European Respiratory Society
Annual Congress 2012

Title: A comparison between the diagnostic value of bronchodilator response in spirometry and questionnaire in determining asthma

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Body: Background and Aim: Because of unknown physiopathology of asthma the diagnosis of this common respiratory disorder is a challenging issue. In this study we compared the usefulness of a short questionnaire and response to bronchodilator in spirometry for differentiating asthma from other causes of chronic dyspnea. Method: 208 patients suffering from chronic dyspnea (>6 months) and had definite clinical diagnosis of asthma, chronic obstructive pulmonary disease, pulmonary fibrosis or bronchiectasis were enrolled. A questionnaire was designed by using the questions showed the best sensitivity and specificity in previous researches for diagnosing asthma. 9 of 43 questions were selected for final questionnaire by regression analysis. All of the patients were interviewed to complete questionnaire and spirometric response to bronchodilator was assessed. SPSS 18 and EPI 6 software were used for statistical analysis. Results: 53.8% of cases had asthma. In determining asthma, bronchodilator test had 48.2% sensitivity, 78.1% specificity, 72% and 56.4% positive and negative predictive values, 2.2 and 0.66 positive and negative likelihood ratios, 21.9% and 51.8% false positive and negative error rates and 62.01% accuracy. 9-question questionnaire showed 97.3% sensitivity, 77.1% specificity, 83.2% and 96.1% positive and negative predictive values, 4.24 and 0.03 positive and negative likelihood ratios, 22.9% and 2.7% false positive and negative error rates and 87.98% accuracy. Conclusion: According to our findings, this 9-question questionnaire has better diagnostic values than response to bronchodilator in spirometry for defining asthma between patients with chronic dyspnea.