

# ADIPOCYTOKINEMIA AND EXOCRINE PANCREATIC INSUFFICIENCY IN PATIENTS WITH COMBINED COURSE OF TYPE 2 DIABETES MELLITUS AND CHRONIC PANCREATITIS

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**Background.** Tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) and apelin both are adipocytokines, which can be considered as unifying links in pancreatic metabolic disorders in patients with chronic pancreatitis (CP) and type 2 diabetes mellitus (T2DM).

**Aims.** The aim of this study was to explore the relationships between adipocytokinemia and exocrine pancreatic insufficiency in patients with chronic pancreatitis and type 2 diabetes mellitus.

**Patients & methods.** A total of 48 patients (18 males; mean aged  $53.74 \pm 1.63$ ) with CP and T2DM were examined; control group ( $n=20$ ). The survey plan included: elastase-1, TNF- $\alpha$ , glucose, HbA1c, HOMA-IR, IRI, apelin.

**Results.** We have found significantly higher levels of glucose, HbA1c, HOMA-IR, IRI in patients than in control. The levels of elastase-1 were significantly lower in examined patients compared to control ( $127.4 \pm 4.7$  vs  $210.5 \pm 0.87$ ,  $p < 0.05$ ). We have revealed 1.8-fold increase of TNF- $\alpha$  level in patients which was significantly higher than in the one control group ( $79.8 \pm 6.8$  vs  $46.6 \pm 7.9$ ,  $p < 0.05$ ). We have revealed significantly higher apelin level in examined patients than in comparison group ( $356.4 \pm 12.8$  vs  $258.3 \pm 6.4$ ,  $p < 0.05$ ). The following correlations were determined between TNF- $\alpha$  and elastase-1 ( $r = -0.62$ ;  $p < 0.05$ ), glucose ( $r = 0.53$ ;  $p < 0.05$ ), IRI ( $r = 0.72$ ;  $p < 0.05$ ) and HOMA-IR ( $r = 0.63$ ;  $p < 0.05$ ); between apelin and elastase-1 ( $r = -0.64$ ;  $p < 0.05$ ), HOMA-IR ( $r = 0.62$ ,  $p < 0.05$ ), IRI ( $r = 0.68$ ;  $p < 0.05$ ) and glucose ( $r = 0.60$ ;  $p < 0.05$ ); between apelin and TNF- $\alpha$  ( $r = 0.62$ ;  $p < 0.05$ ).

**Conclusion.** The obtained data suggest the possible use of dysadipocytokinemia as a marker of progression of exocrine pancreatic insufficiency in chronic pancreatitis and type 2 diabetes mellitus.