Turkish Journal of Medical Sciences

Turkish Journal

of

Medical Sciences

Effects of Oral L-Glutamine, Insulin and Laxative on Bacterial Translocation in Acute Pancreatitis

Fatih Mehmet AVŞAR[1]
İ. Hakan ÖZEL[1]
Mahmut BAYKAN[2]
Oral SAYGUN[1]
Mustafa ŞAHİN[3]
Süleyman HENGİRMEN[1]
Ömür ERTUĞRUL[2]
Mehmet GÜRBİLEK[4]
S. Neşe AYDIN[1]

[1]Department of First General Surgery, Ankara Numune Training and Research Hospital, Ankara, Departments of [2]Microbiology, [3]General Surgery and [4]Biochemistry, Faculty of Medicine, Selcuk University, Konya - TURKEY

Keywords
Authors

medsci@tubitak.gov.tr

Scientific Journals Home Page

Abstract: Aim: To investigate the effects of oral L-glutamine, insulin and laxative on the bacterial population of intestinal lumen and on bacterial translocation in acute pancreatitis. Materials and Methods: Forty Sprague-Dawley adult male rats were divided into 4 groups. Experimental pancreatitis was induced by ligating the main biliopancreatic duct. All groups were given the standard rat diet and tap water. In addition, Group II was given. 15 mg/kg/day of L-glutamine via a catheter enterally, Group III was given 3 ml of laxative 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 blood culture, and culture samples from mesenteric lymph nodes, liver and spleen and from cecal content were taken. Aerobic and anaerobic cultures were prepared. Findings: Amylase levels in all the groups after the procedure increased significantly. Bacterial translocation was observed in 6 rats in the control group, in 5 rats in the insulin group, in 3 rats in the laxative group and in 2 rats in the L-glutamine group. A significant decrease in the number of luminal bacteria was observed in the laxative and L-glutamine groups. Conclusion: L-glutamine, administered in enteral solutions in rats with induced acute pancreatitis, may reduce septic complications by decreasing the bacterial translocation rate. Similar effects are also produced by laxatives through reduction in the luminal bacterial population.

Key Words: Acute pancreatitis, Bacterial translocation, Sepsis, L-glutamine, Laxative, Oral insulin

Turk J Med Sci 2001; **31**(4): 297-301.
Full text: pdf
Other articles published in the same issue: Turk J Med Sci,vol.31,iss.4.