

MEDICAL EDUCATION

Asthma Knowledge Among Internal Medicine Residents

EDWIN ALICEA, MD; JESUS CASAL, MD; SYLVETTE NAZARIO, MD; WILLIAM RODRÍGUEZ, MD.

Objectives. To assess the medical knowledge about asthma among residents from the Accreditation Council on Graduate Education (ACGME) accredited Internal Medicine programs.

Background. Asthma prevalence and morbidity has increased significantly in the last 20 years. Recent morbidity data suggests that approximately 14 to 15 million Americans suffer from asthma and 5,000 of them die annually due to this illness. Previous studies have suggested that Puerto Ricans are disproportionately affected by asthma. In order to impact both morbidity and mortality relates to asthma, primary care givers should be knowledgeable about the disease.

Methods. Based in the 1993 National Heart, Lung and Blood Institute (NHLBI) guidelines, a questionnaire was developed to evaluate the knowledge of asthma in physicians in the Internal Medicine

Residency Programs. It consisted of 27 questions covering the areas of diagnosis and treatment of asthma.

Results. The questionnaire was answered by 90% of the 138 residents active at the moment of the study. Fifty-one percent of the residents failed to obtain a score of 70% or greater. Score on asthma diagnosis was less than 70% and did not improve through year of training. Score obtained on asthma treatment improved through training year although no statistical difference was obtained.

Conclusions. In view of these results it is imperative to reinforce the state of the art asthma education of physicians. Research initiatives must evaluate educational strategies to improve asthma education.
Key words: Asthma, Education, Questionnaire.

Asthma prevalence and morbidity has increased markedly in the last 20 years. Approximately 14 to 15 million Americans suffer from asthma and 5,000 of them die due to this condition annually (1). Furthermore, the economic impact of asthma is a major problem. In the United States, \$6.2 billions were spent in 1990 for hospitalizations, emergency department visits, physicians' services, and medications for asthma (2). Asthma contributes to the loss of more than 10 million school days, 3 million workdays annually, and more than 700 million dollars in potential wages of caregiver's income (1).

Previous studies have suggested that Puerto Ricans are disproportionately affected by asthma. It affects 32% of school-age children and 20% of the general population (3,4). In order to impact asthma morbidity, primary care providers should be knowledgeable about the disease. Such physicians must be acquainted with the guidelines recommended by the National Heart, Lung and Blood Institute (NHLBI) on the treatment and diagnosis of asthma. The purpose of this paper is to assess asthma knowledge among physicians in Internal Medicine Residency Programs.

Methods

Based in the 1993 NHLBI guidelines, a questionnaire was developed to evaluate asthma knowledge of physicians in the Internal Medicine Residency Programs. The questionnaire was distributed to those programs in Puerto Rico accredited by the Accreditation Council on Graduate Medical Education (ACGME). It consisted of 27 questions related to asthma diagnosis and treatment. From October to December 1996, 124 physicians out of 138 answered the questionnaire. Forty six of them were

From the Pulmonary Diseases Training Program, San Juan Veterans Affairs Medical Center, University of Puerto Rico School of Medicine, San Juan, Puerto Rico.

Address for correspondence: Edwin Alicea, MD, Pulmonary Section (HIE), One Veterans Plaza, San Juan, Puerto Rico 00927-5800, Phone: 758-7575 ext. 5656 Fax: 281-4948, E-mail: ealicea@pol.net

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first year residents, 47 were second year residents and 31 were in their third year of training. The questionnaire was validated with practicing academic pulmonary physicians. The passing grade of 70% was established based on the validation scores. Data was analyzed using EPI-INFO statistical program.

Results

The questionnaire was answered by 90% of residents in internal medicine out of 138 active at the moment of the study.

A normal distribution of test score was obtained, with a mean of 68%. The score distribution is shown in Fig. 1.

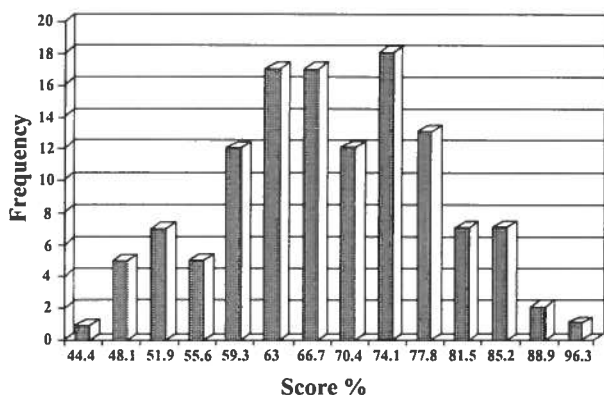


Figure 1. Score distribution among internal medicine residents.

Fifty-one percent of the residents failed to obtain a score of 70% or greater. The score on asthma diagnosis was less than 70% and did not improve through the years of training. Score obtained on asthma treatment improved through the year of training although no statistical

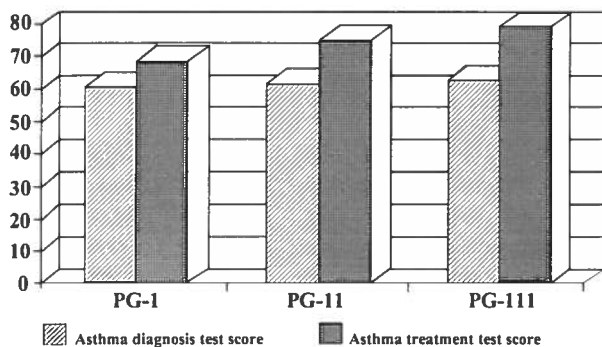


Figure 2- Asthma diagnosis and treatment tests score.

difference was obtained (Fig. 2). Above findings indicate that third year internal medicine residents in Puerto Rico have the same knowledge about asthma as those in their first year of training.

Discussion

The morbidity of asthma has continued to increase despite better understanding of the pathophysiology and improvement in therapeutic modalities (5,6). Factors that could justify the increase in morbidity include: 1) underestimation by both patient and physician of asthma severity, 2) insufficient use of objective measurements, 3) undertreatment often associated with overreliance on bronchodilators and underuse of anti-inflammatory agents, 4) increased exposure to environmental factors, including indoor or outdoor pollution and industrial exposures, and 5) discontinuity of medical care and delay in seeking help (7). Despite the recognition of such factors, there is no definitive explanation for the increase in asthma morbidity (2).

Since asthma is so common, the role of the primary care physicians in the asthma treatment and diagnosis of asthma should be reevaluated. At least two third of asthmatics are managed by primary care physicians, and their knowledge and skill should be improved (7). It has been reported that primary physicians assess pulmonary function in only 50% of asthmatic patients and less than 10% of them instruct their patients in the use of the peak flow meter. Patient education and self-management plans are usually not implemented (8).

Our results indicate that it is imperative to improve and update the knowledge on asthma diagnosis, as well as on the acute and chronic management of such patients among primary physicians in Puerto Rico. Research initiatives must consider new educational strategies to improve asthma education. We plan to test asthma knowledge among pediatricians and emergency room physicians and determine if by improving primary physicians' education we are able to decrease asthma morbidity in our population.

Resumen

Este estudio evalúa el conocimiento médico de los residentes de programas acreditados de Medicina Interna sobre el asma bronquial. Basado en las guías del "National Heart, Lung and Blood Institute" se desarrolló un cuestionario para evaluar el conocimiento sobre el asma. Este consistió de 27 preguntas que cubrían las áreas de diagnóstico y tratamiento del asma. El cuestionario fue contestado por el 90% de los 138 residentes activos al

momento del estudio. Cincuenta y uno por ciento de los residentes no lograron obtener una puntuación de 70% ó más. La puntuación obtenida en el diagnóstico del asma fue menos del 70% y no hubo mejoría a través de los años de adiestramiento. La puntuación obtenida en el tratamiento del asma mejoró a través de los años de adiestramiento pero no hubo diferencia estadística significativa. En vista de estos resultados es imperativo reforzar las guías de educación en asma a los médicos. Las iniciativas en investigación deben evaluar las estrategias educacionales para mejorar la enseñanza en asma.

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