

# Viral Hepatitis and Acute Liver Failure: Still a Problem



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## KEYWORDS

• Viral • Hepatitis • ALF • Reactivation • HBV • HDV • HEV • Problem

## KEY POINTS

- Acute liver failure (ALF) is a syndrome rather than a specific disease with several possible causes, including drug overdose, viral hepatitis, ischemia, trauma, and other causes.
- Each cause has a different clinical course and outcomes.
- The liver has the capacity to often recover after such insults; however, predicting outcomes is often a challenge.
- Understanding the cause of ALF is important for clinical management.

## INTRODUCTION

Viral hepatitis remains a major cause of acute liver failure (ALF) in the world. ALF is an unpredictable and severe condition associated with high mortality in the absence of intensive care, treatment, and often liver transplantation. ALF is defined by the American Association for the Study of Liver Disease as the presence of encephalopathy and evidence of coagulopathy with international normalized ratio (INR) of greater than or equal to 1.5 without evidence of preexisting cirrhosis and with duration of symptoms for less than 26 weeks. There are various classification systems that are used to grade ALF ([Table 1](#)).

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Variables	Clichy	King's College	Japanese
Age	✓	✓	✓
Cause	—	✓	—
Encephalopathy	✓	✓	✓
Bilirubin	—	—	✓
Coagulopathy	✓	✓	✓

## VIRAL HEPATITIS: EPIDEMIOLOGY AND PATHOGENESIS

The primary cause of ALF has rapidly changed worldwide. Historically, hepatitis A and B were regarded as the most common causes of ALF.<sup>1,2</sup> In the 1960s, hepatitis A and B were responsible for nearly three-quarters of all cases of ALF. Over the last 3 decades, there has been a decline in viral hepatitis in the developed world, especially hepatitis A and B, as causes of ALF.<sup>3,4</sup> Currently, according to the US ALF Group Registry, drug-induced liver injury (DILI), particularly acetaminophen, account for more than 50% of ALF cases in this country. Indeterminate causes account for 14% of cases, with autoimmune, viral, and other rare causes accounting for the remaining cases<sup>5</sup> (Fig. 1). Northern Europe and the United Kingdom have similar statistics as the United States.<sup>2</sup> This dramatic change is a reflection of the impact of public health initiatives that have reduced the incidence of new cases of acute viral hepatitis. In addition, improved vaccination programs as well as better control of blood products have impacted this change.<sup>5</sup>

Despite the trend, hepatitis A and B are still responsible for nearly 10% of all cases of ALF in the United States.<sup>4</sup> An additional 2% of cases are thought to be secondary to hepatitis E, with rare cases including Epstein-Barr, herpes simplex and zoster, cytomegalovirus (CMV), and adenovirus.<sup>3,4</sup> Globally, viral causes of ALF remain a major contributor. Viral hepatitis infections are responsible for most ALF cases worldwide, with high incidence in Asian countries, several European countries, and the developing world. Hepatitis E, for example, is responsible for nearly one-half of all cases of ALF reported in India, with similar numbers in Bangladesh.<sup>5</sup> Greater than 40% of ALF cases in Japan are due to hepatitis B. Hepatitis B virus (HBV) also remains the most common

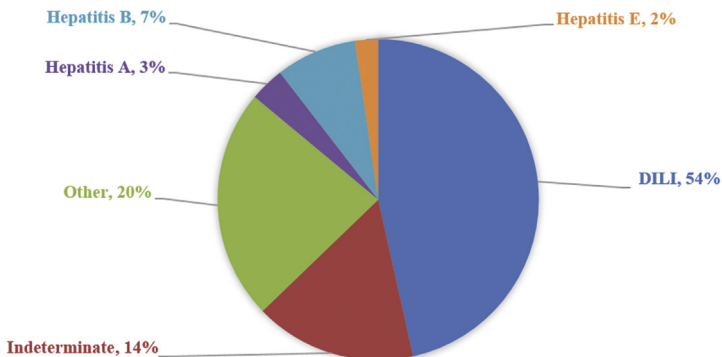


Fig. 1. The breakdown of ALF causes.

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