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MODERN METHODS TO DIAGNOSE CHOLELITHIASIS IN PATIENTS WITH CHRONIC CHOLECYSTITIS ASSOCIATED WITH TYPE 2 DIABETES MELLITUS

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Taking into consideration a great importance of metabolic disorders caused by diabetes mellitus and cholelithiasis, the investigation of interrelations of these pathological processes is of great value.

The objective of our investigation was to find peculiarities of phase disorders of bile excretion in patients with chronic acalculous cholecystitis associated with type 2 diabetes.

The following methods of investigation were used: clinical, biochemical, instrumental, micro-, macroscopic, statistical. Detailed clinical investigation was carried out with 30 patients with chronic acalculous cholecystitis associated with type 2 diabetes mellitus (1st main group), 30 patients with chronic acalculous cholecystitis (2nd group) and 10 almost healthy patients.

Comparative examination of statistic, correlative and fractal parameters, characterizing phase distributions in laser images of bile specimens of patients with chronic cholecystitis associated with diabetes mellitus have given the following results. From findings obtained after laser images of bile excretion in patients of all groups and healthy people we could state that the most informative diagnostic value data to detect gallstone disease were dispersion, asymmetry, excess, which characterized phase allocation. There was defined further range of changes of statistical moments of 1-4 order of laser images of bile between the group of healthy people and investigated groups of patients: dispersion (increase in 1,5-2,1), asymmetry (increased in 3-16), excess (increased in3-12). The usage of statistical analysis of phase distribution in laser images of bile in case of different diseases made it possible to differentiate bile peculiarities in patients with comorbid pathology.

The model of formation of phase distribution in images of bile layers like process to coordinate modulation of laser ionization by bile liquid-crystal formations is suggested. Different variants of transformation of the latter in firm crystals (calculi) are analyzed. The most informative signs for early detection of cholelithiasis are dispersion, asymmetry, excess, which characterize phase distribution of laser image of bile. The usage of statistical analysis of phase images of bile in different types of pathology makes it possible to differentiate bile changes in patients with comorbid pathology.