

Lung Cancer Screening in Community-Based Practice in Puerto Rico: A Survey of Puerto Rico Pulmonologists

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Objective: Lung Cancer (LC) in Puerto Rico (PR) is the fifth most common malignancy (5.2%), the third most common among men (5.9%) and the fifth among women (4.6%), with a mortality of 11.3%. Despite current data demonstrating the importance and clinical value for lung cancer screening LDCT Screening among high risk patients remains low regardless of the potential to prevent thousands of lung cancer deaths per year. Due to significant disparities in health care in PR it is believed that LDCT use for lung cancer screening in PR is not been enforced in the private sector.

Methods: A self-administered anonymous survey was provided to a group of pulmonologists at the annual meeting of the PR Pneumology Society. The survey contained questions regarding characteristics of their practice and implementation of lung cancer screening. Provided information was tabulated in percentages.

Results: A total of 31 pulmonologists participated in the administration of the survey. Most participants had their medical practice in the metropolitan area (52%), which is the most populated area with best access to physicians and health care services. The sample from the north area comprised 19% of the subjects. All respondents were affiliated to health care institutions. As most of them served 1-3 health care centers (96%) with access to specialized equipment such as Chest CT. Most of the physicians (99%) had availability of chest CT scan within 1 hour from their practices and 97% were aware of the U.S. Preventive Services Task Force lung cancer screening recommendations. Their age range was 41 and over (55%). Despite the above there were discrepancies when asked about lung cancer screening implementation. Sixteen (16) percent did not perform lung cancer screening at all, and 77% that performed screening, reported limitations to it.

Conclusion: This data suggests that although lung cancer screening has shown to reduce mortality and is recommended by the USPTF, it is not been conducted appropriately in PR. The main limitation identified was what the health insurance had to offer rather than lack of health insurance. Other factor to take in consideration is the lack of a comprehensive screening program for Lung Cancer anywhere in the island. In addition, costs associated with staff and implementation were noted as a significant barrier among the surveyed pulmonologists. [*PR Health Sci J* 2022;41(3):161-164]

Key words: Lung cancer disparities, Lung cancer screening, Lung cancer in Puerto Rico

In Puerto Rico (PR), lung cancer (LC) is the fifth most common malignancy (5.2%), the third most common among men (5.9%) and the fifth among women (4.6%), with a mortality of 11.3% per 100,000 population (1,2). Among Puerto Rican men and women, LC is the second and third deadliest cancer (13.1% and 9.7%, respectively). (3). The early detection of LC with the appropriate screening methods increases patient survival rate, as such screening leads to early diagnosis and treatment. Although progress has been made in the diagnosis and management of LC, only 15% of all LC patients are alive 5 years or more after diagnosis. Until recently, no method of screening has been shown to result in a reduction in mortality from LC.

Nevertheless, the National Lung Screening Trial has shown that screening of patients at high risk for LC with low-dose helical computed tomography (LDCT) was associated with a 20% reduction in LC mortality (4). The U.S. Preventive Services

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Task Force (USPSTF) has made a grade-B recommendation with reference to LDCT screening (5), for the appropriate early detection of LC, there must be an ongoing commitment to the responsible use of the current guidelines, to LC screening, and to follow-up. Despite the current data demonstrating the importance and clinical value of LC screening, using LDCT for high-risk patients remains low, regardless of its potential to prevent thousands of LC-related deaths per year. Due to the significant disparities in healthcare in PR, it is believed that LDCT for LC screening in PR is underutilized in the private sector. In addition, the current guidelines call for LDCT screening to be conducted by a comprehensive screening program, and many hospitals and/or medical centers are still struggling to put the required components into place. Because of their low income and socioeconomic status, nearly one-half (49%) of the people living in PR receive government healthcare services and receive, as well, their medical care through the Medicaid program; in the continental US, on the other hand, 20% of the people (of all races and ethnicities receive care through Medicaid (6,7). Despite some barriers within the healthcare system, including those that exist in the delivery of healthcare, primary prevention and screening modalities are prioritized and are part of the standard routine of medical care. For example, the rates for screening mammograms are higher in PR than they are in the continental US. In PR, however, using LDCT to screen for LC is infrequent (8). Our study aimed to assess the viewpoints of local, private-sector pulmonologists with regard to the implementation, availability, and limitations of LC screening in a community-based practice in PR. We believe that LC screening with LDCT (per USPSTF guidelines) is underutilized in the private sector, most likely due to the significant disparities in healthcare in PR.

Methods

A self-administered anonymous survey was provided to pulmonologists attending the annual meeting of the Puerto Rican Pneumology Society in 2016. The survey tried to characterize the practices related to the implementation of LC screening (Table 1). The information gathered from the survey included the respondent's practice location and number of affiliated hospitals, the age range and sex of the patients in the practice, the respondent's awareness of USPSTF, the availability to said practice of chest CTs, and the limitations to screening guidelines. Additionally, the survey explored different aspects of and barriers to discussing LDCT LC screening with a patient and, when appropriate, ordering this test; the participating physicians answered questions about their knowledge, attitudes, and beliefs concerning the test and provided clinical experiences, when relevant. Quantitative data were entered into an Excel database. Descriptive statistics were used to characterize the reported perceptions and practices regarding LDCT LC screening. Residents, fellows, Veterans Affairs (VA) physicians, pediatric pulmonologists, and retired physicians were excluded.

Veteran Administration (VA) pulmonologists were excluded as pulmonologists working for this institution are already engaged in LC screening initiatives. The purpose of this study was to evaluate the implementation, availability, and limitations of LC screening in community-based practices in PR, where access to equipment and insurance coverage is limited. No identifiable data were collected. This study was approved by the Institutional Review Board of the VA Caribbean Healthcare System, which waived the need for informed consent.

Table 1. Lung Cancer Screening survey questions

1. Region of the practice location:
 - North
 - East
 - West
 - South
 - Central
 - Metropolitan area
2. With how many hospitals are you affiliated?
 - 1 2 3 4 5 More
3. Age range of the patients in your practice (more than one answer allowed)
 - 21 – 40 41 – 60 61 – 80 >80
4. Ratio of male to female patients in your practice:
 - 1:1 1:2 1:3 2:1 3:1
5. Are you aware of the U.S Preventive Service Task Force (USPSTF) Lung Cancer Screening guidelines?
 - Yes
 - No
6. Availability of chest computed tomography at your hospital/practice (in minutes)
 - 10 20 30 40 > 40 min
7. Do you perform lung cancer screening in your practice?
 - Yes
 - No
8. What does not allow you to fulfill the USPSTF lung cancer screening goals (more than one answer allowed)?
 - Lack of medical healthcare insurance coverage
 - Inadequate infrastructure
 - Lack of trained personnel at your workplace
 - Lack of radiologist and/or imaging support
 - Other: _____

Results

A total of 31 pulmonologist (out of 49 attendees) participated in the survey at the meeting of the Puerto Rican Pneumology Society, resulting in a response rate of 63%. Most of the participants had their medical practice in metropolitan San Juan (52%), which is the most populated area of PR and provides the best access to physicians and healthcare services. The sample from the northern area on the island (i.e., San Juan and environs) comprised 19% of the subjects. All the respondents were affiliated with at least 1 healthcare institution; most of them served 1 to 3 healthcare centers (96%), all with access to specialized equipment such as chest CT machines. Equipment for performing chest CT scans was located within an hour of the offices of most (99%) of the responding physicians, and 97% were aware of the USPSTF LC screening recommendations. Their ages were more than 41 years old (55%). Despite the widespread availability of the

appropriate equipment, there were discrepancies regarding LC screening implementation, in that 16% of the participating physicians did not perform LC screening at all, and the 77% that performed screening reported limitations to it.

Among the limitations cited, the lack of medical health insurance coverage was the most common, being reported by half of the physicians. This was followed by lack of adequate infrastructure, with 10% of the participants disclosing this limitation; 3% revealed that they had personnel limitations at their workplace and lacked imaging or radiological support in the community.

Discussion

An LC screening program requires a complex effort with the purpose of identifying subjects at risk but without symptoms and in an early stage of LC. Catching patients at such an early stage should allow a curative treatment and, at the same time, prevent persons that do not have LC from being harmed. The implementation of an LC screening program requires a systematic, structured, standardized, and validated protocol that must be continuously monitored. Due to differences in the screening environment and conditions, this kind of screening must be tailored to local conditions. Healthcare practitioners in the continental US often rely on what some call “the 10 pillars of lung cancer screening,” which are as follows: eligibility, education, exam ordering, imaging acquisition, image review, communication, referral network, quality improvement, reimbursement, and research frontiers (9). Successful screening requires a multidisciplinary organization with a well-organized and validated program. It has been noted that this is not a national public health priority and that policies should be promoting widespread screening among at-risk populations. Based on this, it has been observed that LC screening is not being conducted appropriately in PR. At the same time, no state educational awareness campaign has been developed and/or implemented, as well as no coordinated effort to reach the primary care community has been done with such purpose (10). Since it has been proven that the early detection of LC is a cost-effective method to save lives and improve outcomes, government, public health and/or private entities should make LC screening and smoking cessation a top priority.

Healthcare related disparities (HCRDs) are any differences in health status, health outcomes, and/or healthcare use that reflect a gap in the quality of care delivered. Social inequities can be one cause of HCRDs, as can system-level factors, those associated with the patient-provider relationship, or both (11). Therefore, according to our findings, the lack of LC screening is an HCRD. There are several disparities when comparing PR and the rest of the United States regarding LC screening. Some of the disparities between both relate to medical care access as well as race. Both will require further research in order to address them. It is known that current guidelines do not specifically take certain racial/ethnic populations into account, and it has been

noted that prevalence and mortality differ in these population groups. Current LC screening guidelines exclude large percentages of several high-risk populations that do not meet the current USPSTF guidelines. Potentially exacerbating the already existing disparity-related gap in LC survival is the fact that, based on these guidelines, eligible white smokers with LC are more likely than their non-white counterparts to take part in LC screening (12). Unequal access to healthcare also contributes to racial disparities in LC outcomes, affected by healthcare policies that limit access to adequate LC screening for those that are high risk but do not meet the current screening guidelines. Improving the access to healthcare of those underrepresented individuals who are considered high risk but who do not meet the current USPSTF guidelines, due to the lack of adjustments based on race/ethnicity/exposure and geographic disparities, can also decrease the burden for providers (13).

Conclusion

These data suggest that although LC screening has been shown to reduce mortality and is recommended by the USPSTF, it is not being conducted appropriately in PR. The main limitation identified was the healthcare insurance coverage or approval, rather than the lack of it, creating a breach in the quality of the care delivered. Another factor to take into consideration is the lack of a comprehensive screening program for LC anywhere on the island. Furthermore, costs associated with staff and implementation were noted by the surveyed pulmonologists as being a significant barrier. Similarly, LC screening guidelines should take into account racial differences in smoking behaviors and LC incidence, prevalence, and mortality. At the same time, improving access to care is essential if we are to address the high incidence and mortality of LC. We need to improve such screening in order to, conceivably, improve health outcomes and avoid inequities.

Resumen

Objetivo: El Cáncer de Pulmón (CP) en Puerto Rico (PR) es la quinta neoplasia maligna más común (5.2%), la tercera más común entre hombres (5.9%) y la quinta entre mujeres (4.6%), con una mortalidad de 11.3%. A pesar de los datos actuales que demuestran la importancia y el valor clínico del cernimiento de cáncer de pulmón, el cernimiento mediante LDCT entre los pacientes de alto riesgo sigue siendo baja, irrespectivo del potencial para prevenir miles de muertes por cáncer de pulmón al año. Debido a las disparidades significativas en el cuidado de la salud en PR, se cree que el uso de LDCT para la detección del cáncer de pulmón en PR no se hace cumplir en el sector privado. Métodos: Se le proveyó a un grupo de pulmonólogos en la reunión anual de la Sociedad de Pulmonólogos de Puerto Rico una encuesta anónima para que fuera autoadministrada por ello(a)s. La encuesta contenía preguntas sobre las características de su práctica y la implementación del cernimiento de cáncer de

pulmón. La información proporcionada se tabuló en porcentajes. Resultados: Un total de 31 neumólogos participaron en la administración de la encuesta. La mayoría de los participantes tenían su práctica médica en el área metropolitana (52%), que es el área de mayor población, con mejor acceso a médicos y servicios de salud. La muestra del área norte comprendió el 19% de los sujetos. Todos los encuestados estaban afiliados a instituciones de salud. La mayoría de ellos trabajan en 1-3 centros de cuidado de salud (96%) con acceso a equipos especializados como TAC de tórax. La mayoría de los médicos (99%) disponían de una tomografía computarizada de tórax en la cercanía de 1 hora desde sus prácticas y el 97% conocía las recomendaciones de cernimiento del cáncer de pulmón del grupo de trabajo de servicios preventivos de EE.UU. Su rango de edad fue de 41 años y más (55%). A pesar de lo anterior, hubo discrepancias cuando se les preguntó sobre la implementación de cernimiento de cáncer de pulmón. El 16% no realizan ningún tipo de cernimiento de cáncer de pulmón y el 77% que lo hacían reportan limitaciones en hacerlo. Conclusión: Estos datos sugieren que, aunque se ha demostrado que el cernimiento del cáncer de pulmón reduce la mortalidad y es recomendada por la USPTF, no se conduce adecuadamente en PR. La principal limitación identificada fue lo que el seguro de salud ofrece a diferencia de la falta de seguro de salud. Otro factor a tener en cuenta es la falta de un programa comprensivo de cernimiento de cáncer de pulmón en cualquier parte de la isla. Además, los costos asociados con el personal y la implementación se señalaron como una barrera significativa entre los neumólogos encuestados.

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