

Respiratory Function, Oxygen Saturation, 6 Minute Walk Test, and Quality of Life in Patient
with Type 2 Diabetes Mellitus

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Abstract

Introduction: Diabetes mellitus (DM) is a disease which can affect body systems including pulmonary function. Although previous studies about pulmonary function in type 2DM patient was unclear, mechanism of respiratory function impairment and association among respiratory function, cardiovascular endurance, and quality of life might be revealed. This study was to evaluate effect of pulmonary function in type 2 DM and its association.

Methods: Cross-sectional study was conducted from 25 diabetic patients, hospital in Chiang Rai. All participants were diagnosed by a physician. Pulmonary function (FEV₁, FVC, FEV₁/FVC, and FEF 25-75%), WHOQOL, oxygen saturation, six-minute walk test (6MWT) were assessed. Data was analyzed by descriptive statistic and Spearman rank correlation coefficient.

Results: There were mean age (63.48±9.03 years.), body mass index (25.29±3.46 kilogram/meter²), comorbidities 3-5 diseases, mean HbA1c level (7.41±1.66), fasting blood glucose (141.84±47.96 milligram/deciliter), distance of six-minute walk test (187.28±94.47 meters), WHO-QOL score (100.76±10.03 scores) while FEV₁ (2.61±0.79), FVC (3.08±0.94), FEV₁/FVC (84.83±6.78 liters), FEF 25-75 (3.41±1.29) and O₂ Saturation (98.40±0.71%). We found high correlation between FEV₁ and FVC, FEV₁ and FEF 25-75 was significantly positive correlation (r= 0.973) and (r= 0.791) respectively. While FEV₁ and 6MWT was significantly moderate positive correlation (r=0.569), FVC and 6MWT (r= 0.546) and FEV₁/FVC and FEF 25-75 (r= 0.583). However, FEV₁ and WHOQOL was significantly mild correlation.

Conclusions: The significantly positive correlation among pulmonary function tests value, 6MWT and WHOQOL was found in this study. Although it showed moderate correlation, respiratory function should be concerned in diabetic patients.

Keywords: Type 2 diabetes mellitus, Pulmonary function, 6 minute-walk test, WHOQOL, Oxygen saturation