la zona hotelera, el aeropuerto y el Centro de Convenciones en La Boquilla, la Ciénaga de Tesca, los muelles y las costas aledañas a la Base Naval A.R.C., la zona portuaria de Cartagena, parte del Centro Histórico, la zona del Monumento a la India Catalina y la zona de la Laguna del Cabrero. La expectativa es que en los próximos años el ANM siga en aumento poniendo en riesgo la economía y la población de la zona.

P-075 Retinoic Acid Receptor Beta and Gamma Agonists Effects on the Activation of Intracellular Signaling Pathways in the Regenerating Adult Retina

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Introduction: After optic nerve trauma, certain intracellular pathways are activated to promote both retinal ganglion cell survival and axonal regrowth. Retinoic Acid has shown to enhance the activation of relevant signaling cascades, such as MAPK and AKT in diverse neuronal populations during development and disease. Objective: To understand how retinoic acid (RA) receptor modulators may affect the activation of relevant intracellular pathways in the adult frog visual system after inducing an injury to the optic nerve. Methods: We quantified changes in the activation of MAPK, AKT, and STAT3 intracellular pathways in retinal extracts from non-treated and animals treated with RARβ and RAR signaling agonists by performing Western blot analysis. Specific antibodies against the phosphorylated and total forms for all three studied pathways were used to visualize changes in their distribution in control and experimental retinas after either vehicle or RAR agonist treatments. Results: Activation of MAPK, STAT3, and AKT significantly change after axotomy. The intraorbital application of RAR agonists' treatments also affects their activation in the regenerating retina. Conclusions: RA signaling may play a role in axonal regeneration in the injured adult frog optic nerve through the activation of relevant signaling cascades. Understanding RA role in the response of RGCs to trauma may help in the discovery and generation of new treatments for conditions such as glaucoma, diabetes, and optic ischemia. Support: NIH-GM 093869, NIH RCMI-G12RR0305, MBRS-RISE R25GM061838

P-076 Correlation Between the Severity of Adverse Effects Caused by Psychiatric Drugs and CYP2D6 Genotype Activity Score in Puerto Rican Patients

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Background and Objectives: Many drugs used in Psychiatry are inactivated by the highly polymorphic P450 enzyme CYP2D6. We probed previously-obtained data to test whether the severity of adverse events in 50 Puerto Rican patients was correlated with their ability to inactivate their prescribed medications, as inferred from the Activity Score of their CYP2D6 genotype (ASCyG). Methods: Genotyping was performed with the Roche AmpliChip. The severity of adverse events was obtained by a board-certified psychiatrist (GG-T) using the Udvalg for Kliniske Undersogelser (UKU) Side Effect Rating Scale. Patients were categorized according to inclusion of pharmacogenomics information in FDA-approved labelling for their prescribed drugs (Group-1, n=23) or not (Group-2, n=20). All patients with haloperidol, a Group-2 drug were also evaluated (n=19). Results: The median overall UKU score was 34 in Group-1 and 27 in Group-2; seven patients were excluded because of low overall UKU scores (≤9). For haloperidol, the ASCyG was significantly correlated with UKU score for memory problems and tiredness ($p<0.05$). For all Group-2 drugs, ASCyG was correlated with memory problems and accommodation. The UKU score was significantly higher in Group-1 than Group-2 for the following adverse events: memory problems, decreased sleep, dystonia, rigidity, rash, and accommodation. Conclusions: Low ASCyG was correlated with more severe adverse events for selected psychiatric drugs in Puerto Rican patients. Nonetheless, the retrospective nature of the study and the extensive list of prescribed drugs may have reduced our ability to detect more correlations. Acknowledgements: Partially supported by P20 RR11126 from NIH. Approved by IRB

P-077 HPV vaccine rate and willingness to vaccinate among Hispanic females with abnormal cervical cytology attending colposcopy clinics in Puerto Rico

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Objectives: To assess HPV vaccination rate and willingness to vaccinate among Hispanic women with abnormal cervical cytology attending colposcopy clinics. Methods: Women attending colposcopy clinics at the University of PR School of Medicine and the San Juan City Hospital clinics for Colposcopy due to abnormal pap smear were surveyed regarding HPV and HPV vaccine knowledge, vaccine rate and willingness to vaccinate. Data was analyzed using univariate statistics. Results: Results: Of the 467 subjects, 78.80% have heard of HPV and 73.45% have heard of HPV vaccination. Although 96.15% of participants have not received the vaccine, 81.80% were willing to vaccinate their children. Participants ages 21 to 26 (n=57) show a vaccination rate of 12.28% and 70.17% willingness to vaccinate their children, participants 27 years and older (n=409) reported a vaccination rate of 2.68% and 83.62% willingness to vaccinate their children. Vaccine information was given by medical service providers to 42.11% of participants ages of 21 to 26, and to 26.89% who were 27 years or older. Conclusion: In this group of patients with abnormal cervical cytology knowledge of HPV vaccine and willingness to vaccinate is high, while vaccination rate is low. Physician role is

important in HPV education and vaccine promotion, specially in patients who already have an abnormal cytology.

P-078 Regulation of the Activity-Dependent Synaptic Plasticity: The Role of the Planar Cell Polarity Pathway

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Synapses are shaped by plastic events that promote or limit changes in synaptic strength. Indeed, changes in electrical activity can lead to modifications in synaptic strength, which are often accompanied by structural changes in synapse shape and/or number. A great way to address the molecular mechanisms involved in this activity dependent plasticity is to take advantage of a well-known model such as the Drosophila neuromuscular junction (NMJ). It has been demonstrated that repeated stimulation provokes the appearance of new synaptic boutons and the increase in frequency of miniature EPSPs (mEPSPs) at the NMJ. In addition, studies have shown that the Wnt/wingless (wg) canonical pathway and the Wnt/wg Ca2+-dependent pathway are important to achieve this plasticity. However, it is still unclear whether Wnt/wg planar cell polarity pathway (PCP) is important for this phenomenon. The Wnt/PCP pathway is composed of a series of small GTPases, such as Rac, Rho and Cdc42, which are downstream of disheveled and upstream of JNK. Here, we look at the appearance of de novo boutons formation after repeated stimulation in animals expressing the dominant-negative form of some members of this pathway or in animals over-expressing them. Our data shows that the loss of function of JNK results in a decrease in the formation of new boutons suggesting that the PCP pathway can modulate activity-dependent synaptic plasticity. Further studies will ask whether the small GTPases of the PCP pathway have a role in this plasticity.

P-079 Ectyma gangrenosum as a presentation of Bruton Agammaglobulinemia

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Bruton Agammaglobulinemia is an x-linked disorder that usually present with pneumonia and ears infection in infants older than 6 months. Septicemia by pseudomonas aeroginosa it's a rare presentation of the disease. We present a case of 8 months old male patient, previously a healthy baby with no allergies or previous hospitalizations and with his immunizations up to date. One week before Pediatric Intensive Care Unit (PICU) admission, he presents with a maculopapular rash over the whole body, sparing the palms and soles. Rash progressed into necrotic lesions with bullas and was associated with high grade fever, vomits, diarrhea and neutropenia. Patient was transferred to PICU due to severe intractable septic shock , that require intubation, aggressively hydration, multiple inotropes, broad spectrum IV antibiotics, blood products due to DIC and hydrocortisone. Patient developed anasarca, ARDS, oliguria and volume overload, requiring hemodialysis . Patient received cefepime and garamycin to treat a positive bood culture of Pseudomonas Aeroginosa. HIV test was negative and IG levels; to search for immunodeficiency, were low for age. Skin biopsy was negative for any organism. Family history reveals a cousin with agammaglobulinemia who receive monthly infusions of IV Igs and a sibling died at 9 months. Patient received 5 doses of immunoglobulins due to severe neutropenia (WBC<1) and low immunoglobulins levels . Despite all resuscitative measures, patient died due to a severe septic shock unresponsive to inotropes.

P-080 Presurgical Management of Bilateral Cleft Lip and Palate Neonate using Nasoalveolar Molding: Case Report

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Purpose: Cleft lip and palate are the single most common congenital deformity affecting the orofacial structures. The causes are multifactorial and involve genetics, environmental factors, and teratogens. Approximately 1 in 500-700 births will have some form of orofacial clefting: cleft of the lip, palate or some combination. Case Description: We report the case of a 1-month-old non-syndromic male patient with bilateral cleft lip and palate that was referred to the Craniofacial Orthodontic Clinic at the University of Puerto Rico. The premaxilla was displaced to the right side, columella was nearly absent and lip segments were widely separated. Clinical Approach: Nasoalveolar Molding was used as part of a presurgical neonatal management to mold the nasal cartilages, premaxilla, and alveolar ridges into normal form and position. Clinical Findings: Patient's premaxilla was aligned 6mm to the facial midline, lip segments were approximated, columella was increased and baby's feeding was improved. Hypothesis: This technique reduces surgical scars associated with traditional columella reconstruction, the number and cost of revision surgical procedures. Patient's quality of life and surgical outcomes are improved after treatment. It is a promising treatment that is encouraged to be applied after birth and to be continued until further provisional or definite corrective surgeries.

P-081 Clinical Characteristics of 152 Laboratory-Confirmed Cases of Influenza in Puerto Rico

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Background- Influenza is a common viral infection affecting millions of people worldwide. In temperate climates epidemics of influenza occur almost exclusively in the winter while in tropical climates influenza can occur throughout the year and seasonal fluctuations are not as marked. The aim of our study is to describe the clinical and laboratory characteristics as well as outcomes in laboratory-confirmed cases of influenza A and B in Puerto Rico. Methods- We use data from the Sentinel Enhanced Dengue Surveillance System for acute febrile illnesses conducted at the UPR Hospital in Carolina from July 29, 2013 to August 24, 2015. All participants were tested for influenza and other viral diseases. Results- Of the 1,427 cases of acute febrile illness enrolled in the study, 152 (11%) were laboratory-confirmed influenza cases by PCR testing. The mean age of the influenza cases was 22 years (range: 4 months to 93 years) and 78 (51%) were females. Only 26 (17%) patients were hospitalized and there were no fatal cases. Of the total; 96 (63%) had influenza A and 56 (37%) influenza B with a hospitalization rate of 17% and 18% respectively. The most common symptoms were fever (95%), cough (83%), and headache (79%). Laboratory results available from 124 participants showed a mean white blood cells (WBC) count of 7,500 (range of 3,230—27,560). Conclusion- Most laboratory-confirmed influenza patients were positive for influenza A and discharged home for outpatient care. The rate of hospitalization did not differ by the type of influenza. Acknowledgments - This project was supported with Grant 5U01CK000274 from Centers for Disease Control and Prevention and Grants 5S21MD000242 and 5S21MD000138 from National Center for Minority Health and Health Disparities, National Institute of Health.

P-082 Novel strategies for therapeutic targeting of chemoresistance pathways in poor-prognosis DNMT3A-mutant Acute Myeloid Leukemia

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Acute myeloid leukemia (AML) is a rapid progressive hematopoietic cancer. Mutations in DNMT3A are a frequent finding in adult primary AML and are associated with poor prognosis and relative resistance to induction chemotherapy, necessitating novel treatment options. The molecular mechanism by which DNMT3A mutant cells acquire this resistance has not been investigated. The goal of this project is to gain insight into the possible mechanism by which DNMT3A mutant cells are escaping cell death. We hypothesized that cells harboring DNMT3A mutations either acquire general resistance to apoptosis or have impaired response to specific types of DNA damage. To this end we took advantage of a panel of leukemic cell lines with different DNMT3A status to test their sensitivity to DNA damaging agents with different mechanism of action and to BCL-2 family inhibitors. Expression of mutant DNMT3A leads to decreased sensitivity to low doses of daunorubicin in vitro that can be overcome by dose escalation, in full agreement with clinical observations. This correlates with higher expression of anti-apoptotic BCL-2-family proteins. However, inhibition of the BCL-2 family members did not re-sensitize DNMT3A-mutant cells to anthracyclines and therefore combinations of BCL-2 family inhibitors with other DNA damaging agents need to be tested. Cells with mutant DNMT3A are differentially resistant to specific types of DNA damage which leads to decreased sensitivity to DNA torsional stress induced by DNA intercalation. Also, DNMT3A mutant cells do not affect sensitivity to DNA breaks resulting from topoisomerase II inhibition or other mechanisms. A special thanks to Memorial Sloan Kettering Summer Program

P-083 When Prophylaxis causes more Harm than Good

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Case of 72 years old female who presents to the emergency room with uncontrolled hypertension, CT scan was performed with findings of intracranial hemorrhage. During hospitalization was intubated due to respiratory failure started on cefepime due to pneumonia. Proton pump inhibitor pantoprazole for gastric ulcer prophylaxis was started. After five days, patient developed fever, anuric acute kidney injury (AKI) and skin multiple palpable purpuric non blanching lesions. Skin biopsy was reported leukocytoclastic vasculitis. Laboratory tests remarkable for serum creatinine levels of 10.3 mg/dl and elevated sedimentation rate. Eosinophiluria found on urine analysis. ANA test, C-ANCA, P-ANCA were negative and complement C3 and C4 levels were normal. Renal sonogram unremarkable. Upon evaluation by Nephrology service, cefepime and pantoprazole were discontinued. Hemodialysis and prednisone were initiated for management of highly suspected acute interstitial nephritis (AIN). Renal biopsy contraindicated due to obesity. After two weeks, patient responded excellent to treatment, decreasing creatinine levels to 1.30 mg/dl and skin lesion healed. AIN is characterized by inflammatory infiltrates within the renal interstitium. It's an uncommon cause of AKI identified in approximately 2% of all renal biopsy specimens and its most often induced by drugs, particularly antimicrobial agents and proton pump inhibitors. Treatment primarily consists of withdrawal of offending agent and if no improvement noted, steroid therapy reduces residual renal damage. Dialysis therapy is often required but only 10%

remain dialysis dependent. This case presents the triad of AIN of fever, rash and eosinophiluria, which extremely rare and only found on 10% of patients.

P-084 Increase in Children's Asthma related Prescriptions during the Fungal spores and Tree-pollen seasons in Puerto Rico

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Background: To assess the role of outdoor allergens as triggers of asthma in PR, we compare the data of asthma related prescriptions with the levels of outdoor fungal spores and pollens. Methods: Outdoor aeroallergens (pollens and fungal spores) were collected 24/7 with the Burkard air sampler at the American Academy of Allergy Asthma and Immunology San Juan-NAB Station. Asthma related prescriptions claims in children and adults was provided by the Pharmacy Benefits Managing Database of Abarca Health. Seasons of tropical pollens and molds were correlated to asthma prescription claims for the years 2010 and 2014. Results: In PR, the peak of tree-pollens (tree-pollen season) occurs on week's 1-37 and the peak of fungal spores (fungal spores season) occurs on week's 37-47. In children, we observed a concurrent increase in the sympathomimetic prescriptions (the most prescribed drugs for asthma) and inhaled corticosteroids (asthma controllers) during both the tree-pollen and fungal spore seasons. The increase in asthma prescriptions during the high levels outdoor allergens was not observed in the adults. Conclusions: We report a raise in the asthma related prescriptions during the seasons of fungal spores and tree pollens in PR in children. This study confirms the importance of tropical outdoors allergens as triggers of asthma in PR. This information could be critical for the management of asthma and allergies. Acknowledgements: Data on asthma medications provided by Abarca Health.

P-085 Knowledge of Obesity as a Risk for Cancer among Puerto Rican Women

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Background & Objectives: Obesity, a strong predisposing factor for various cancers and women health conditions, has reached epidemic levels in Puerto Rico, with 66.6% of the population reported as obese. In order to reduce its prevalence, education efforts must focus on promoting preventive measures and healthier lifestyles. To do so effectively, it is pertinent to evaluate the female populations' baseline knowledge about obesity's comorbidities and to asses their most common sources of medical information beforehand. Methodology: Eligible patients from the Gynecology and Gynecology-Oncology Clinic completed a self-administered survey. Participants were evaluated on sociodemographic characteristics, information gathering, lifestyle and knowledge about obesity related outcomes. Results: Analysis of the first 228 women revealed that 46.5% were obese according to their BMI and 49.6% had a history of cancer. Although most associated comorbidities with cardiac disease (81.6%), diabetes (77.63%) and hypertension (75.44%), obesity was seldom linked to cancer. Among the listed types, endometrial cancer (46.9%) was the most recognized, followed by colon (46.5%) and breast cancer (41.7%). Correct risk identification varied by BMI classification and cancer history, highest being among Obesity I and Obesity III participants. As for medical information sources, primary doctor (78 %) and internet (58%) prevailed. Conclusions: Participants displayed varying understanding of obesity as a health risk, which was found greater with higher BMI classifications. Among cancer diagnoses, the association with endometrial was the most known, whereas breast cancer was the least correlated. Nevertheless emphasis should be placed on improving general education efforts, especially by primary doctors.

P-086 Surgical, Periodontal and Orthodontic Management of Impacted Maxillary Central Incisors

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Purpose: In some children, the permanent central incisors fail to erupt and become impacted within the alveolus. Various treatment modalities are available for the management of impacted maxillary central incisors in order to restore function and esthetics. Case description: The aim of this case report is to demonstrate the successful treatment outcome of a 9 year old female patient with no contributory past medical history and bilateral impaction of central maxillary incisors associated with supernumerary teeth. Clinical Approach: A combination of surgical exposure with closed eruption technique, orthodontic movement, labial frenectomy and gingivectomy was used to align maxillary incisors into the dental arch. Clinical findings: Both maxillary central incisors were effectively aligned with a well-defined gingival contour, achieving good functional and esthetic results. Patient's self esteem and social integration improved. Hypothesis: The closed eruption surgical flap technique is associated with more beneficial esthetic results than the apically repositioned flap for labially impacted teeth positioned high in the vestibule.

P-087 Biodentine Pulpotomy for Complicated Crown Fracture: A Case Report

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Purpose: Different alternative materials exist today in the treatment of traumatic permanent teeth. Bioactive products promise to be more effective as pulp capping material by creating a specific biological response which results in the formation of a bond between the tissue and the material inducing vital tissue healing a repair. Case description: A healthy 8-year-old girl presented at the Pediatric Dentistry Postdoctoral Program University Hospital Clinic, School of Dental Medicine, University of Puerto Rico accompanied by his mother with a complicated crown fracture in an immature anterior permanent tooth. Clinical Approach: It was decided to performed a pulpotomy by removing the coronal pulp tissue and placing Biodentine as pulp capping cement followed by immediate restoration with patient's tooth fractured fragment. Clinical findings: Tooth was assessed clinically (1 week, 30 days and 3 months) through pulpal sensitivity tests and radiographically for periapical healing. Clinically, however, the tooth has normal color, is asymptomatic, and vitality-testing responses were found normal after 3 months. Hypothesis: Biodentine pulpotomy is recommended as a treatment option for cases of vital pulp exposure in permanent incisors due to trauma. Acknowledgements: None.

P-088 Perfil del inmigrante no ciudadano de Estados Unidos residiendo en Puerto Rico

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Trasfondo y objetivo: En el análisis demográfico de la migración, es relevante tomar en consideración el volumen de la población migrante y sus características. El objetivo principal fue describir las características sociodemográficas de los inmigrantes no ciudadanos estadounidenses que residían en Puerto Rico, en el 2013. Métodos: Por medio de la muestra de la Encuesta de la Comunidad de Puerto Rico del 2013, que preparó el Negociado del Censo de Estados Unidos, se realizó un análisis descriptivo de los residentes no ciudadanos estadounidenses de 25 años o más. Resultados: Se encontró que 1.4% de la población de Puerto Rico no era ciudadana de Estados Unidos. Entre sus características, se halló que 54.2% era del sexo femenino y 45.8% del masculino; 67.9% es de origen dominicano, 45.8% estaba casado; 59.2% tenía diploma de escuela superior; 61.5% no hablaba inglés; 59.1% estaba empleado y 11.9% estaba desempleado; 21.2% no tuvo ingreso; 15.2% tenía diversidad funcional (incapacidad); 39.1% no tenía seguro médico; y 46.0% llegó a Puerto Rico, en el año 2000 o después. Además, la mediana de edad fue 46 años (46 años, para los del sexo masculino y 44 años, para los del femenino) y la mediana de ingreso personal total fue $10,400.00 ($12,000, para los del sexo masculino y $9,400, para los del femenino). Conclusión: Conocer la composición de la población es importante en la planificación de programas y servicios, particularmente, la de un grupo que no tiene la ciudadanía del país receptor. Reconocimientos: Ninguno.

P-089 Long non-coding RNA HOTAIRM1 destabilizes Estrogen Receptor alpha (ERα) to prevent proliferation of Breast Cancer derived cells

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Recent work shows that long non-coding RNAs (lncRNAs) play important roles in gene regulation and disease pathogenesis. Previous works showed that p53 plays a significant role in early differentiation of human Embryonic Stem cells (hESCs). Genome wide profiling of the p53-regulated transcriptome and chromatin interactions revealed several lncRNA targets of p53, including HOTAIRM1. This study sought to determine the effects of HOTAIRM1 depletion in cellular and disease progression. Three Breast Cancer cell lines were depleted of HOTAIRM1 using short-hairpin RNA (shRNA) in order to measure cell proliferation by cell count, colony formation and cell titer glo assays. Depletion of HOTAIRM1 by shRNA resulted in significant induction of cellular proliferation of both ER-positive MCF7 and ER-negative MDA-MB468 cells. Furthermore, depletion of HOTAIRM1 robustly increased the stability of ER protein at post-transcription level and an induction of ER-gene targets upon HOTAIRM1 knockdown. However, these functions were specific for MCF7 cells, since we did not observe any changes in gene expression in ER-negative MDA-MB468 cells suggesting that HOTAIRM1 interferes with ER-signaling. In addition, The Cancer Genome Atlas (TCGA) data revealed a positive correlation between HOTAIRM1 expression and survival of breast cancer patients and negatively correlates with FOXA1, a co-activator of ER-mediated transcription activation. These results suggest that HOTAIRM1 is a novel breast cancer specific tumor suppressor lncRNA, which destabilizes ERα transactivation complex in normal cells. Acknowledgements: This presentation is supported by the National Cancer Institute through the U54 CA096297/ CA096300: UPR/MDACC Partnership for Excellence in Cancer Research Training Program.

P-090 Prevalence of Complementary and Alternative Medicine (CAM) use among San Juan Overweight Adults Longitudinal Study (SOALS) participants

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Background: National complementary and alternative medicine (CAM) surveys have demonstrated a significant level of utilization (>40% among those of 40-69 years of age). CAM is used as supportive and preventive care for chronic diseases such as diabetes, hypertension and cancer. Objective: We aim to estimate the utilization of CAM among participants of the San Juan Overweight Adults Longitudinal Study (SOALS). Methods: We incorporated a modified version of the AARP and National Center for Complementary and Alternative Medicine Survey during the follow-up visit of the SOALS (predisposed or diabetics overweight/obese 40 to 65 years of age at baseline) to estimate prevalence of CAM use and whether CAM use is being discussed with the primary care provider (PCP). Descriptive statistics are presented. Results: From 745 participants who were part of the CAM questionnaire 59% reported use of some CAM (compared to US 40%) and most commonly used practices were: herbs/roots (i.e. ginger) 31%, supplements (i.e. vitamins) 27%, and home remedies (i.e. aloe) 22%. Only a 28% of the participants using CAM reported discussing CAM with their PCP. The most commonly reported reason for the use of CAM was for prevention of disease and wellness in an 86%. Conclusions: The prevalence of CAM use is higher than reported at national level, but most of the users do not discuss it with their PCP. These findings point to the need to provide education about the use of CAM among patients and healthcare providers, and to expand evidence-based research on complementary and integrative health approaches.

P-091 Disseminated Fusarium Infection in a five year old girl with Acute Lymphocytic Leukemia: Case Report

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Purpose: Disseminated fusariosis (DF) in children is a rare and serious fungal infection occurring especially in neutropenic immunosuppressed patients. Mortality is estimated between 50 and 70% in adult patients but disease course and therapeutic responses in children have not been widely studied. Case description: We present the case of a 5 year old female with Acute Lymphocytic Leukemia on induction therapy admitted with fever and neutropenia. She developed multiple purplish skin nodules while on brad spectrum antibiotic therapy. Clinical approach: On admission patient was started on vancomycin and imipenem. After onset of the skin lesions the antibiotic regimen was changed to imipenem, linezolid, amikacin, and caspofungin. Dermatology service was consulted to rule out a deep fungal infection and liposomal Amphotericin started as empiric therapy. A biopsy of one of the lesions was performed and the PAS stain showed large septated hyphae consistent with Fusarium spp. growth with clinical impression of deep fungal infection. Caspofungin was antibiotics were discontinued. Clinical findings: Patient remained on liposomal Amphotericin B for approximately 2 months with significant improvement of the skin lesions. Patient was then changed to IV Voriconazole for 14 weeks and discharged on oral voriconazole. Chemotherapy was restarted on week 15 of antifungal therapy. Conclusions: Disseminated fusariosis is a rare infection in the immunosuppressed patient that still leads to high morbidity and mortality. Prompt identification and adequate treatment is required. Physicians should be aware of possible disease sources leading to infection.

P-092 Unusual Presentation of Acute Lymphoblastic Leukemia Relapse in a pediatric patient: A case report

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Even though pediatric malignancies are rare, Acute Lymphoblastic Leukemia (ALL) is the most common cancer diagnosed in children representing approximately 25% of cancer diagnoses among children younger than 15 years (1). In this case report we discuss the case of a 15-year-old female patient with past medical history of high risk ALL on remission for 27 months who presents with a complaint of right breast swelling, induration, tenderness and nipple retraction of 2 weeks of evolution. Workup revealed normal CBC, normal bone marrow flow cytometry and cytogenetics, but a chest CT scan showed right breast enlargement and replacement with infiltrative tissue suggesting leukemia or granulocytic sarcoma and enlarged right axillary lymph nodes. A needle core biopsy of the infiltration was performed showing B cell lymphoblastic leukemia/lymphoma. Immunohistochemistry studies reinforced the diagnosis mentioned above with the presence of cells, such as Ki67, found nearly 100% of neoplastic cells. The patient started on 4-week re-induction chemotherapy. The case presents an opportunity to educate the primary physician on unusual presentation of ALL relapse in pediatric patients currently on remission and the importance of complete physical examination including breast exam on follow up visits.

P-093 Universal Lynch Syndrome Screening: Development of Educational Materials in Caribbean Hispanics

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Background: Colorectal cancer (CRC) is the leading cause of cancer death in Puerto Rico (PR). Lynch Syndrome (LS) is a hereditary CRC syndrome responsible for 5% of all CRC cases. The aim of this study was to develop educational materials (EM) on LS, which could be used as potential tools to educate and establish universal LS screening in PR within a multi-level educational program for patients and providers. Methods: EM was delivered by presentations using PowerPoint format. Content was based on literature review and was designed to measure change in knowledge, attitudes, and behavior regarding LS and genetic services via a pretest-posttest design. Results: 68 participants were recruited: 59 clinicians/ medical students (MS) (13-surgeons, 8-pathologists, 7-gastroenterologists, 12-gyn, 8 other specialties, 11-MS), and 9 LS-patients. A validated set of questions was used to measure knowledge, attitudes and behavior towards genetic services among these groups. Increase in knowledge was found among providers after the educational intervention. Statistically significant increased in knowledge included: CRC is the leading cause of cancer deaths in PR ($P<0.001$); the offspring of a LS-patient have 50% risk of inheriting LS ($P<0.001$); Tumor tissue samples obtained in surgery are used to diagnose LS ($P<0.001$). Preliminary conclusion: This targeted intervention increased knowledge of hereditary CRC among providers. Increasing referral to genetic counseling for LS requires multi-level educational strategies. Our research validated the content of the EM with regards to knowledge and will examine other areas such as barriers and facilitators of implementing universal tumor screening for LS.

P-094 Ischemic Infarct as Rare Initial Presentation of Coarctation of the Aorta in a Child

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Purpose: Ischemic infarct is a rare initial presentation of coarctation of the aorta in a pediatric patient requiring a high index of suspicion and detailed physical exam. Case Description: Here, we report a case of a 12 y/o female with history of migraine headaches and no other illnesses, who presented with acute onset loss of consciousness later associated to right hemiplegia and facial palsy. Clinical Approach: Head CT scan showed left MCA ischemic stroke, confirmed by Brain MRI as an Acute/early subacute Left MCA territory ischemic infarct with no corresponding hemorrhage and with evidence of Left hemispheric Luxury perfusion. Clinical Findings: Cardiology evaluation found a 3/6 systolic murmur at left upper and lower sternal border and absence of femoral pulses. Echocardiogram showed severe aortic coarctation which was confirmed by Chest CT. Surgery revealed a severe short segment aortic narrowing with juxta-ductal coarctation orifice of 1mm and an anomalous right subclavian artery at the far distal arch. Hypothesis: This case presents an ischemic infarct as initial presentation of coarctation of the aorta. This finding is extremely rare and few, if any cases, have been reported in children. The case underscores the importance of early diagnosis of coarctation of the aorta with emphasis on detailed physical exams at birth and on evaluations thereafter by medical professionals. How this congenital anomaly leads to an ischemic infarct is unknown. However, a "steal" phenomenon caused by other parts of the body "stealing" blood flow from the brain, has been proposed which warrants further research.

P-095 Synthesis of 2-amino nicotinamide derivatives and their use as antiproliferative compounds

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Background & Objectives: We recently developed EHop-016, which has been demonstrated to reduce metastatic cancer cell viability at concentrations of ≤5 μM. This compound adopts a "U-shaped bent" conformation when docked in the Rac1 binding site, where we can hypothesize that compounds with this conformation can better inhibit Rac1. We used 2-amino-nicotinamide as an intermediate for the preparation of derivatives. The objective is to synthesize and test the anti-proliferative activity of 2-amino-nicotinamide derivatives in MBA-MD-231 breast cancer cells, MCF-7 breast cancer cells and SH-SY5Y neuroblastoma cancer cells. Methods: We synthesized four series of derivatives, each alternating the position of the 3-amino-9-ethylcarbazole, the aliphatic chain, the amide and amine group. All compounds were tested for their growth inhibitory activity against MCF-7, MBA-MD-231, and SH-SY5Y cell lines via a Sulphorhodamine B (SRB)-based protocol assay. Results: Among 18 compounds synthesized and evaluated, 11 compounds showed moderate activity with GI50 in the range of 13.3-44.1 μM on the MCF-7 breast cancer cells,

17.6-39.4 μM on the MBA-MD-231 breast cancer cells and 19.0-32.4 μM for SH-SY5Y neuroblastoma cancer cells. Conclusions: From our results, we can conclude that EHop-016 compound is a good basis for the design of new compounds as anti-breast cancer and anti-neuroblastoma drugs. The results showed that derivatives of 2-amino-nicotinamide could be potentially developed as an anti-cancer therapy. Acknowledgements: Supported by NIH/RCMI Grant (G12RR035051) UPR-MSC (seed funds), American Association of Colleges of Pharmacy (AACP) 2012-2013 New Investigator Award (NIA), Susan G. Komen, Puerto Rico Science, Technology & Research Trust and the Graduate Program, UPR-School of Pharmacy.

P-096 Memory immune response in a genetic immunization with pA27LOPT DNA construct

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Background & Objectives: Attenuated vaccinia virus is the only treatment against a possible bioterror attack with smallpox. However, it is crucial to develop safer vaccination approaches suitable to the whole population as this vaccine is contraindicated for millions of immune compromised individuals. Previously, we showed our DNA vaccine formulation to augment both, the A27L vaccine-mediated production of IFN-γ, and the humoral response, with a TH1-biased immune profile. Our current interest is to determine if our vaccine cocktail induces a memory immune response. Methods: We analyzed the cellular-immune response by measuring the IFN-γ production of splenocytes by ELISPOT and the TH1 and TH2 cytokine profiles by ELISA, 14 days after the third immunization. Results: Our ELISPOT data show means of 29.4, 263.1, 205.0, 491.3 and 455.0 IFN-γ spot-forming cells corresponding to Naïve, pVAX1, pVAX1 + Imiquimod, pOPT and pOPT + Imiquimod, respectively. Cytokine analysis shows that IFN-γ increased after the vaccination with experimental group, as compared to control groups. Conclusion: The previously vaccine formulation in addition to induce the production of IFN-γ on mouse spleens, and increase of the humoral immune response is capable to stimulate a long term immune response in a virus-free DNA vaccine platform. Acknowledgements: NIH RCMI UPR-MSC 8G12MD007600, and the MBRS-RISE R25GM061838.

P-097 Efficacy of cognitive behavioral psychoeducational group therapy in patients with anxiety disorders

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Background & Objectives: Since Cognitive Behavior Therapy (CBT) was adjusted for a psychoeducative view (Kellet, 2007), it has been evident that psychoeducational group therapy has worked in reducing symptoms and recurrences for schizophrenia and bipolar disorders (Stefan et al., 1999); but is little evidence for anxiety disorders (Lahera, 2014). The aim of this study was evaluating the benefits of psychoeducational group therapies in patients with anxiety disorders. Methods: Six subjects were studied, 3 men and 3 women, mean age, 34.66 years. They received psychoeducational group interventions in occupational therapy for 8 weeks, for one and a half hour sessions. Self-report measures were given at the beginning and end of treatment, including: General Self-Efficacy Scale, Self-Regulation Scale, Connor-Davidson Resilience Scale (CD-RISC), and 3 subscales from GENCAT quality of life. Prior to treatment Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI-II), Anxiety Sensitivity Index (ASI), and Anxiety State & Anxiety Trait, were given to view levels of anxiety and depression. Results: The arithmetic mean of each scale showed positive results. Self-Regulation scale was the most improved, 14.1%; followed by the Personal Development scale, 11.2%; the Emotional Well Being Scale 11.1%; Self-Efficacy Scale, 4.6%; and Self Determination, 1.1%. The BAI showed moderate anxiety, 24.2; BDI-II moderate depression, 23.7; ASI severe anxiety sensitivity, 45.2; severe anxiety state and trait, respectively, 50.7 and 54.8. Discussion: This pilot study exhibits that psychoeducational group interventions in occupational therapy does benefit patients with anxiety. All scales showed positive results, this being the reason why further research is encouraged.

P-098 C-section rates and associated morbidities in infants born at < 32 weeks admitted to the Neonatal Intensive Care Unit

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Background & Objectives: Puerto Rico's preterm birth rate dipped but the island still has one of the highest incidences of premature babies in the world. In Latin American hospitals, increasing cesarean delivery rates from 10% to 20% was associated with greater preterm delivery and neonatal mortality. Our objective is to describe Cesarean section rates and associated maternal-infant morbidities in preterm deliveries. Methods: This is a case control observational study using the Vermont Oxford Network Database. All neonates less than 32 weeks of gestational age (GA) admitted to the Neonatal

Intensive Care Unit, University Pediatric Hospital during 2002 to 2014 were included. Results: A total of 2606 preterm deliveries were identified, 60.5% born by C-section and 39.5% by vaginal delivery. The mean GA was 29 weeks and mean birth weight 1190 grams. C-section rates were 54-67% during the study period. C-section was more common in multiple births pregnancies or in the presence of maternal hypertension ($p<0.01$). Preterms born by C-section were more likely to have lower 1-minute APGAR score, require bag and mask ventilation at birth, and develop respiratory distress syndrome ($p<0.05$). No difference in survival rates was observed. Conclusion: In this group of preterm deliveries less than 32 weeks of GA, the relationship between cesarean delivery and neonatal morbidity occurs due to the provision for emergency obstetrical care due to maternal complications and obstetrical considerations. In our study group delivered by C-section was not associated to decreased survival. Acknowledgements: None

P-099 Traumatic Central Cord Syndrome after Blunt Cervical Trauma: A Pediatric Case Report

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Traumatic central cord syndrome (CCS) is the most frequently encountered incomplete spinal cord injury (SCI). Patient presents weakness, greater in upper extremities than lower extremities, secondary to damage to the cervical spinal cord and anatomic distribution of the corticospinal tracts. CCS is seen commonly after a hyperextension mechanism in older patients with spondylotic changes. There are few literature reports regarding CCS in pediatric patients. We present an unusual case of traumatic CCS in a pediatric patient. 15 years old male patient, victim of bullying at school, received cervical blunt trauma with a plastic tube. Within 3 hours, patient developed generalized weakness, greater in upper extremities than lower extremities. Upon evaluation, patient was found with marked upper extremity weakness compared to lower extremity with Manual Muscle Test difference of 11 points. Imaging studies showed C4 through C7 central spinal cord contusive changes. After rehabilitation therapies patient gained 23 points in MMT at the day of discharge. Different etiologies of CCS have previously been described in pediatric patients. However, this is the first case that describes a bullying event with cervical blunt trauma and subsequent CCS. In this case, history and physical examination, along with imaging studies helped in the diagnosis, but it is important to be aware of the possibility of SCI without radiographic abnormalities, as it is common in pediatric population. CCS occurs rarely in pediatric patients without underlying pathology. Physicians must be aware of the symptoms and clinical presentation in order to provide treatment and start early rehabilitation program.

P-100 Weight Status, Sodium and Potassium Intake among Puerto Rican Adolescents as Potential Predictors of Hypertension Risk

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High blood pressure can increase the risk of heart disease, heart attack, stroke, kidney damage, vision loss and even death. High sodium and low potassium intake has been associated with higher blood pressure among children and adolescents. Excess weight has also been linked to increased heart disease risk. The aim of this study was to assess the central adiposity, blood pressure status, and average dietary sodium and potassium intakes of Puerto Rican adolescents. This cross-sectional study was conducted on a non-representative convenience sample of Puerto Rican high school students at the University High School in Río Piedras, Puerto Rico. Of the 71 participants ages 15-19 years, 68% were female. Each participant completed a socio-demographic, anthropometric (height, weight, waist and hip circumferences), clinical (systolic and diastolic blood pressure), and dietary analysis (24-hour recall and Food Frequency Questionnaire). 70% of boys and 85% of girls had healthy BMIs. Mean blood pressure for both males and females was within a healthy range. Sodium intake was egregious: females consumed 165% of the Estimated Average Requirement (EAR) while males consumed 226% of the EAR. Conversely, female and male intake of potassium was 49% and 60% lower, respectively, than the established Adequate Intake (AI) level. Continuation of this dietary pattern could increase risk of high blood pressure and heart disease for these adolescents in the future. This research was not supported by any grants or other funding sources.

P-101 Incidence of Opioid/Benzodiazepines-Induced Withdrawal Syndrome in Critically Ill Children

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Pediatric Patients in the ICU typically receive prolonged sedation and analgesia as pain management to facilitate intensive care therapies. Those patients are at risk to develop iatrogenic withdrawal syndrome when medications are suddenly stop or weaned too quickly. This study was designed to investigate the incidence of withdrawal syndrome in critically ill children that were admitted to the Pediatric Intensive Care Unit at the University Pediatric Hospital from June 2015 to January 2016. We also assessed validity and generalizability of the Withdrawal Assessment tool (WAT-1) in children exposed to opioids and benzodiazepines for 3 days or more. Data was collected using patient medical records and the Withdrawal Assessment Tool Version 1 (WAT-1) to assess for signs of withdrawal. Patients with cerebral palsy, chronic use of opioids or benzodiazepines, oncology patients and with status epilepticus were excluded. From 400 newly admissions to the ICU, 21 patients met the inclusion criteria. Preliminary results demonstrated that 52% patients developed opioids/benzodiazepines induced-withdrawal. We also see that young and male patients were more prone to develop withdrawal signs with a 52% vs 48%. A prolonged stay in PICU and patients with a sustained amount of time of use of mechanical ventilation support are at a high risk to develop this syndrome. This is an ongoing study that will continuing recruiting patients until June 2016.

P-102 Ultrasound and Functional Assessment in a Charcot Marie Tooth Patient: A Case Report

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Purpose: Charcot Marie Tooth (CMT) disease is the most common inherited peripheral neuropathy. Limited information on sonography in neuromuscular conditions is available and further less in hispanic patients. We evaluated physiologic and non-physiologic factors that affect ambulation in this CMT patient. Case Description: A 14 y/o male patient diagnosed with CMT (CMT4F-periaxin gene) was evaluated to asses physiologic and non-physiologic factors that affect ambulation. To evaluate physiological factors, three ultrasound (US) measurements of the Common Peroneal Nerve (CPN) cross-sectional area (CSA) and Anterior Tibialis muscle (ATM) depth in axial plain measurements were performed. For non-physiologic factors, a 10 meter walk test and 12 stair climb tests (SCT) was performed using ankle foot orthosis (W-AFO) and without ankle foot orthosis (WO-AFO) was performed to evaluate assistive device us in ambulation. A control subject (brother) without mutation with same gender, similar age, height and BMI was used for comparison. Clinical Approach: US evaluation showed significant increase in CPN CSA and decrease in ATM depth in axial plane measurement with disorganized, heterogeneous fibers and fatty infiltration consistent with muscle atrophy. Ambulation was faster with use of AFO at Fast Pace but slower at Self Selected Pace. Less time was required to complete 12 STC test W-AFO. Hypothesis: We present the sonographic findings in nerves and muscles of a patient with CMT compared with a normal subject and show the benefit using a assistive equipment in ambulation. This protocol can be used in the future for testing a larger population with similar pathology.

P-103 Changes in the Pulmonary Function Test in Patients of the Tobacco Cessation Clinic in a Dental Setting: 2004-2008

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Background and Objectives: Cigarette smoking is one of the most important risk factor for many debilitating diseases worldwide and the leading cause of mortality that is completely preventable. Although extended information exists in the literature about the pulmonary function in patients with respiratory diseases related to smoking, little is known about the pulmonary function in current cigarette smokers who are seeking professional help for smoking cessation without pulmonary symptoms. Methods: This study describes the pulmonary function using spirometric value parameters of cigarette smokers, in a sample of subjects (N=100) that attended a multidisciplinary program of smoking cessation and oral cancer detection at the School of Dental Medicine, University of Puerto Rico. Results: Evaluation of the data showed that 15% of the patients had airflow limitations, assessed by FEV1/FVC < 0.70. Using the Pearson correlation, a statistical significant inverse correlation was found between increase years of smoking and a decrease FEV1/FVC ratio ($r = -.244$, $p = .015$). There was also a statistical inverse correlation between increase actual smoker age and a decrease FEV1/FVC ratio ($r = -.249$, $p = .013$). Conclusions: Since serious clinical respiratory symptoms are usually subclinical until severe pulmonary disease is present, spirometry is a useful tool to screen for pulmonary function abnormalities in smoking cessation clinics. Lung function values should be used to

provide patients pulmonary health relevant information and serve as an adjunct motivator for cessation counseling and early referrals for pulmonary specialists before lung function is irreversibly compromised. Acknowledgement: None

P-104 Renal Medullary Carcinoma: A case report of a rare malignancy specifically affecting patients with a so-called benign condition

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Purpose: Renal Medullary Carcinoma (RMC) is a highly aggressive and rare malignancy found almost exclusively in young patients with sickle cell trait (SCT). Metastatic disease is commonly present at diagnosis which is very often delayed. There is very limited experience treating disseminated disease and the prognosis is dismal. Case Description: We report the case of a young 9-year-old boy with SCT, who presented to his pediatrician with abdominal pain, nausea and vomiting associated with cough spells, dysphagia, and weight loss. After 1 month of worsening symptoms he presented to us and he was underweight, pale, and in mild respiratory distress. Cervical lymphadenopathy was evident. Abdomen was diffusely tender. Clinical approach: A chest CT scan showed bilateral pulmonary parenchymal nodules as well as bilateral pleural effusions, right supraclavicular and left cervical necrotic nodules. An abdominopelvic CT scan revealed a left kidney lesion with mild hydronephrosis. Biopsy of left cervical lymph node revealed metastatic renal medullary carcinoma. Patient was started on combination chemotherapy with Paclitaxel, Cisplatin, and Gemcitabine. Clinical findings: In spite of having advanced disease, our patient has achieved an excellent response with a progression-free survival of 6 months. Almost complete resolution of pulmonary metastases is evident on follow up images and left kidney shows only a residual tumor. Hypothesis: Although SCT is thought to be a "benign" condition RMC is one devastating complication associated with it. Due to high prevalence of SCT in PR, the medical community should have a high index of suspicion when dealing with these patients. Acknowledgements: Pathology Department, Hematology/ Oncology Department, University of Puerto Rico School of Medicine.

P-105 Traumatic esophageal perforation: 13-year experience in Puerto Rico Trauma Center

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Introduction: Esophageal injury is a common yet life threatening event with an overall reported incidence of 1.49%. This study aims to describe the health outcomes in patients with traumatic esophageal perforations. Methods: An IRB-approved case-series of patients diagnosed with esophageal trauma was conducted in the Puerto Rico Trauma Center from 2000-2013 to describe their outcomes. Patients were evaluated in term of etiology of perforation, neck zone injury and esophageal level. Sample description was done using descriptive statistics. Results: Nineteen patients were treated for esophageal injuries in Puerto Rico Trauma Center between 2000 and 2013. Out of the 19 patients in the study, 18 were male and only one female. Of these patients, 1 of them suffered blunt esophageal trauma and 18 patients suffered from penetrating trauma to the esophagus. The most common mechanism of trauma was gunshot wound, following stab wounds and the least common were automobile accidents, car crash with injured motorcyclist and pedestrian injured by traffic. Of these patients, 4 of them presented with pneumohemothorax, 7 presented with pleural effusion and 3 had septic shock. A total of 4 patients underwent exploratory thoracotomy and exploratory laparotomy. All the patients but one did not have a delay in their esophageal perforation diagnosis. Only one in-hospital mortality occurred. Conclusion: Early diagnosis and prompt surgical treatment completed in the first twenty-four hours is fundamental in order to achieve a good outcome after esophageal perforation. Acknowledgements: No any sources of funding and no conflicts of interest to disclose.

P-106 Pediatric Burns in Puerto Rico: An Overview

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Burns are a serious health problem associated with high morbidity and mortality, especially in children. This retrospective study evaluated the etiology and outcome of patients admitted with burns at the only tertiary pediatric hospital in Puerto Rico from January 2010 to December 2013. Data was collected from Pediatric Surgery Burns Statistics Logbook. Data were expressed as percentiles and means as

appropriate. 598 burn patients (70% admitted to the outpatient clinics, 30% hospitalized) were evaluated. Patients spent a mean LOS = 5.9. Most affected age was children under 4 years and predominantly males (60%). 87% were second-degree burns, 13% third degree; by extension 1-10% -77%, 10-20% = 17.6%, over 20% = 6% (severe cases admitted to PICU of which 25 patients required mechanical ventilator support). Causal agents were: scalds = 58% = 21% contact, fire 13%, chemical = 5%, power = 3%. Acute complications (8.69%): pneumonia, wound infection and bacteremia, whereas chronic complications (5.2%) were: hypergranulation, hypertrophy and contracture. There was no mortality associated with burns during study period. We intend to expand the study period to report the epidemiology and etiology of burns in children in Puerto Rico.

P-107 The Autophagy and Highwire Genes Regulate the Temperature-Dependence of Synaptic Growth at the Drosophila NMJ

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Background and Objectives: The global mean temperature has risen drastically and can pose a threat to many organism, mainly those that cannot thermo regulate their own body temperature. Little is known about the effects that temperature can have on the nervous system. Previous work in Drosophila showed that there is an increase in synaptic growth with high temperature. Nonetheless, the molecular mechanisms that control synaptic growth due to temperature changes remain to be elucidated. Methods: In this study, we reared animals from 15 to 30°C and used genetic manipulations to identify the molecular mechanisms underlying temperature-dependent synaptic growth. Results: We found a linear increase in synaptic growth when we raised the animals at different temperatures. We look upon, highwire (Hiw), an E3 ubiquitin ligase and a known inhibitor of the NMJ growth. Interestingly, loss of hiw increased synaptic growth equally at every temperature. These findings led us investigate Hiw regulators. Autophagy (Atg) is a degradation process sensitive to environmental cues that could degrade Hiw protein in neurons. Interestingly we showed that atg loss of function animals exhibit a marked decrease in synaptic growth at all temperatures. Conclusions: Our results suggest that Atg and Hiw are essential for the temperature-dependence of synaptic growth. We propose a model in which autophagy controls the level of synaptic growth through different levels of activation and highwire degradation. We are now focusing our efforts in investigating the consequences of temperature on the electrophysiological properties of the synapse.

P-108 Refractory Periodontitis in a Systemically Healthy Adult: A Case Report

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Purpose Refractory periodontitis is characterized by progressive attachment loss despite adequate periodontal treatment and patient efforts. Previous literature signals incomplete removal of microbial deposits or a compromised host response as possible causative factors for the persistent periodontal disease. This case illustrates the need of more comprehensive and integrated evaluation of periodontal patients including collaboration with other health care professionals which can help to better assess individual patient needs as well as long term prognosis of overall oral health. Case This case report involves a 56 year old female patient referred to an emergency evaluation at the UPR-School of dental medicine general dental clinic with complaints of a mobile and painful molar. An intraoral examination showed a systemically healthy patient with Moderate to Severe Generalized Chronic Periodontitis and a localized periodontal abscess on #30. Clinical Patient records showed previous periodontal treatment including Root Scaling & Planning on all 4 quadrants and Surgical Debridement of 3 quadrants; no contributory personal habits, and no prescribed medication nor medical conditions. Patient exhibited excellent oral hygiene habits and adequate BMI. Due to no obvious local causative factors a complete blood workup was performed to rule out systemic conditions. Hypothesis In patients with no PD risk factor, does the trauma occlusion influence the progression of the diseases and the treatment prognosis? Acknowledgments: Special acknowledgement to the Office of the Assistant Dean of Research at UPR School of Dental Medicine (NIH-1S21MD001830)

P-109 Hemoglobinopatías detectadas en el Cernimiento Neonatal de Puerto Rico durante los años 1991 al 2012

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Introducción/Objetivos: Las hemoglobinopatías son un grupo de desórdenes hereditarios, asociados con la producción de hemoglobinas anormales. Este estudio consistió de describir y comparar las tasas de incidencia de las hemoglobinopatías en dos periodos de tiempo, además de su distribución geográfica en las Regiones de Salud de PR. Método: Se realizó un análisis retrospectivo de los recién nacidos en PR durante los años del 1991 al 2012 y de los casos positivos para hemoglobinopatías detectados por el Programa de Cernimiento Neonatal

(PCN). Se estimó la razón (Riesgo Relativo) de las tasas de incidencias para realizar las comparaciones entre los dos periodos de tiempo y entre las Regiones de Salud. Resultados: Se detectaron 265 casos de hemoglobinopatías con una tasas de incidencia de 22.14. Las tasas de incidencias en el período de tiempo 1(1991-2001) resultó en 21.94 y para el período 2 (2002-2012) en 22.23. Para las diferentes regiones de salud, los resultados fueron los siguientes: Arecibo (6.17), Bayamón (17.35), Caguas (19.59), Fajardo (19.63), Mayagüez (15.35), Metro (47.78) y Ponce (13.05). Conclusión: Estos resultados demuestran que las hemoglobinopatías son condiciones de importancia en la población puertorriqueña. Aunque la incidencia de hemoglobinopatías permaneció constante a través de los dos períodos de tiempo estudiados, la misma varía significativamente por región de salud siendo la región Metro la que presenta la incidencia más alta y sugiriendo que es en esta área donde deben mejorarse y expandirse los servicios de salud. Agradecimientos: PCN de PR y Departamento de Salud de PR.

P-110 Adenomyomatosis of the Gallbladder, an Uncommon Cholecystopathy

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Purpose: Adenomyomatosis of the gallbladder (adenomyomas or adenomyomatous hyperplasia) is a hyperplastic cholecystosis. It consists of a benign thickening of the gallbladder wall, characterized by hypertrophy of the muscular wall and cystically dilated glands. This lesion is a relatively uncommon tumor found in 2% - 5% of all cholecystectomies and is usually diagnosed as an incidental finding on ultrasonography. Case description: A 48 year old woman presented with dull right upper quadrant abdominal pain of a couple of years duration, which suddenly worsened in intensity and became more frequent. Clinical approach: An abdominal sonogram was performed and a preoperative diagnosis of cholecystitis was done. The patient was treated with a laparoscopic cholecystectomy. The specimen was sent to pathology where the diagnosis of adenomyomatosis was done. Clinical Findings: Grossly, there was evident thickening of the gallbladder wall, with histological formation of epithelial mucosal cysts through the muscular layer. Carcinomatois was entertained by the pathologist, due to the infiltrative pattern of the epithelial glands. However, the benign appearance of the cells surrounding the cysts are more consistent with Rokitansky-Aschoff sinuses seen in adenomyomatosis. Hypothesis: After consideration of carcinomatosis, gallbladder adenomyomatosis was diagnosed on histological findings. Adenomyomatosis is an unusual lesion which is difficult to diagnose preoperatively but is easily treatable with surgical resection of the gallbladder. This is a benign lesion; however it is imperative to make a correct histopathological diagnosis due to its differential diagnosis with carcinomas.

P-111 RGD Domain of the P2Y2 Receptor Modulate its Signaling and Functional Behavior

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Background & Objectives: The P2Y2 nucleotide receptor (P2Y2R) has become an apparent key player in regulating many cellular responses including apoptosis, cell survival and inflammation. In response to injury, the P2Y2R is thought to have both a protective and detrimental effects in the CNS by activating glial cells that secret cytokines, chemokines, and growth factors at the site of the injury. P2Y2Rs have an arginine-glycine-aspartate (RGD) motif in the first extracellular loop that promotes its binding to alphav-beta3 integrin that can directly modulate transcriptional events and cell proliferation. In this study, we investigated the effects of an RGD to RGE mutation (arginine-glycine-glutamate) in the signaling and functional behavior of the P2Y2R. Method: WT Human 1321N1 astrocytoma cells are P2 receptors devoid. To express human HA-P2Y2R in these cells we used the retroviral vector pLXSN as described previously by Erb et al. 1995. Human 1321N1 astrocytic cells were grown in collagen-coated Flex Plates and subjected to mechanical strain by means of a 94A Cell Injury Controller. Results: P2Y2-RGE mutants show decreased agonist potency in eliciting PLC-dependent calcium mobilization and ERK1/2 activation. Mutation of the RGD motif of the receptor did not affect the receptor antiapoptotic action. Conclusions: Our results suggest that an RGD to RGE mutation in will exclude the P2Y2R from caveolae and it will impair its ability to translocate to this microdomain and thus impair its downstream signaling machinery. Acknowledgements: NAM is supported by the NIH-NIGMS-MBRS-RISE Program Grant R25GM061838 at the UPR-MSC.

P-112 Perinatally Acquiered Chikungunya Infection: The Puerto Rico Experience

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Background/ Objectives: Chikungunya fever is a mosquito borne disease. Most infections during pregnancy will not result in the virus being transmitted to the fetus. But when infected during the intrapartum period, vertical transmission rate is as high as 49%. The 2014 outbreak in PR, prompted to characterize clinical manifestations of intrauterine exposed fetuses and develop guidelines for their neonatal management. Methods: This is a retrospective medical record review of infants born to mothers with chikungunya-like symptoms. We included infants admitted to the University Pediatric, UPR

Carolina and San Juan City, Neonatal Intensive Care Units from January 2014. We collected perinatal data, neonatal symptoms and laboratory data during the first 10 days of life. Results: Ten newborns where admitted from mothers with chikungunya-like symptoms. In 70% the mothers had symptoms within 5 days from delivery. Neonatal symptoms included irritability and eczema (71%), fever, general malaise, apneas and tachypnea (57%); poor sucking, cyanosis, and peripheral edema (43%). Laboratory data revealed prolonged PTT, hypoalbuminemia, elevated AST (57%); leukopenia, thrombocytopenia (43%); leukocytosis, elevated ALT, prolonged PT (14%). Three patients were admitted from mothers with symptoms more than 5 days from delivery. These patients presented congenital anomalies like hydrocephaly and brain infarct. Of those mothers with symptoms intrapartum, 85% of the infants became symptomatic, more than previously reported in the literature. Conclusion: The recent emergence of chikungunya has added a new febrile viral disease with a high rate of vertical transmission. Careful evaluation of the first reported cases, will help us develop guidelines for future outbreaks.

P-113 Biological Activity of Outer Membrane Vesicles from Clinical Isolates of Escherichia coli

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All gram-negative bacteria secrete outer membrane vesicles (OMV) that have several functions, among them the transportation of bacterial virulence and survival factors. It has been found by other groups that certain OMV promote aberrant growth in mammalian cells upon contact. OMV provide an insoluble secretion pathway for gram-negative bacteria and are responsible for the release of outer membrane and periplasm content out of the cell. The main objective of this investigation is to compare the composition and biological activity of OMV isolated from diverse clinical strains of E. coli. We will measure morphological effects of OMV from selected clinical isolates of E. coli on HeLa cells. Furthermore, we will also measure the lipid composition of OMV for the different strains and mutants by GC/MS. As preliminary results, we observed a significant difference in the lipid composition of the IHE3034 (pks+ strain) OMV and the IHE3034-ΔclbP OMV. The clbP gene is presumed to be involved in the biosynthesis of colibactin. We observed that the deletion of clbP peptidase causes a decrease in the percentage of 12:0 fatty acids and an increase of 16:0 fatty acids in OMV, but not in the cellular membrane. Also, we observe a megalocytosis phenotype in HeLa cells treated with OMV isolated from IHE3034 in comparison with cells without treatment. These results begin to establish a correlation between the presence of colibactin genes and events at the bacterial cell surface.

P-114 Rosacea-Like Leukemia Cutis: A Case Report

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Purpose: Leukemia cutis (LC) describes the infiltration and dissemination of neoplastic leukemic cells into the epidermis, dermis, or the subcutis, resulting in clinically identifiable cutaneous lesions. In most cases, the presence of systemic disease precedes the evolution of skin lesions. Wide range of histopathological findings may be encountered depending on the type of leukemia. Case description: We described a case of a 57 year-old male patient who presented with erythematous papules and pustules on the face with overlying telangiectasia of 2 months duration. Clinical Approach: Patient visited the emergency room due to experiencing difficulty swallowing. Blood test showed a white blood cell count of 676,000 with a 26% of blasts for which was admitted. Dermatology service evaluated the patient and performed a skin biopsy. Clinical findings: A skin biopsy reported a dense nodular lymphocytic infiltrate in the deep dermis with an associated periadnexal and perivascular distribution. Bone marrow flow cytometry and immunohistochemical studies and skin immunohistochemical studies were consistent with T-cell prolymphocytic leukemia (T-PLL). Hypothesis: Is a rare and highly aggressive lymphoproliferative disorder that accounts for less than 2% of small lymphocytic leukemia in adults over the age of 30. Clinically, it can present as dark red, brown, erythematous papules, nodules, or hemorrhagic ulcers usually involving the legs, arms, head, neck, and trunk, which may mimic other common inflammatory processes such as rosacea, acne vulgaris or cutaneous lupus erythematous. For this reason, identification of leukemia cutis may present a diagnostic challenge and may delay management in these patients.

P-115 ¿Un Puerto Rico sin jóvenes?: envejecimiento poblacional y desafíos para la salud en general

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Introducción y objetivos: Desde una perspectiva demográfica, se considera una población envejecida aquella cuya composición poblacional de 65+ años sea de 10% o más. La población de Puerto Rico alcanzó esta cifra hace más de dos décadas, y desde entonces, ha ido en aumento. El objetivo principal del presente estudio fue establecer una línea de vida del envejecimiento poblacional en la Isla. Se analiza, además, la dinámica demográfica responsable de los cambios observados y los posibles retos que esto representa para el país. Métodos: Se utilizaron diversos indicadores de índole demográfica y estadística descriptiva para establecer una línea de vida del evento e identificar las variables protagonistas de este cambio. Resultados: Previo a 1960, la proporción de población de edad mayor fluctuaba entre 1-3%. Después del 1960, se observa un aumento continuo y cada vez mayor, siendo la natalidad y la emigración principales variables. Desde el año 2000, se observa un descenso marcado en nacimientos y un aumento considerable en el número de emigrantes, factores causantes de la aceleración del envejecimiento poblacional. Conclusiones: En un futuro inmediato, no se prevé un aumento en los nacimientos ni que disminuya la emigración. Mientras la expectativa de vida continúa en aumento, este envejecimiento poblacional presenta retos para el país en general, en especial para los sectores económicos, sociales y de salud. Esto amerita atención urgente y el desarrollo de políticas inclusivas que fomenten y satisfagan el bienestar de la población de edad mayor y a su vez, de la población general del país.

P-116 Rare ADCY9 Mutations in Puerto Rican Children with Non-syndromic Orofacial Clefts

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Objectives: Adenylate cyclase 9 (ADCY9), recently identified in China as a new susceptibility locus associated with non-syndromic cleft lip with or without cleft palate (nsCL/P). About 18 babies/10,000 (live births) were born in 2011 with nsCL/P in Puerto Rico (PR). The study aim was to identify ADCY9 functional variant mutations in Puerto Ricans with nsCL/P. Methods: Children with nsCL/P (n=177) ages 0-14 years were recruited as cases. Genetic variants were identified using probands' DNA samples by Sanger Sequencing ADCY9. The distribution of functional variant mutations seen in case families was compared to controls families. Discrimination of functional variants was performed. Results: ADCY9 functional variants were identified: seven missense and one splice site mutation. Three mutations were found in exon 2, two in exon 7, and one in exons 4, 9 and 11. Missense/probably damaging mutations: rs52791170/K564Q (MAF= 3.6% / 1.9% controls) and rs372048350/A811V (MAF= 0.29% / 0.01% controls) was reported once and not identified in PR. The rs61731442/T236A (MAF=0.29%) missense mutation predicted as deleterious has not been found in PR, and 3 times (MAF=0.48%) in European Americans (EA). The rs113187435/S661G (MAF=0.29% / 0.74% controls) missense mutation was predicted as benign/tolerated and has not been found in PR and EA. One missense/benign mutation was found in 66 cases (MAF=23% / 28% controls). Conclusion: The identification of rare mutations in populations such as Puerto Ricans may contribute to the list of variants in ADCY9 related to nsCL/P.

P-117 Damage and Enzymatic Activity of Nuclear DNA and Apurinic/Apyrimidinic Endonuclease 1 from Rhesus Macaques during aging

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Aging increases the levels of oxidative stress in the liver and may contribute to age-associated mitochondrial dysfunction and liver pathology. Impairment of mitochondrial function in the aged liver further elevates oxidative damage to macromolecules. We have previously shown that middle-aged and old rhesus (Macaca mulatta) monkeys presenting increased age-associated liver steatosis also show an age-dependent increase in liver mitochondrial DNA (mtDNA) damage, mtDNA depletion and increased oxidative stress compared to young monkeys. However, whether damage to the nuclear DNA (nDNA) increases with age in rhesus monkeys remains unknown. We measured levels of nDNA damage in liver and PBMCs obtained from young, middle-aged and old rhesus monkeys using quantitative PCR. Our results show no age-associated increases in the levels of nDNA damage in rhesus liver and PBMCs. We also assessed the activity of the Base Excision Repair (BER) endonuclease APE1 in liver and skeletal muscle protein extracts from young, middle-aged and old rhesus monkeys using a fluorometric oligonucleotide assay. Our results show no significant differences in APE1 activity in liver with increasing age but in skeletal muscle our results show significant differences in APE1 activity. Collectively our results suggest that the aged liver is more resistant to nDNA

damage than mtDNA damage and thus highlights the role of mitochondria in age-associated liver pathology. Targeting mtDNA damage may be a valuable strategy for modifying age-associated liver disease. Supported by P40RR003640, G12RR03051 and G12MD007600.

P-118 Idiopathic Restrictive Cardiomyopathy as a rare cause of heart failure in a young woman: Case Report

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Purpose: Out of the primary cardiomyopathies, restrictive cardiomyopathy (RCM) is by far the least common and related to a very poor prognosis. The condition is predominant in the elderly population but may affect any age thereby requiring early identification and intervention.

Case description: We present the case of a 34 year old woman without previous systemic illness who presented with a 6 month history of progressive fatigue, palpitations, and worsening dyspnea on exertion. Previous catheterization had shown findings suggestive of hypertrophic non-obstructive cardiomyopathy along with a restrictive hemodynamic pattern. Clinical approach: Cardiac MRI was performed to rule-out thrombus formation since patient did not tolerate transesophageal echocardiography. MRI revealed severe biatrial enlargement without pericardial, myocardial, valvular or intracavitary lesions. Left ventricular cavity and wall size was normal with generally preserved systolic left ventricular function and abnormal diastolic function. Left ventricular subendocardial enhancement, transmural left gadolinium enhancement, or patchy enhancement were not seen. Clinical findings: Findings suggested a restrictive rather than constrictive filling pattern as correlated with patient's clinical presentation and high initial pro-BNP value of 5,813 pg/mL. The patient's electrocardiographic tracing was indicative of atrial flutter for which diltiazem was initiated prior to cardioversion. Normal sinus rhythm was established and patient was discharged home. Conclusions: Characteristics seen in Cardiac MRI help differentiate idiopathic from secondary RCM such as amyloidosis or sarcoidosis. Early diagnosis is essential in providing adequate therapeutic options that reduce pulmonary and systemic congestion. Our patient was able to be discharged on optimal heart failure therapy with increased functionality.

P-119 Potential Antimalarial Drugs Specificity Determination Using in vitro Inhibition Assay

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Malaria is a mosquito-borne disease caused by Plasmodium parasites and it is presently considered the most devastating parasitic disease worldwide. The development of multidrug resistance parasites at a rate faster than the discovery of new antimalarials represents a real threat for malaria control. Glutathione S-transferase (GST) is known to be essential for survival of P. berghei, representing a good target for the development of new antimalarial. Potential GST inhibitors with antimalarial activity were identified recently in our laboratory through structure-based in silico analyses in combination with drug sensitivity tests. The aim of this study is to determine the specificity of the potential antimalarial compounds by in vitro inhibition assays using a recombinant version of this enzyme. RNA from P. berghei was extracted and retro-transcribed. Subsequently, the pbgst gene was amplified, digested and ligated into the pQE-60 vector. The construct was cloned in E. coli DH5-α and expressed in a eukaryotic expression system. Future works includes purifying the protein using Immobilized Metal Ion Affinity Chromatography and to determine if the mechanism of action of these compounds has to do with GST inhibition. This work was supported by: Puerto Rico Science, Technology & Research Trust, NIGMS/MBRS award GM08224, the RCMI award 2G12-RR003051 and 8G12-MD007600, MBRS-RISE R25GM061838.

P-120 Identification of genetic variants in the CYP2C9 and VKORC1 loci in warfarin-treated high–risk Puerto Rican patients

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Warfarin is an anticoagulant drug that is involved in potentially life-threatening adverse effects. Genetic polymorphisms in VKORC1 and CYP2C9 have been found to be associated with changes in warfarin's requirements. Hispanics, including Puerto Ricans, are not frequently included in Pharmacogenetics studies. We recruited Puerto Rican patients treated with warfarin from the Veteran's Affairs Caribbean Health Care System. The stabilization doses were collected and the patients were classified according to their warfarin's requirements as sensitive (<4mg/day), controls (4-6mg/day), and resistant (>6mg/day). DNA was extracted from whole blood samples and the genes CYP2C9 and VKORC1 were sequenced using Next Generation Sequencing technology. Genetic novel variants were identified by filtering-out those variants already reported in genomic databases. A case-control association analysis was used to identify genetic variants associated with either sensitive or resistant phenotypes. Two genetic variants in the CYP2C9 resulted to be associated with the sensitive phenotype. The genetic variant that showed stronger association (p-value=0.004; OR= 5.62) with

sensitivity to warfarin is apparently responsible of a reduction of approximately 2mg/day from the standard of care dose (5mg/day). Since the Native-American component of the Puerto Rican population remains unknown, it is relevant to perform DNA sequencing with the aim to find genetic variants that influence the variability in warfarin requirements and therefore deserves further study. The long-term goal of our study is to develop a genetic-driven dosing algorithm that includes known and novel relevant genetic variants in the Puerto Rican population. Approved by University of Puerto Rico Medical Sciences Campus, IRB protocol A4070109. Supported by grant SC1 HL123911 from the NHLBI, by RCMI award number 8G12 MD 007600 and MBRS-RISE at the University of Puerto Rico R25GM061838.

P-121 Patient-Derived Xenograft Models: A Powerful Tool in Breast Cancer Translational Research

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Background & Objectives: In the US, breast cancer is estimated to be the most commonly occurring type of cancer and the 2nd most deadly for women and overall in 2016. In Puerto Rico, it was the most commonly occurring type of cancer and the most deadly for women in 2006-2010. Therefore, it is an important public health concern. Patient-derived xenograft (PDX) models mainly consist of the implantation of fragments of tumors derived from primary surgical resection into immunocompromised mice. The importance of using PDX models of breast cancer is that they recapitulate its tumor biology and treatment response. The objectives of this study are 1) to present an update on PDX models of breast cancer and 2) to discuss its challenges and future directions. The significance of this study is the increase in the understanding of PDX models of breast cancer as a key component in the translational research of this common and deadly disease. Methods: A systematic review of the literature was conducted using US National Center for Biotechnology Information's PubMed. Results: Twenty articles were identified and reviewed for inclusion. PDX models recapitulate the diversity, histopathology, tumor behavior, and the metastatic properties of breast cancer. However, challenges include tissue processing, engraftment strategy and failure, and delay between engraftment time in mice and treatment schedules for patients, among others. Conclusion: PDX models of breast cancer are key in predicting clinical outcomes and are widely used for preclinical drug studies, biomarker analysis, cancer biology studies, and precision medicine strategies, among others.

P-122 Serum Adiponectin Levels in Puerto Rican Children with Type-I Diabetes and Obesity

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Adiponectin has been proposed as a cardioprotective adipokine with anti-inflammatory and anti-atherogenic properties and potential early surrogate marker of cardiovascular disease(CVD). Data regarding adiponectin levels in Hispanic children with type 1 diabetes(DM1) or obesity is limited. We compare adiponectin levels among Hispanic children with DM1, overweight/obese and DM1/overweight/obese and healthy controls and determine whether there is an association between blood pressure or carotid intima media thickness (cIMT). A pilot, cross-sectional study of Hispanic children from University Pediatric Hospital Endocrinology Clinic and general population was performed in 2008-2009. Overweight/obese defined as body mass index(BMI)>85thpercentile. Adiponectin measured by enzyme-linked immunoassay. Carotid ultrasound used to evaluate cIMT. Median (interquartile range), frequencies/percentages, Kruskal-Wallis/Dunn's post-hoc test, Chi-square/Fisher's exact test were used. 65 children, age 13yrs(11-15yrs), 45%females were studied. 57% had diabetes and 40% overweight/obese. Adiponectin levels were similar among healthy(n=15), DM1(n=24), obese/overweight(n=13) and DM1/obese/overweight(n=13) (P>0.05). No differences in age or sex between the groups. Adiponectin levels did not vary in children with DM1 duration of 1.5-3yrs, 3-5 yrs or >5yrs. Blood pressures and cIMT were similar among the groups. Our results do not support the use of adiponectin as an early surrogate marker of CVD in this sample of Hispanic children with DM1 or obesity.

P-123 Expression Patterns of Antioxidant Genes During Development of Plasmodium Berghei with Altered Glutathione Levels

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Plasmodium infections cause a significant increase in oxidative stress in the vertebrate and mosquito hosts. To minimize the oxidative damage, the parasites rely on functional thioredoxin (Trx) and glutathione (GSH) redox systems as their primary lines of defense. In Plasmodium, the γ-glutamylcysteine synthetase (GGCS) is the rate-limiting enzyme in GSH biosynthesis, while glutathione reductase (GR) maintains GSH in its reduced and active form. Plasmodium berghei mutants lacking pbggcs or pbgr genes, previously developed in our laboratory, display altered GSH levels and growth impairment during blood stage development. Strikingly, both,

pbggcs and pbgr genes are essential for parasite development in the mosquito. Mutant parasites exhibit developmental arrest at late oocyst stages leading to the interruption of the life cycle. In this study we demonstrate that the expression of specific antioxidant genes is significantly altered in mutant parasites. We used quantitative real time RT-PCR (RT-qPCR) to determine the expression of selected redox and antioxidant genes in mutant parasites during development in red blood cells and in the mosquito. The resulting transcription profiles revealed significant variations in target gene expression during parasite development in blood and mosquito stages showing increased expression of certain antioxidant genes. This suggests that the parasite attempts to compensate for the low levels of GSH. Understanding regulation of the antioxidant systems that protect malaria parasites against oxidative insults might help to identify potential targets for parasite's life cycle interruption and development of new drugs. This work was partially funded through: MBRS-RISE R25-GM061838 and RCMI 8G12MD007600.

P-124 Localization of Fulicin-lke Immkunoreactivity in the Central Nervous System and Periphery of Biomphalaria glabrata, an Intermediate Host for Schistosomiasis

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An estimate of about ten percent of the population worldwide live at risk of contracting the parasitic disease schistosomiasis, or "snail fever". The digenetic trematode worm species Schistosoma mansoni that is responsible for causing the most common form of intestinal schistosomiasis requires the freshwater snail Biomphalaria glabrata to serve as its primary intermediate host, where it multiplies and develops into its cercarial form that is infectious to humans. Parasitic castration and parasitic gigantism are among some of the profound behavioral changes that the infection of B. glabrata by S. mansoni is known to cause. For this reason, a neural transcriptomics approach was undertaken to determine precursor prohormones that could encode neuropeptides implicated in Biomphalaria reproductive and feeding behaviors. A transcript (1616 nucleotides) was found to encode a putative precursor polypeptide (316 aminoacids) that could give way to the neuropeptide fulicin (Phe–D-Asn-Glu-Phe-Val-NH2; Ohta et al. 1991; Yasuma Kamatani et al. 1995) and five additional related peptides. For this investigation, affinity purified polyclonal antibodies (rabbit) were developed against the anticipated fulicin neuropeptide. Fulicin-like immunoreactivity was observed throughout the central nervous system (CNS) with distinct neurons and clusters on the ventral and dorsal surfaces, as well as in peripheral tissues. Fulicin-like cells of both large and small diameter were present on the dorsal and ventral surfaces of the buccal ganglion. In addition dispersed clusters of small diameter cells were observed in the cerebral and pedal ganglia. However, in the right pleural ganglion no fulicin-like neurons were present, although it was rich in immunoreactive fibers. Within the left parietal and visceral ganglia, clusters of large prominent cells appeared to give rise to axons projecting to the anal and intestinal nerves. Additionally, peripheral tissue of B. glabrata, specifically regions of the mantle, lip and tentacle were rich in fulicin-like immunoreactive fibers and cell bodies. These results suggest that fulicin and other peptides derived from the fulicin precursor could regulate behaviors related to food intake, reproduction, and growth that are altered during the course of infection in this host-parasite system.

P-125 MT1a mRNA expression in human lung cells (BEAS 2B) after airborne PM_{10} and Copper exposure: A possible biomarker for Asthma?

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Puerto Ricans have the highest prevalence, morbidity and mortality of asthma than any other ethnic group in the U.S. This chronic inflammatory disease can be triggered by different stimuli such as airborne Particle pollution (PM). PM transfers transition metals, including cooper, to the human airways generating reactive oxygen species (ROS), which can induce inflammation and tissue damage. The genetic susceptibility is a key factor in the development of disease since it determines the ability that humans may possess to handle environmental insults. A Metallothionein protein (MT1a) is a free radical scavenger expected to be induced in lung cells by PM exposure. Nevertheless, we were not able to find any literature that supports the induction of MT1a in human lung cells. This research demonstrates the induction of MT1a mRNA in human lung epithelial cells (BEAS2B) exposed to both Cu and urban PM10 organic extracts. BEAS2B cells were exposed to Cu and organic PM10 extracts from Puerto Rico. Organic extracts were prepared from urban (Guaynabo) filters by means of Soxhlet extraction and heavy metals were determined using Atomic Absorption Spectrometry. BEAS-2B cells were cultured and exposed to PM10 for 4 hrs. RNA was isolated and relative mRNA levels of MT1a were determined by RT-PCR. Urban PM10 concentrations were 35 ug/m3 and 60 ug/m3 for the months of March and June, respectively. Concentrations of copper for this urban PM10 were 29.6 ppm and 50.3 ppm, for March and June, respectively. Induction of MT1a mRNA expression was found in Cu exposed lung cells demonstrating its response to metal exposure. In addition, we also found MT1a induction by urban PM10 organic extracts during both March and June. However, this induction did not correlate directly with Cu concentrations in PM10 samples suggesting that other components of the extracts are also important in MT1a expression. This is the first report showing MT1a expression in human lung cells.

P-126 Characterization of the molecular mechanisms of a novel Rac inhibitor in breast cancer

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Metastatic breast cancer still lacks effective treatment, and remains the primary cause of mortality. Therefore, new effective strategies to inhibit breast cancer metastasis are needed. The Rho family GTPase Rac is an ideal target for anti-metastatic cancer therapy, because Rac is a key molecular switch that can promote cancer cell migration/invasion and survival. Previously, we reported the design and development of EHop-016, a small molecule compound, which inhibits Rac activity of metastatic cancer cells with an IC50 of 1 μM. Consequently, EHop-016 inhibits the activity of the Rac downstream effector p21-activated kinase (PAK) and cell migration in metastatic breast cancer cells; and significantly reduces tumor growth, metastasis, and angiogenesis in a mouse model of metastatic breast cancer (1). The objective of this study is to further investigate the molecular mechanisms of Ehop-016 in breast cancer cells and mouse mammary fat pad tumors by using PCR arrays. Our findings show Ehop-016 is able to regulate important tumorigenic signaling. In conclusion, EHop-016 has great potential as an anticancer compound. Moreover, in addition to affecting cancer cells, EHop-016 may also inhibit the tumor promoting immune cells in the tumor microenvironment (TME).

P-127 Anticancer Effect of the Moringa oleifera leaf extract in Human Cancer Cell Lines

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Many medicinal plants are used as chemo preventives and antitumor agents in numerous experimental models of carcinogenesis. Moringa oleifera is a plant that contains several phytochemicals, which have been used for medical purposes including anti-inflammatory, analgesic, metabolism activator, anti-asthmatic, anti-anemia, hormone-producing, liver protector, and detoxifier, among others. Moringa oleifera extracts have also been proposed as potential anticancer agents. Cancer is one of the main causes of deaths worldwide. Although many drugs exist against several types of cancer, more specific agents with lower side effects are necessary. Few reports exist regarding the antitumor activity of Moringa oleifera leaf extract in cancer cells. We investigated the effect of Moringa oleifera leaf extract in ovarian, prostate and breast human cancer cell lines. We hypothesized that the Moringa oleifera leaf extract will inhibit the growth of cancer cells. The Moringa oleifera extract was tested in ovarian, prostate and breast cancer cell lines. Seventy-two hours post-treatment, the cell viability was measured by a colorimetric analysis with the AlamarBlue dye. The concentration inhibiting 50% of cell growth (IC50) was calculated. The IC50 of Moringa oleifera extract in the cisplatin-resistant ovarian cancer cells, A2780CP20, was 0.27 mg/ml. The IC50 for the prostate cancer cells, PC3, was 0.17 mg/ml. Current experiments are testing the effect of Moringa oleifera extract in breast, and other ovarian cancer cells.