

Biological diagnostic markers and pancreatic cancer risk factors in patients with chronic pancreatitis (literature review)

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Pancreatic cancer (PC) prevalence has steadily increased in recent years. It is untimely diagnosed due to prolonged asymptomatic course, minor changes in routine laboratory indices, lack of informative value of standard visualizing techniques. In this regard, attention is paid to determination of PC risk factors and establishment of biomarkers (diagnostic, prognostic, predictive) for pancreatic neoplastic transformation on the background of chronic pancreatitis.

Non-inherited PC risk factors include old age, smoking, chronic pancreatitis, Helicobacter pylori/hepatitis B virus infection, obesity, diabetes mellitus. PC family history, family adenomatous polyposis, carriage of mutant genes (PRSS1, SPINK1, BRCA2) dominate among hereditary risk factors. Biomarkers can be used not only for early non-invasive diagnosis of PC, but also for differential diagnosis between chronic pancreatitis and PC. Sensitivity and specificity of various PC serum markers, such as CA 19-9, PAM4, MIC-1, are analyzed in the article. It is possible to distinguish PC from autoimmune pancreatitis by determining the serum concentration of IgG4. In addition to blood serum, fecal masses (K-RAS, BMP3) and saliva (KRAS, MBD3L2, ACRV1 and DPM1) can be used to determine the potential markers of PC. New data of determination the fecal miRNAs as PC cancer biomarkers are presented, namely miR-21, miR-155 and miR-216. Majority of PC biomarkers have not been introduced into a routine clinical practice yet, and research on their informative value is ongoing.