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## Diabetes mellitus, HbA1c and lung function: Do they are related?

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Diabetes Mellitus (DM) is a chronic disease which frequently found in the world population. The complications of diabetes mellitus can lead to other comorbidities and mortalities. In addition, pathology of diabetes can cause microangiopathy in alveoli which have contributed to restrict lung volume, capacity and change in pulmonary functions. However, little is known about the mechanisms of lung dysfunction and there is controversial about relation among duration of diabetes, HbA1c, and pulmonary function in patients with type-2 diabetes mellitus. Thus, the present study was aimed to evaluate the correlation among duration of diabetes, HbA1c, and pulmonary function in patients with type-2 diabetes mellitus. A cross-sectional study was conducted at Somdet Prayannasungworn Hospital, Chiang Rai, Thailand. Forty participants had diagnosed of type-2 diabetes mellitus from physician, both men and women, and aged between 40-70 years old. All participants were interviewed for demographic data and duration of diabetes. They also were tested HbA1c and pulmonary function tests (PFTs) from trained physical therapist. Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC) and ratio of FEV1 and FVC (FEV1/FVC) and forced expiratory flow at 25-75% (FEF 25-75%) were measured by spirometry. The results showed that diabetes duration was statistical significantly negative correlated with forced expiratory volume in one second ( $r = -0.323$ ,  $p\text{-value} < 0.05$ ) and forced vital capacity ( $r = -0.349$ ,  $p\text{-value} < 0.05$ ) while HbA1c was not correlated with pulmonary function. Diabetes duration was significant associated with pulmonary function reduction in patients with diabetes mellitus. The relationship among HbA1c and pulmonary function in patients with type-2 diabetes mellitus were not found in this study.

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