Clinical characteristics of liver failure from a systemic cause: A report from an advanced critical care center

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ABSTRACT

Background/Purpose. In Japan, acute liver failure (ALF) has generally been described using the diagnostic term, “fulminant hepatitis,” because of the fact that most cases of ALF have been thought to occur in association with hepatitis mainly due to a hepatitis virus infection. New diagnostic criteria for ALF, including ALF other than fulminant hepatitis, were established in 2011. We therefore examined the prognostic factors of patients with liver failure from a systemic cause, including warfarin users.

Material and methods. Sixty-six patients with ALF that were diagnosed according to the Japanese diagnostic criteria for ALF between 2009 and 2013 were divided into a survivor group and a non-survivor group. The data regarding demography, liver tests, coagulation tests, Sequential Organ Failure Assessment (SOFA) scores, and the use of oral warfarin or aspirin were compared between the two groups.

Results. The SOFA score was significantly higher in the non-survivor group (p = 0.025). The proportion of oral warfarin users was significantly higher in the survivor group (p = 0.013) (58.1% vs. 26.1%). A multivariate logistic regression analysis showed the SOFA score (odds ratio: 0.851, 95% confidence interval (CI): 0.728-0.995, p = 0.043) and warfarin use (odds ratio: 3.261, 95% CI: 1.028-10.347, p = 0.045) to be significant factors that were negatively and positively associated with the prognosis, respectively.

Conclusion. In this study, among the patients with ALF other than fulminant hepatitis, those with a high SOFA score on admission exhibited a poor prognosis. In addition, oral warfarin use prior to disease onset was found to be a factor which indicated a good prognosis.

Key words. Diagnostic criteria for acute liver failure. Disseminated intravascular coagulation (DIC). Prognostic factors. Sequential Organ Failure Assessment (SOFA) score. Warfarin.

INTRODUCTION

In Japan, most cases of acute liver failure (ALF) are thought to be due to hepatitis, primarily caused by viral infections; therefore, ALF has traditionally been represented by the diagnostic term, “fulminant hepatitis,” which includes cases of ALF resulting from viral hepatitis, drug allergies and acute-onset autoimmune hepatitis.1 Worldwide, however, ALF is generally considered to constitute a liver failure syndrome caused by any form of acute liver injury, regardless of the pathological mechanism.2 In order to adjust for this discrepancy, the Intractable Hepato-biliary Disease Study Group of Japan established a new set of diagnostic criteria for ALF, which include cases of ALF other than fulminant hepatitis, in 2011.3 However, the clinical characteristics and prognosis of forms of ALF other than fulminant hepatitis remain unclear, as national surveys in Japan focused on fulminant hepatitis prior to 2011.

The diagnostic criteria for ALF are usually not applied in warfarin users because the prothrombin time is prolonged, regardless of the presence or absence of liver dysfunction, in such patients. However, ALF patients treated with warfarin should be precisely evaluated, as a substantial number of warfarin users have ALF due to the increasing number of patients with atherosclerotic and/or chronic heart disease.4

The present study aimed to elucidate prognostic factors among patients with liver failure from a systemic cause, including warfarin users, transported to our advanced critical care and emergency center.