

## Significance of mucin expression in pancreatic intraepithelial neoplasia (PanIN) – precursor lesions of pancreatic ductal adenocarcinoma (PDAC)

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### ABSTRACT

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**Purpose:** To evaluate chosen mucins (mucin 1, 4, 5AC) expression in pancreatic intraepithelial neoplasia, which is a precursor lesion of pancreatic ductal adenocarcinoma.

**Materials and methods:** The study group included 70 patients operated on due to inflammation, cysts and pancreatic ductal adenocarcinoma with pancreatic intraepithelial neoplasia revealed additionally. Mucin 1, 4 and 5AC expression was assessed by immunohistochemical method using polyclonal antibodies.

**Results:** Statistical analysis proved a positive correlation between the expression of mucin 1, 4 and 5AC proteins and the presence and staging of pancreatic intraepithelial neoplasia ( $p < 0.001$ ). Statistically significant correlations were determined between mucin 1, 4 and 5AC and the

location of PanIN lesion in the pancreas. Positive correlations were found between mucin 5AC expression and the type of a basic disease ( $p = 0.014$ ). Differences in the expression of MUC 1, 4 and 5AC proteins between healthy pancreatic ducts and various stages of pancreatic intraepithelial neoplasia were statistically significant ( $p < 0.001$ ).

**Conclusions:** Overexpression of mucin 1, 4 and 5AC is related to the presence of pancreatic intraepithelial neoplasia. This suggests that overproduction of mucus is a phenomenon occurring early in the process of carcinogenesis in the pancreas and has its beginning in precancerous lesions of an early stage.

**Keywords:** Mucin, immunohistochemistry, pancreatic intraepithelial neoplasia, PanIN