

Effects of Acute Pancreatitis on Plasma Total and Lipid Bound Sialic Acid Levels: An Experimental Study in Rats

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Abstract

Background: We investigated the relationship between serum levels of total sialic acid, lipid bound sialic acid and acute pancreatitis in a rat model of a common bile duct ligation induced acute pancreatitis.

Methods: Twenty five Sprague-Dawley male rats weighing 250-300g were divided into two groups (n=10: control, n=15: experimental). In the control group only a sham laparotomy was performed. In the experimental group, acute pancreatitis was induced by common pancreatobiliary tract ligation. After 36 hours the rats were killed and amylase, serum total sialic acid, lipid bound sialic acid and lipid profiles were measured. Histopathological confirmation of acute pancreatitis was done using hematoxylin and eosin staining.

Results: Mean amylase, total sialic acid (TSA) and lipid bound sialic acid (LBSA) measurements in the experimental group were significantly higher than in the control group. There was no significant difference in the lipid profiles between the two groups.

Conclusion: Increased levels of TSA and LBSA can be useful as specific markers in the diagnosis of acute pancreatitis independent of serum lipid profile.

Key words: Acute pancreatitis, total sialic acid, lipid bounded sialic acid, lipid profile, experimental study

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