

LETTER TO THE EDITOR

Reevaluating Liver Transplantation in Acute Liver Failure: The Case for Medical Management in Paracetamol-Induced Injury

To the Editor:

In a recently published article in *Critical Care Medicine*, Wang et al (1) presented important insights. While the work is commendable, several points merit further discussion. In the *Discussion* section, plasma exchange was highlighted as a promising treatment for acute-on-chronic liver failure patients awaiting liver transplantation or experiencing spontaneous regeneration, supported by strong evidence (level A) (1). This discussion can be further expanded.

An article by Kumar et al (2) emphasized that high-volume plasma exchange therapy (HV-PET), defined as an exchange of 8–12% or 15% of ideal body weight with fresh frozen plasma, has been shown to improve survival in acute liver failure (ALF) patients (3). In a randomized controlled trial ($n = 182$), Larsen et al (3) demonstrated that HV-PET improves survival in ALF patients by 10% compared with standard medical therapy (58.7% vs. 47.85%) (3). A recent meta-analysis including three studies on ALF also reported improved outcomes with HV-PET (4).

According to the approach outlined in Kumar et al (2), the most significant determinant of transplant-free survival in ALF patients is the etiology of liver injury. Causes with favorable transplant-free survival include paracetamol (75%), hepatitis E virus (56%), hepatitis A virus (56%), and ischemic liver injury (74%) (2). Survival rates in acetaminophen-associated ALF have become comparable to post-transplant survival rates.

A prospective cohort study including 2070 ALF patients over 16 years from 31 transplant centers in the United States showed that 21-day transplant-free survival rates improved significantly over time. The survival rate was 45.1% from 1998 to 2005 and increased to 56.2% between 2006 and 2013 (5). While improved survival with medical therapy has reduced the need for emergency liver transplantation in many ALF patients, identifying those who cannot survive without transplantation remains a clinical challenge.

In conclusion, the prognosis of acetaminophen-associated ALF has significantly improved, with survival rates now approaching those achieved through liver transplantation. Given the high costs, surgical risks, and lifelong immunosuppression associated with transplantation, careful patient selection is essential to ensure that this intervention is reserved for those who are unlikely to recover with medical therapy alone. The development of advanced supportive treatments such as HV-PET has further reduced the necessity for emergency liver transplantation in selected cases. In particular, ALF resulting from paracetamol intoxication, with a transplant-free survival rate of approximately 75%, warrants thorough evaluation before proceeding to transplantation.

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Optimizing clinical decision-making in these patients can help avoid unnecessary procedures while ensuring appropriate use of limited donor organs.

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