
Abstract

The prevalence, nature, and severity of bronchial hyperresponsiveness in subjects with chronic obstructive pulmonary disease (COPD) is not known. To determine these factors, a 1 in 4 random sample of adults attending the Busselton population survey was studied. Subjects answered a modified Medical Research Council questionnaire and had spirometric function tested. They were defined as having COPD or asthma from the questionnaire. Bronchial responsiveness to histamine was measured using the rapid method, and results in the subjects with COPD were compared with those in asthmatic subjects with abnormal lung function. Fifty-nine subjects with COPD had a histamine inhalation test, and of these, 27 had bronchial hyperresponsiveness (BHR) (PD20FEV1 less than 3.9 mumol). The position of the dose response curves of the subjects with COPD overlapped considerably with those obtained from the 17 asthmatics. The geometric mean values for PD20FEV1 for these 2 groups were significantly different (p less than 0.001). There was a good correlation between FEV1/FVC and PD20FEV1 values in the subjects with COPD but not in the asthmatic subjects. Pretreatment with 600 micrograms of aerosolized fenoterol significantly improved the PD20FEV1 values in 11 subjects with COPD (1.26 to 6.16 mumol; p less than 0.001). The results suggest that approximately half the subjects with COPD in a general population have BHR but this BHR has different characteristics from that occurring in asthmatic subjects.