Abstract

An independent association between reduced levels of lung function and increased mortality from nonrespiratory causes has been observed in a number of studies. Since the total white blood cell count (WBC) has been related to both death from coronary heart disease and to levels of lung function, the relationship between these parameters was examined in subjects from the Busselton Health Surveys. Questionnaires regarding respiratory and cardiac illness and smoking habits were administered and total WBC, forced expiratory volume in one second (FEV1) and forced vital capacity measured in 2,105 males and 2,186 females at their initial attendance at a Busselton Health Survey in 1969, 1972 or 1975. Mortality follow-up to 1995 was completed. Multiple linear regression showed that smoking, increasing age, reduced FEV1 (% predicted) and a history of bronchitis were associated with increased WBC. Reduction of FEV1 (% pred) by 20%, a history of dyspnoea and an increase in WBC of 1,300 cells x mL(-1) were predictive of increased mortality from all causes or coronary heart disease by approximately 20, 100 and 10% respectively, independent of smoking. Removing WBC from the regression model did not significantly change the relationship between FEV1 and mortality. The study shows that the white blood cell count, forced expiratory volume in one second and dyspnoea are independently related to mortality in both males and females and that the effect of forced expiratory volume in one second on mortality is not explained by the white blood cell count.