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THE FUNCTIONAL STATE OF THE PANCREAS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS WITH DIFFERENT PHENOTYPE

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Introduction. Type 2 diabetes mellitus (T2DM) has been described as a cause of pancreatic exocrine insufficiency (PEI). The role of obesity in this patients are discussed.

The aim of our study was to analyze the functional state of the pancreas in patients with T2DM with different phenotype.

Materials & methods: The study was performed on 62 patients with T2DM; control group (n=20). Patients were divided into 2 groups: 1st group (n=20) – T2DM with BMI < 25.0 kg/m², 2nd group (n=42) – T2DM with BMI > 25.0 kg/m². The survey plan included: BMI, pancreatic elastase -1 (PE-1), α -amilase, CRP.

Results: BMI in patients of 2nd group was significant higher than in 1st group and control group (32.8±0.8 vs 22.4±0.25 and 21.75±0.2, p<0.05). PE-1 levels were below the cutoff value in 56 cases (90%). 15 of them (26.8%) had level < 100 mcg/g. We revealed 1.6-fold decrease in PE-1 in patients of 2nd group (126.7±7.5) and 1.4-fold decrease in patients of 1st group (141.3±5.88) compared to control group (204.9±0.99) (p<0.05). We found 1.9-fold and 2.1-fold increase in α -amilase serum level in patients 1st and 2nd groups (32.99±2.5 and 29.9±3.63) which was significant higher than in control (15.45±0.68) (p<0.05). Level of CRP in patients both groups were significantly higher compared to control (5.29±1.08 and 4.6±0.78 vs 0.25±0.18, p<0.05). We found correlation between BMI with PE-1 (in 1st group r=-0.61; in 2nd group r=-0.47, p<0.05), CRP (in 1st group r=0.49; in 2nd group r=0.75, p<0.05), α -amilase (in 2nd group r=-0.68, p<0.05). Also the study showed correlations between CRP and PE-1 (in 1st group r=-0.70; in 2nd group r=-0.59, p<0.05), CRP and α -amilase (in 2nd group r=-0.42, p<0.05), α -amilase and PE-1 (in 2nd group r=0.34, p<0.05).

Conclusion: More than 90% of patients with T2DM had exocrine pancreatic function test altered. The greatest changes were found in patients with higher BMI. Higher BMI is an optional factor of progressive functional insufficiency of the pancreas, thereby complicated the course of T2DM.