

The role of metabolic syndrome in the induction of chronic pancreatitis after a first attack of acute pancreatitis – multicenter trial

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Background: Metabolic syndrome is a serious societal problem worldwide. In the Czech Republic more than 30% of the adult population are sufferers. The role of recurrent acute pancreatitis in the induction of chronic pancreatitis, following the so-called „mechanistic definition“ of chronic pancreatitis, has been unequivocally confirmed. However, there are a number of factors that may contribute to the development of chronic pancreatitis. The first aim of the study was to determine whether the metabolic syndrome may affect the development of chronic pancreatitis. The second question we asked ourselves was whether even one acute attack of pancreatitis could be an inductive factor in chronic pancreatitis.

Methods: Based on data obtained retrospectively from a total of 264 people diagnosed with chronic pancreatitis in 4 centers, a total of 59 people (22.3%) diagnosed within 36 months of a first attack of acute pancreatitis was obtained. Etiologies of either genetically induced pancreatitis or autoimmune pancreatitis were excluded. Diagnostics to identify the presence of metabolic syndrome were run on the 59 persons so obtained using the criteria from the so-called „harmonized“ definition of 2009 (obesity, arterial hypertension, hypertriglyceridemia, type 2 diabetes mellitus and a decreased level of HDL cholesterol).

Results: Comparing the findings of the individual components of metabolic syndrome in persons with chronic pancreatitis after a 1st attack of acute pancreatitis with the metabolic syndrome and in persons with chronic pancreatitis after the 1st attack of acute pancreatitis but without metabolic syndrome, a statistically significant difference in obesity was found (82.5% vs. 28.5%), hypertriglyceridemia (82.3% vs 17.8%) and arterial hypertension (70.5% vs 21.4%). The interval during which chronic pancreatitis occurred after acute pancreatitis averaged 12 months (10–14 months) in subjects with metabolic syndrome, whereas in the group without metabolic syndrome the interval was longer, 20 months (16–29 months).

Conclusion: Our results show that even one attack of acute pancreatitis (regardless of etiology) can be an inductive factor in chronic pancreatitis. The presence of metabolic syndrome can accelerate the development of chronic pancreatitis after one has had acute pancreatitis.

Key words: acute pancreatitis, chronic pancreatitis, metabolic syndrome, obesity, hypertriglyceridemia, diabetes mellitus, hypertension, cholesterol.

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