

Changes in Pulmonary Functions in Diabetes Mellitus Type 2

Authors : N. Anand, P. S. Nayyer, V. Rana, S. Verma

Abstract : Background: Diabetes mellitus is a group of disorders characterized by hyperglycemia and associated with microvascular and macrovascular complications. Among the lesser known complications is the involvement of respiratory system. Changes in pulmonary volume, diffusion and elastic properties of lungs as well as the performance of the respiratory muscles lead to a restrictive pattern in lung functions. The present study was aimed to determine the changes in various parameters of pulmonary function tests amongst patients with Type 2 Diabetes Mellitus and also try to study the effect of duration of Diabetes Mellitus on pulmonary function tests. Methods: It was a cross sectional study performed at Dr Baba Saheb Ambedkar Hospital and Medical College in, Delhi, A Tertiary care referral centre which included 200 patients divided into 2 groups. The first group included diagnosed patients with diabetes and the second group included controls. Cases and controls symptomatic for any acute or chronic Respiratory or Cardiovascular illness or a history of smoking were excluded. Both the groups were subjected to spirometry to evaluate for the pulmonary function tests. Result: The mean Forced Vital Capacity (FVC), Forced Expiratory Volume in first second (FEV1), Peak Expiratory Flow Rate(PEFR) was found to be significantly decreased ($P < 0.001$) as compared to controls while the mean ratio of Forced Expiratory Volume in First second to Forced Vital Capacity was not significantly decreased ($p > 0.005$). There was no correlation seen with duration of the disease. Conclusion: Forced Vital Capacity (FVC), Forced Expiratory Volume in first second (FEV1), Peak Expiratory Flow Rate(PEFR) were found to be significantly decreased in patients of Diabetes mellitus while ratio of Forced Expiratory Volume in First second to Forced Vital Capacity (FEV1/FVC) was not significantly decreased. The duration of Diabetes mellitus was not found to have any statistically significant effect on Pulmonary function tests ($p > 0.005$).

Keywords : diabetes mellitus, pulmonary function tests, forced vital capacity, forced expiratory volume in first second

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