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Effects of Oral L-Glutamine, Insulin and Laxative on the Severity of Acute Pancreatitis

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Abstract: Aim: To investigate the effects of oral L-glutamine, insulin and laxative on the severity of acute pancreatitis. Materials and Methods: Forty adult male Sprague-Dawley rats were divided into 4 groups. Experimental pancreatitis was induced by ligating the main biliopancreatic duct. All groups were given standard rat pellets and tap water. In addition Group II was given 15 mg/kg/day of L-glutamine via a catheter enterally, Group III was given a 3 ml/day fleet enema via a catheter enterally, and Group IV was given 3 IU/kg/day of NPH insulin via a catheter enterally. The rats were sacrificed 96 hours after the induction of pancreatitis. Blood samples for biochemical analyses, and tissue samples from the lung and pancreas for histopathological evaluation were taken. Findings: Significant increases in amylase levels were observed after the procedure. Five parameters in the L-glutamine group (BUN, glucose, leukocyte, Po₂ and SGOT), 5 parameters in the laxative group (Amylase, BUN, glucose, LDH and SGOT), and 2 parameters in the insulin group (BUN and SGOT) were better than those in the control group. While necrosis was observed in 3 rats in the control group, 3 in the insulin group and in 1 in the laxative group in the histopathological evaluation of pancreas tissue, no rats in the L-glutamine group exhibited necrosis. More severe pancreatitis was observed in the control and insulin groups (p<0.05). Conclusion: L-glutamine, administered in enteral solutions in subjects with acute pancreatitis, will not increase the severity of pancreatitis, but will aid in meeting the energy demand of the subject. Laxative may also be employed in the removal of fecal mass during the early period of the disease.

Key Words: Acute Pancreatitis, L-glutamine, Laxative, Insulin, Pancreatic Necrosis, Prognosis

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