Abstract

BACKGROUND: There is a direct association between level of lung function, measured by forced expiratory volume in 1 second (FEV1) and mortality rates. A low FEV may result from an increased decline in FEV1 with age, which may be an independent predictor of mortality.

OBJECTIVE: To examine the association between decline in FEV1 and mortality in a cohort from a community health study.

SETTING AND METHODS: From five cross sectional studies in Busselton between 1969 and 1981 a cohort of 751 men and 940 women was identified who had three assessments of lung function over a six year period and had other health related data collected. Each subject's average FEV1 and decline in FEV1 (litre/year) were calculated from these three measurements. Mortality follow up to December 1995 was obtained. Cause of death was taken as the certified cause of death from the death certificate using ICD9 categories.

RESULTS: The average decline in FEV1 was 0.04 litre per year (SD = 0.07) for men and 0.03 litre per year (SD = 0.06) for women. Average FEV1 was significantly associated with all cause and cardiovascular disease mortality in both sexes. In women there was a significant association between decline in FEV1 and death from all causes, after adjusting for average FEV1, age, smoking, coronary heart disease, and cardiovascular disease risk factors; a 0.05 litre per year increase in the rate of decline of FEV1 increased the risk of death for all causes by 1.23 (95% confidence interval 1.06, 1.44). In men the effect of decline in FEV1 on death rate was less; for all men the hazard ratio for a 0.05 litre/year greater decline in FEV1 was 1.19 (0.99, 1.21).

CONCLUSION: Decline in lung function, measured by FEV1 is a predictor of death, independent of average FEV1 and risk factors for cardiovascular disease.