

Abstract

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Inspiratory muscle strength is correlated with carnitine levels in type 2 diabetes.

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INTRODUCTION: Plasma carnitine insufficiency has been known to cause muscle weakness. Carnitine levels and pulmonary functions were lower in patients with diabetes.

PATIENTS AND METHODS: To determine whether pulmonary functions are correlated with carnitine levels in patients with type 2 diabetes. In this study, we evaluated pulmonary functions and carnitine concentrations in 49 patients with type 2 diabetes and 34 healthy controls.

RESULTS: Carnitine levels were lower in type 2 diabetes group than control group (52.56 +/- 12.38 and 78.96 +/- 10.66 hmol/mL, respectively, $p < 0.0001$). Pulmonary functions were not significantly different between groups. Carnitine levels were not correlated with age, duration of diabetes, fasting blood glucose levels, and glycemic control (HbA1c%) in patients with type 2 diabetes. However, carnitine levels in patient group were correlated with % forced vital capacity (FVC%) ($r = 0.35$, $p = 0.016$), % forced expiratory volume in 1 s (FEV1%) ($r = 0.318$, $p = 0.029$), FEV1/FVC ($r = 0.302$, $p = 0.039$), inspiratory muscle strength (PImax) ($r = 0.407$, $p = 0.023$), and PImax% ($r = 0.423$, $p = 0.018$).

CONCLUSION: This study suggests that low carnitine levels may be associated with lower PImax and PImax% in type 2 diabetes.

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