• LETTERS •

Lung and Bronchus Cancer in Puerto Rico: Changes in Incidence and Mortality Rates by Histology and Sex During 1987-2003: comment on the article by Rivas et al

To the Editor:

Rivas et al (1) recently published an invaluable paper showing a changing pattern of the major histopathologic subtypes of lung cancer in Puerto Rico (1987-2003 study period), which coincides with the global trend. Specifically, an increase of the incidence rate for adenocarcinoma with a coincident decrease of squamous cell carcinoma since at least the 1980s (2-3) was reported. Although some factors such as changes in cigarette composition and in smokers` inhalation patterns have been proposed as possible explanations (shift in the anatomic tissue target of carcinogen exposure from the central to the peripheral airways), the causes for the increased incidence of adenocarcinoma and decreased incidence of squamous cell carcinoma evidenced in Puerto Rico and elsewhere are not completely understood (4). From a pathology standpoint several points that impact carcinoma subclassification are worth mentioning: rates of interobserver diagnostic agreement, varied classification schemes, use or lack of special pathologic ancillary diagnostic tests, and biopsy sample size. Several studies have addressed interobserver agreement for subtyping lung carcinoma, revealing excellent kappa values for squamous cell, small cell and adenocarcinoma when typing is based on the WHO classification (5). There have been several editions of the WHO classification system, and some practitioners still employ previous versions (1967, 1981). Unfortunately the typing reliability according to the 1967 version has been shown to be rather poor (6). Even though the WHO system is the most widely used, there are multiple classification schemes, making it hard to assess how much of the carcinoma subtypes frequency changes are due to biologic versus inter observer variability and differing diagnostic criteria between classification methods. Also, most studies disclosing temporal trend incidence changes of lung cancer types lacked a central diagnostic review (5), where a consensus diagnosis is reached among expert subspecialists using the same diagnostic scheme, making the final diagnosis less subject to interobserver variability. Another important factor for the misdiagnosis (8) of lung carcinoma has to do with new diagnostic techniques (transbronchial and needle core), the small size of the resulting biopsy and the underlying morphological heterogeneity of lung tumors, of which it has been shown that less than a third are of a single cell type (7). Thus the small sample represents a minute portion of the tumor and will usually disclose a single pattern when compared with the entirety of the lesion, two thirds of which will have at least two histopathologic patterns. Cost considerations and access to recent technological developments for the use of special stains and immunehistochemistry also hamper adequate subclassification of lung tumors (9) as for example tumors with variant growth patterns which otherwise are hard to place on a subcategory based solely on light microscope morphology.

A final comment on the authors reported shortcomings of the study is the relatively high proportion (37%) of other histological types. It is worth considering that the most frequent malignant pulmonary lesions are metastases (10), most of which are adenocarcinomas from (in relative order of frequency): breast, colon, stomach, pancreas, kidney, melanoma, prostate, liver, thyroid, adrenal, male genital and female genital. Based on this information, if most of the reported cases classified as adenocarcinomas on the paper by Rivas et al were based on small biopsy samples, consideration must be given to the fact that it is next to impossible to determine if an adenocarcinoma is pulmonary or of metastatic origin unless tissue immunohistochemistry along with imaging studies (radiographic and nuclear medicine) and clinical correlation are performed.

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Reply

To the Editor:

The points made by Dr. Quintero are all valid and well taken. Classification of a biopsy sample's characteristics into a pathologic diagnosis is fraught with all the complexity and difficulty highlighted in the letter. This complexity is only likely to increase as new molecular markers are identified and correlated to clinical behavior (1). A precise diagnosis will become more important as the treatment of lung cancer becomes more personalized based on tumor and host characteristics (2-3). This need for precision may require larger biopsy samples (4), but clinical studies proving that the benefits of new therapies justify a more invasive diagnostic approach are yet to be made. Since the source of the data was the Puerto Rico Central Cancer Registry, it was impossible for the authors to control for these factors. Still, it is interesting to see the same shift in the most common histologic type of lung cancer taking place simultaneously in multiple countries and that Puerto Rico is included in that trend (5).

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Pediatric Brain Tumors in Puerto Rico: comment on the article by Saavedra et al

To the Editor:

I read with great interest the paper of Saavedra, et al (1) and would like to address some brief comments to the authors. Being involved in the field of brain tumor molecular pathology, the authors are most commended for this timely article. First, knowing firsthand the painstaking labor needed for the perusal of data when facing the lack of an adequate informatics platform within our premises (Centro Médico San Juan area hospitals) (2-3) and second for the desperate need of organizing, accruing and testing large numbers of patients (samples) to derive adequate results (sufficient statistical power) to translate into the discovery of new diagnostic, prognostic/predictive biomarkers in the new era of genomics based medicine (4).

For this process to be efficiently carried out it is needed that in descriptive population studies (more so when there is a blatant scarcity of published works) to adequately pursue the thorough revision of most literature previously published on the subject. This helps to maintain a chronology of bibliography for future researchers to effectively examine the varying approaches previously employed and what has and has not been previously studied. For this reason this reader heeds the authors to note that their statement "In 2004, the Puerto Rico Cancer Registry reported that the incidence of central nervous system cancer was 20.1 per 100,000. They did not specify location or type of tumor. A complete analysis of pediatric brain tumors with regard to location, tumor typing, and age distribution in the Puerto Rican population has not been made"(5), is partially correct. There are, a previous (6), and two more recent publications (7-8) on the subject other than the one referenced (5) by Saavedra et al (1), which do indeed describe the epidemiology of central nervous system tumors as to tumor type, age distribution, incidence and mortality. The current study is certainly novel on the reporting of tumor location and on solely describing pediatric patients, and is most helpful to the ones working on this field.

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Reply

To the Editor:

We appreciate the comments by Dr. Quintero regarding our article entitled Pediatric Brain Tumors in Puerto Rico (1). We do agree with the current lack of an adequate informatics-based platform in our hospitals (University Pediatric Hospital [UPH]/ Puerto Rico Medical Center), and the need of implementing an efficient electronic medical record not only for research purposes but for keeping adequate tracking of our patients' health. Nevertheless, since 2002 the Neurosurgery Department of the University of Puerto Rico has an electronic database that allows keeping record of all patients seen and surgically intervened by our service. This database gave us the opportunity to analyze exact data regarding "newly diagnosed pediatric brain tumors in the UPH". In the conduction of our study a thorough literature review was performed, including the studies cited by Dr. Quintero (2-4). However, we do not agree that these studies described a similar central nervous system epidemiology. Murray et al described brain tumors in an adult population only (2). Pérez-Perdomo et al did a descriptive study of all new childhood cancers in Puerto Rico from 1980 to 1991 (3). They found a combined intracranial and spinal neoplasm incidence of 16%. They did not show specific data regarding the complete spectrum of pediatric brain tumors and their characteristics. Pérez Irizarry et al, on the "Registro Central de Cáncer de Puerto Rico" from 1999 to 2003, described the three most common histologic types of brain tumors in children from 0 to 19 years of age, but without providing further details (4). We still believe that our study is the first one looking at specific aspects of pediatric brain tumors in our population which gives a full perspective of this pathology.

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