The Influence of Tumor Necrosis Factor-α on Processes of Citolisis and Cholestasis in Patients with Comorbid Pathology

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Tumor necrosis factor-α (TNF-α) is an adipokine that can cause the cytotoxic effects and can stimulate the apoptosis, impairing liver function. There is a need in further study of TNF-α influence on liver cells properties and its role in the pathogenesis of nonalcoholic fatty liver disease (NAFLD) against the background of diabetes mellitus (DM) type 2 and obesity.

Purpose. To assess the correlation between TNF-α and indexes of liver function in patients with NAFLD combined with DM type 2 and obesity.

Materials and Methods. 50 patients with NAFLD in combination with DM type 2 and obesity (body mass index ≥ 30 kg/m²) were examined. The control group included 20 healthy individuals. Indexes of enzyme and pigment metabolism were defined by biochemical methods («Dac spectroMed» kit). The level of TNF-α was determined by immunoassay method («Vector-best» kit).

Results. The mean level of TNF-α in patients was significantly increased (96,65 ± 0,72 pg/ml; p <0.001) in comparison with the control group (29,19 ± 1,05 pg/ml). The direct correlation was established between TNF-α and aspartate aminotransferase (r = 0,58; p <0.05), alanine aminotransferase (r = 0,47; p <0.05), total bilirubin (r = 0,59; p <0.05), conjugated bilirubin (r = 0,59; p <0.05), alkaline phosphatase (r = 0,77; p <0.05).

Conclusion. The increase of TNF-α level can negatively affect on liver function, amplifying the processes of citolisis and cholestasis in patients with NAFLD in combination with DM type 2 and obesity.