Prospective study of plasma fibronectin in fulminant hepatitis: association with infection and mortality

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Abstract:

BACKGROUND/AIMS: Plasma fibronectin is an opsonic glycoprotein, normally synthesized by the liver, which decreases subsequent to severe liver damage and low levels of which may contribute to reticuloendothelial system dysfunction by compromising opsonic activity. This may result in an increased frequency of infection and death. The present study was conducted to evaluate the association of plasma fibronectin activity with infection and mortality in patients with fulminant hepatic failure. METHODS: Plasma fibronectin was estimated serially in 69 consecutive patients with fulminant hepatic failure, nine patients with uncomplicated acute viral hepatitis and 32 normal volunteers. RESULTS: Plasma fibronectin levels in patients with fulminant hepatic failure (85.6 +/- 75.8 micrograms/ml) were significantly lower than in patients with uncomplicated acute viral hepatitis (295.5 +/- 88.5 micrograms/ml) and healthy volunteers (362.6 +/- 69.2 micrograms/ml). Forty-nine (72%) patients with fulminant hepatic failure died. The initial values of fibronectin in fulminant hepatic failure did not correlate with mortality. Patients with fulminant hepatic failure who survived showed a progressive rise in the fibronectin levels compared to the absence of an increase in fibronectin levels in the non-survivors. The mortality in patients with fulminant hepatic failure with infection (24/27) was significantly higher ($p < 0.05$) compared to those without infection (25/42). Initial fibronectin levels in patients with infection (70.3 +/- 54.2 micrograms/ml) were significantly lower ($p < 0.05$) than in those without infection (92.3 +/- 64.4 micrograms/ml). We conclude that plasma fibronectin levels in patients with fulminant hepatic failure are decreased compared to healthy subjects and the absence of an increase in levels indicates a poor prognosis. Low levels of fibronectin are associated with an increased incidence of infection, which increases the mortality in these patients.