## Abstract

background and study Objectives: Several studies in adults report abnormalities of lung function in patients with diabetes. The objectives of this study are to assess the Maximum Voluntary Ventilation (which is a measure of the mechanical factors of breathing) in patients with type I diabetes mellitus and its relation to the duration of diabetes. Patients and methods: 36 patients with a known history of type I DM (26 male, 10 female) with an average age between 16-42 years were enrolled in this study with 38 sex and age matched healthy individuals as a control group. The MVV test was performed in both groups for at least 3 times to ensure reproducibility. The study group was subdivided according to the duration of diabetes into group1 for those < 5 years duration (13 patients), group2 for those between 5-10 years (11 patients) and group 3 for those > 10 years duration (12 patients).

Results: mean values of direct Maximal Voluntary Ventilation test was reduced in diabetic patients compared to their matched controls in all study groups but it was most obvious in group 2 and 3 as duration of diabetes increase

Conclusion: in patients with type I DM there is impaired mechanical factors of breathing manifested by increase in airway resistance, reduced compliances or respiratory muscle force as indicated by reduction in the mean values of direct Maximal Voluntary Ventilation test relative to their matched controls.