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Impaired tuftsin activity in cirrhosis: relationship with splenic function and clinical outcome.

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Abstract

BACKGROUND: Cirrhotic patients show increased susceptibility to bacterial infections. It is not known whether tuftsin deficiency, which is associated with an increased incidence of infections in many disease states, is present in cirrhosis. Our aims were to determine whether tuftsin activity is deficient in cirrhosis and if so, whether this deficiency is related to splenic function, contributes to altered neutrophil granulocyte function, or influences the occurrence of bacterial infections and patient survival.

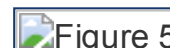
METHODS: Tuftsin activity and splenic function were assessed in 31 patients with liver cirrhosis and 31 healthy subjects. The phagocytic activity of neutrophil granulocytes from 23 patients was tested in vitro with addition of both autologous and pooled sera from healthy subjects. In 10 patients and eight controls it was also tested with addition of synthetic tuftsin. Patients were followed up until death or liver transplantation.

RESULTS: Patients had reduced tuftsin activity (median 8% (range 3-24.5)) compared with controls (17% (11.5-37)) ($p < 0.001$) and a higher pitted red cell count ($p < 0.001$). Tuftsin activity was correlated with pitted cell count ($p = 0.02$) and the Child-Pugh score ($p = 0.002$). Nineteen of 23 patients showed deficient phagocytic activity of neutrophil granulocytes, which was correlated with tuftsin activity ($p < 0.001$), improved in all cases but one with addition of serum from healthy subjects, and normalised with addition of synthetic tuftsin. Reduced tuftsin activity did not influence patient survival but was associated with a higher incidence of bacterial infections ($p = 0.029$).

COMMENT: Tuftsin activity was reduced in cirrhosis, and contributed to impaired phagocytic activity of neutrophil granulocytes. Such an abnormality appears to be related to impaired splenic function and severity of cirrhosis, and probably favours the occurrence of bacterial infections.

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