MANAGEMENT OF VIRAL HEPATITIS-RELATED FULMINANT HEPATIC FAILURE

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Fulminant hepatic failure (FHF) implies a catastrophic insult to a previously healthy liver that leads to liver failure manifest by a coagulopathy and encephalopathy within 12 weeks of the onset of jaundice. In almost all cases this implies that the infection is recently acquired but it is now accepted that chronic carriers of hepatitis B virus (HBV) without pre-existing established liver disease should be included within this definition. The main viral causes of FHF are hepatitis A, B (+D) and E. Hepatitis C, Epstein virus, herpes simplex and cytomegalovirus are unusual causes.

Specific therapeutic intervention is only available for hepatitis B and herpes simplex hepatitis. Fulminant hepatic failure associated with hepatitis B may occur against the background of surges in viral replication (manifest by high HBV DNA levels), either occurring spontaneously or in the context of exposure to immunosuppressive therapy or chemotherapy. In this situation, rapid control of viral replication is essential using a drug that rapidly suppresses viral replication e.g. lamivudine. *De novo* infection with hepatitis B usually causes FHF as a consequence of aggressive immunological clearance of the virus and many of these patients are HBV DNA negative at the time of presentation and as such will not benefit from lamivudine. However, empirical therapy should be considered until the HBV DNA level is established. Similarly, patients developing FHF in the context of HBeAg to HBeAb are not expected to benefit from lamivudine or other anti-virals.

Liver transplantation is a strategic component of the management of the patients with viral-induced FHF. About 30% of patients with hepatitis A and 60% of patients with hepatitis B would be expected to benefit from liver transplantation. A number of prognostic models have been devised to identify those who would benefit from transplantation including parameters such as age, coagulation data, serum bilirubin, alpha-fetoprotein and rate of progression of the disease (paradoxically a rapid progression is associated with a better prognosis). Survival rates after liver transplantation for FHF range between 70-85% in most series. The current role of liver assist devices appears to be mainly in bridging patients to transplantation rather that to 'transplant-free' survival.

Whether the patient with viral FHF is being managed 'conservatively' or with liver transplantation, the management plan must include monitoring and intervention for a range of complications that ultimately can amount to total body failure. The majority of deaths are caused by neurological complications or circulatory failure in association with sepsis (bacterial or fungal) or SIRS. Renal failure occurs in about 30% of cases. Respiratory compromise and a range of metabolic abnormalities are also common.

Time is of the essence in the management of FHF with a need for early and accurate diagnosis, assessment of prognosis and construction of an overall management plan. However, with optimal management the prospects of recovery are significant and belie the pessimism portrayed by the term fulminant hepatic failure.