

ABSTRACT

A STUDY ON PULMONARY FUNCTION TEST IN DIABETES MELLITUS AND ITS CORRELATION WITH DURATION OF DIABETES MELLITUS.

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INTRODUCTION:

Although diabetes is a multi systemic disorder its pulmonary involvement is not extensively studied.Pathoanatomical studies in diabetic patients have represented changes in basal lamina of alveolar epithelium and capillaries. The consequence is development of obstructive or restrictive disorders.Histopathological changes in lungs of diabetic patients are due to collagen and elastin alterations and microangiopathy .These changes become the cause of pulmonary dysfunctions.

Although a lot of research work is being carried out on the after effects of Diabetes Mellitus on pulmonary parameters worldwide, the literature pertaining to this is not in abundance in India.Therefore this study was undertaken to find out the correlation between duration of DM and PFTs

in patients who attended or admitted to medical OPD or wards of government rajaji hospital.

AIMS AND OBJECTIVES:

The present study is conducted to find the relation between duration of diabetes and its impairment of pulmonary function tests (PFT) in Type 2 DM patients.

STUDY POPULATION:

One hundred diabetic patients previously diagnosed, belonging to either sex attending / admitting to OPD/wards of Govt. Rajaji hospital, Madurai medical College Madurai , will be studied june 2016 to august 2016 equal number of age matched controls were also studied.

METHODS:

Patients will be classified into three groups A, B, C depending on the duration of diabetes. Group A consists of diabetes with duration of up to 3 years. Group B consists of diabetes with duration of 3 to 5 years. Group C consists of diabetes with duration more than 5 years.

Pulmonary function tests were done for all cases and controls.

RESULTS:

Our results showed that diabetic patients have reduced FEV1, FVC, FEV1/FVC%, PEFR when compared with healthy non diabetic controls. Mean FEV1 in our study is 2.496 litres/min which is reduced significantly than control ($p < 0.001$). Mean FVC in our study is 3.161 which is reduced significantly ($p < 0.001$). There is a restrictive pattern in diabetics when compared with the non diabetic controls of same age. FEV1, FVC, FEV1/FVC, PEFR are low in type -2 diabetic patients when compared to non diabetic patients. FEV1, FVC, PEFR

reductions are statistically significant. FEV1/FVC% reduction is not statistically significant. The reductions of FEV1, FVC, PEFr are more as the duration of diabetes advances and these reductions are statistically significant ($p < 0.001$). The reduction in FEV1, FVC, PEFr are inversely related to glycaemic control. Poor glycaemic control results in increased impairment of these parameters.

CONCLUSION:

Type-2 diabetic patients have reduced FEV1, FVC, PEFr when compared with non-diabetics of same age. Type 2 diabetic patients have a restrictive pattern of pulmonary function tests even in the absence of any symptoms. This restrictive pattern is more prominent as the duration of diabetes is increased.

Thus spirometry can be used as a simple investigation to study the pulmonary morbidity among the diabetics and to plan for an effective aggressive strategy in management of diabetes. Periodic monitoring of lung functions is necessary in diabetics as spirometry is a cost-effective, non-invasive tool.

ABBREVIATIONS

FEV1 FORCED EXPIRATORY VOLUME IN 1 SECOND

FVC FORCED VITAL CAPACITY

PEFR PEAK EXPIRATORY FLOW RATE