

# Associations of Renalase with Epicardial Fat Tissue Thickness and Left Ventricle Hypertrophy in Patients under Peritoneal Dialysis Treatment

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**Introduction and Aims:** Left ventricular hypertrophy (LVH) is one of the most common cardiac abnormalities in patients with end stage renal disease (ESRD). LVH increases the risk of cardiovascular and all cause mortality 3.7 times in patients in this population. Hypertension, diabetes, increased body mass index, gender, age, anemia and hyperparathyroidism have been described as risk factors for LVH in patients on dialysis. However, there may be other risk factors which have not been described yet. Recent studies show that renalase and epicardial fat tissue thickness (EFTT) are associated with cardiovascular events. The aim of this study was to reveal the relation between LVH, renalase and EFTT in patients under peritoneal dialysis (PD) treatment.

**Material and Methods:** The study included 40 PD patients and 40 healthy controls. Serum renalase levels, left ventricle mass index (LVMI) and EFTT were measured in all participants and the relation between these variables were examined.

**Results:** Serum renalase levels were considerably higher in PD patients ( $1.97 \pm 0.06$  ng/ml) compared to controls ( $1.19 \pm 0.72$  ng/ml) ( $p < 0.0001$ ). Renalase was positively correlated with serum creatinine and duration of PD ( $r = 0.482$ ,  $p = 0.002$  and  $r = 0.477$ ,  $p = 0.002$  respectively). There was not a significant relation between renalase levels and neither systolic nor diastolic blood pressures in the PD patients ( $r = 0.092$ ,  $p = 0.574$  and  $r = 0.016$ ,  $p = 0.922$  respectively). There was not a significant relation between renalase and LVMI in the PD patients ( $r = -0.145$ ,  $p = 0.373$ ). LVMI significantly increased as EFTT rose in the PD patients ( $r = 0.986$ ,  $p < 0.001$ ).

**Conclusions:** This study did not reveal a relation between renalase and LVMI, but showed a relation between EFTT and LVH. Large clinical studies are needed to confirm or to refute the possible role of renalase in LVH pathogenesis and to use EFTT and LVH as risk measures in patients with renal disease.

**Key Words:** epicardial adipose tissue thickness, hypertension, left ventricular mass index, peritoneal dialysis, renalase