

Effect of Duration of Disease on Ventilatory Function in an Ethnic Saudi Group of Diabetic Patients

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Abstract

Background:

Diabetes mellitus is a leading cause of illness and death across the world and is responsible for a growing proportion of global health care expenditures. The present study was designed to observe the effect of diabetes mellitus on lung function in patients with diabetes belonging to a specific ethnic group, namely Saudis.

Method:

In this study, a group of 47 apparently healthy volunteer male Saudi patients with diabetes was randomly selected. Their ages ranged from 20 to 70 years. The patients were matched with another group of 50 healthy male control subjects in terms of age, height, weight, ethnicity, and socioeconomic status. Both groups met exclusion criteria as per standard. Spirometry was performed with an electronic spirometer (Schiller AT-2 Plus, Switzerland), and results were compared by a Student's *t* test.

Results:

Subjects with diabetes showed a significant reduction in forced vital capacity (FVC) and forced expiratory volume in the first second (FEV₁) relative to their matched controls. However, there were no significant differences in the forced expiratory ratio (FEV₁/FVC%) and the middle half of the FVC (FEF_{25-75%}) between the groups. We observed a significantly negative correlation between duration of disease and pulmonary function, as measured by FEV₁ ($r = 0.258$, $p = 0.04$), FVC ($r = 0.282$, $p = 0.28$), and the middle half of the FVC (FEF_{25-75%}) ($r = 0.321$, $p = 0.014$).

Conclusions:

Pulmonary function in a specific ethnic group of patients with diabetes was impaired as evidenced by a decrease in FVC and FEV₁ compared to pulmonary function in matched controls. Stratification of results by years of disease revealed a significant correlation between duration of disease and a decline in pulmonary function.

J Diabetes Sci Technol 2007;1(5):711-717

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Abbreviations: (FEF_{25-75%}) force expiratory flow, (FEV₁) force expiratory volume in 1 second, (FEV₁/FVC) force expiratory ratio, (FVC) force vital capacity

Keywords: diabetes mellitus, lung function test, spirometry

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