

## Effect of lithium chloride on cerulein-induced acute pancreatitis in mice

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**Background and Aims:** This study was carried out to investigate the anti-inflammatory effects of lithium chloride on a model of acute pancreatitis induced by cerulein in mice.

**Methods:** Acute pancreatitis was induced in mice by five intraperitoneal (i.p.) injections of cerulein (50 µg/kg) with 1h intervals. Different doses of lithium chloride (10, 20, 30 mg/kg) and normal saline (as control, 1 ml/kg) were administrated intraperitoneally, 0.5 h before pancreatitis induction in separate groups of male mice (n=6). Animals were sacrificed five h after last injection of cerulein and pancreatic tissue was removed. Blood samples were taken for amylase and lipase activity measurements and tissue injuries were assessed biochemically and pathologically.

**Results:** Lithium chloride reduced amylase and lipase activity in serum and myeloperoxidase activity in pancreas as well as pancreatic tissue inflammation significantly ( $P<0.05$ ) at the dose of 20 mg/kg. But intraperitoneal injection of lithium at doses of 10mg/kg and 30mg/kg did not significantly alter the degree of inflammation and serum lipase and amylase activity elevated in mice with pancreatitis.

**Conclusions:** These findings demonstrate that lithium marginally exhibits anti-inflammatory property in animal model of cerulein-induced acute pancreatitis and this effect is critically dependent to dose. This is in accordance with low therapeutic window of lithium activity and warranted more detailed studies to explore mechanisms of action are involved.

**Keywords:** Lithium chloride; Cerulein; Acute pancreatitis