Autor(en) des Beitrags:

Titel des Beitrags:
Prophylactic Glycine Administration Attenuates Pancreatic Damage and Inflammation in Experimental Acute Pancreatitis

Abstract:
Background/Aims: Acute pancreatitis (AP) is characterized by premature zymogen activation, systemic inflammatory response resulting in inflammatory infiltrates, sustained intracellular calcium, neurogenic inflammation and pain. The inhibitory neurotransmitter and cytoprotective amino acid glycine exerts a direct inhibitory effect on inflammatory cells, inhibits calcium influx and neuronal activation and therefore represents a putative therapeutic agent in AP.

Methods: To explore the impact of glycine, mild AP was induced in rats by supramaximal cerulein stimulation (10 µg/kg BW/h) and severe AP by retrograde injection of sodium taurocholate solution (3%) into the common biliopancreatic duct. 100/300 mmol glycine was administered intravenously before induction of AP. To elucidate the effect of glycine on AP, we determined pathomorphology, pancreatic cytokines as well as proteases, serum lipase and amylase, pancreatic and lung MPO activity and pain sensation. Results: Glycine administration resulted in a noticeable improvement of pathomorphological alterations in AP, such as a reduction of necrosis, inflammatory infiltrates and cytoplasmic vacuoles in cerulein pancreatitis. In taurocholate pancreatitis, glycine additionally diminished pancreatic cytokines and MPO activity, as well as serum lipase and amylase levels. Conclusions:
Glycine reduced the severity of mild and much more of severe AP by attenuating the intrapancreatic and systemic inflammatory response. Therefore, glycine seems to be a promising tool for prophylactic treatment of AP.

Stichworte: Glycine; Acute pancreatitis; Cerulein; Taurocholate

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