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Results of liver transplantation in acute liver failure caused by viral hepatitis

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Abstract Fulminant liver failure due to acute viral hepatitis is the most common emergency indication for liver transplantation. The postoperative course is highly correlated with the type and duration of infection. The complication rate is lowest in fulminant

hepatitis B patients and highest in subacute hepatitis C/NANB patients.

Key words Liver transplantation
Acute liver failure · Viral hepatitis
Complications

Introduction

Fulminant virus infections (hepatitis B, hepatitis C/NANB) are the most common causes of acute liver failure [3] for which the only possible treatment is a liver transplantation [2, 4]. The postoperative course is a major problem in these cases and closely linked to the incidence of postoperative complications. We investigated the influence of both the type of viral agent and the duration of infection on the course and prognosis after liver grafting.

Patients and methods

From September 1988 until September 1993 430 orthotopic liver transplantations were performed on 386 patients. 24 of these, were performed in cases of acute liver failure due to viral hepatitis. Eight

patients had fulminant hepatitis B, nine patients had fulminant hepatitis C/NANB and seven patients had a subacute liver failure due to hepatitis C/NANB with hospitalization for 6 weeks (Table 1).

The postoperative courses were studied retrospectively. The mean follow up was 780 days (range 24–1848 days). Comparisons between the groups were made using median values and Kruskal-Wallis and Chi-squared tests (postoperative course).

Results

The overall survival rate was 87.5%.

Hepatitis B-induced, acute liver failure

The postoperative course was relatively uncomplicated and the survival rate was 100% (Table 2).

Table 1 Status prior to liver transplantation

	Fulminant B	Fulminant C/NANB	Subacute C/NANB
Encephalopathy (grade)	3.5	3.5	2.4
TPT (Quick) (min/max)	16/31	14/30	18/33
Bilirubin (mg/dl)	23	31	46
Mechanical ventilation	75%	67%	43%
Renal failure	13%	44%	0

Table 2 Postoperative course

	Fulminant B	Fulminant C/NANB	Subacute C/NANB
Days in ICU *	14	28	42
Severe infection *	13%	44%	100%
Pancreatitis *	0	0	43%
Dialysis *	0	56%	43%
GI tract complication *	0	22%	71%
Cholestatic syndrome *	0	33%	57%
Rejection	38%	33%	86%
Mortality *	0	11%	29%

* $P < 0.05$

Hepatitis C/NANB-induced acute liver failure

The postoperative course was more complicated than in the cases of hepatitis B, not only in relation to the time in intensive care, but also to the appearance of severe infections, the necessity for postoperative dialysis and complications of the gastrointestinal tract (Table 2). In 33% of cases rejection was observed. In one case OKT3 failed to check the rejection leading to graft failure and retransplantation. The postoperative mortality was 11%.

Hepatitis C/NANB-induced subacute liver failure

This group displayed the most difficult postoperative progress. Typical were long stays in intensive care and high incidences of severe infections, pancreatitis and complications to the gastrointestinal tract, such as ulcers and bleeding. In 86% of the cases, symptoms of rejection calling for treatment occurred. The survival rate was 71% (Table 2).

With respect to differential diagnosis, it was difficult to interpret the appearance of a cholestatic syndrome in 57% of patients. This syndrome appeared mostly from the third week after transplantation and was marked by a persistent increase in the cholestatic parameters without

evidence of cholangitis and only slightly higher transaminase levels. Possible differential diagnoses were a cholangitis, cholestatic rejection or graft reinfection. A therapeutic decision under these circumstances had extensive consequences, since inadequate rejection therapy can lead to graft loss, but to vigorous therapy can encourage severe infections.

Discussion

Liver transplantation has led to encouraging results in patients with acute liver failure caused by viral hepatitis. Other medical centres have also reported such results [1]. The postoperative course was highly correlated with the type (hepatitis B or hepatitis C/NANB) and duration (acute or subacute) of infection. The complication rate was lowest in fulminant hepatitis B patients and highest in subacute hepatitis C/NANB patients. For subacute liver failure, these differences may have been related to the longer course of illness and possible secondary organ damage. A great problem with the C/NANB infection was cholestatic syndrome, which created substantial differential diagnostic difficulties. This syndrome was not observed after any transplantation necessitated by fulminant hepatitis B.

References

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