

Assessment of intestinal permeability using polyethylene glycol in liver cirrhosis

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Background/Aim : Increased intestinal permeability and endotoxemia have been implicated in pathogenesis and progression of chronic liver diseases and as contributory factors in the development of encephalopathy and bacterial infections in liver cirrhosis. The aim of this study was to determine whether intestinal macromolecular permeability using polyethylene glycol (PEG) is altered in cirrhotics. **Method :** In total 53 cirrhotics and age- and sex- matched 26 healthy controls were studied. The intestinal permeability value is expressed as the percentage of PEG 400 and 3350 retrieval in 8hr urine samples by high performance liquid chromatography. The intestinal permeability index (IPI) is an expression of the PEG 3350 relative to PEG 400. **Results :** The causes of liver cirrhosis were alcohol 31, HBV 14, HCV 7 and alcohol combined with HBV 1. Mean values for PEG 400 and 3350 retrieval were 46.5 ± 3.22 and 0.24 ± 0.03 in controls, 44.1 ± 5.17 and 0.21 ± 0.02 in cirrhotics without ascites and 37.4 ± 3.55 and 0.31 ± 0.04 in cirrhotics with ascites respectively. IPI were different in patients from healthy controls and cirrhotics without ascites, being significantly higher in cirrhotics with ascites (0.52 ± 0.05 and 0.53 ± 0.03 vs. 0.88 ± 0.12 , $p < 0.05$). A subanalysis relating intestinal permeability to severity of liver cirrhosis for all patients as indicated by the Child-Pugh class showed significant differences between class A, B and C in PEG 3350 and IPI ($p < 0.05$). According to subanalysis relating IPI to encephalopathy, hypoalbuminemia, there were significant differences ($p < 0.05$), but not for prolonged prothrombin time, esophageal varix or hyperbilirubinemia. **Conclusion :** Our results suggest that increased intestinal macromolecular permeability is probably of importance in the pathophysiology and progression of cirrhotics with ascites, and in some extent, these may play any role in predisposing to encephalopathy.

Ultrasonographic fatty pancreas: relationships to clinical and metabolic characteristics of fat infiltration of pancreas

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Objective : The clinical meaning of fatty pancreas is controversial. Some authors suggest increased fat infiltration of pancreas, so called 'fatty pancreas', are associated with metabolic syndrome, and obesity, while few data support this hypothesis. The aim of the present study was to investigate the relationship of fatty pancreas with metabolic syndrome and body fat distribution. **Patients and Methods :** The subjects consisted of 408 non-diabetic men and women aged 17 to 79 years. Fatty pancreas was defined by increased contrast of the pancreas compared with the renal parenchyma, all sonographic findings was blinded and evaluated by one radiologist. Demographic, biochemical and antropometric measurements were done. Body fat distribution was divided four components (visceral, subcutaneous abdominal, thigh intermuscular, and subcutaneous fat), and measured by computed tomography. **Results :** In univariate analysis, fatty pancreas group showed higher total abdominal and visceral fat area, ALT, AST, cholesterol, free fatty acid, insulin level, and HOMA-IR than control group ($p < 0.05$, respectively). However fasting glucose level was not different between two groups. In logistic regression analysis, HOMA-IR and visceral fat area were independently associated with fatty pancreas after adjusting with age, fasting glucose, BMI, free fatty acid, and total cholesterol level. Among the 123 metabolic syndrome patients 98 patients (79.7%) patients showed fatty pancreas. According to increase the number of metabolic components, percent of fatty pancreas was also increased ($p < 0.05$). **Conclusion :** Fatty pancreas was strongly associated with central obesity and hyperinsulinemia and increased in presence of the metabolic syndrome.