A Case of Severe Acute Hepatitis A Complicated with Pure Red Cell Aplasia

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Hepatitis A is a typically self-limited acute illness that does not progress to chronic hepatitis. In rare cases, acute hepatitis A can be associated with serious complications (such as fulminant hepatitis or acute kidney injury) and may result in death or liver transplantation. Pure red cell aplasia (PRCA) is a rare hematologic disorder characterized by anemia, reticulocytopenia in the blood, and isolated erythroblastopenia with normal granulopoiesis and megakaryopoiesis in the bone marrow. PRCA is a rare hematopoietic complication of acute viral hepatitis, and few cases associated with hepatitis A virus infection have been reported. Recently, we experienced a case of severe hepatitis A complicated by fulminant hepatitis and acute kidney injury followed by PRCA which showed a favorable response to oral corticosteroids. (Korean J Gastroenterol 2012;60:177-181)

Key Words: Hepatitis A; Severe hepatitis; Pure red-cell aplasia

INTRODUCTION

Hepatitis A infection is caused by HAV, which is transmitted through the fecal-oral route. The incidence of adult hepatitis A has recently been increasing in Korea. The clinical manifestations of HAV infection depend on patient age: HAV infection is usually asymptomatic in children, while about 80% of infected adults experience severe hepatitis with remarkably elevated serum aminotransferases. Hepatitis A is most often a self-limited acute illness and does not progress to chronic hepatitis. In rare cases, however, acute hepatitis A is associated with serious complications such as fulminant hepatitis and acute kidney injury and may ultimately result in death or liver transplantation. In addition, hepatitis A is associated with various extrahepatic manifestations, such as hematologic abnormalities, pleural or pericardial effusion, acute reactive arthritis, acute pancreatitis, acalculous cholecystitis, mononeuritis, and Guillain-Barré syndrome. Pure red cell aplasia (PRCA) is a rare cause of anemia characterized by the absence of erythroid precursors in the bone marrow without changes in other cell lineages. Patients have severe anemia, low reticulocyte count, and normal platelet and granulocyte counts. PRCA is classified as acute or chronic and can be congenital or acquired. The acute form of PRCA is secondary to a virus- and drug-induced impairment of erythroid progenitor cells. The acquired chronic form of PRCA is associated with thymomas, lymphoproliferative disorders, autoimmune disorders, and immunocompromised states. PRCA is a rare hematopoietic complication of acute viral hepatitis, with very few reported cases of PRCA asso-
associated with HAV infection. Here, we report on our recent experience with a case of severe hepatitis A complicated by fulminant hepatitis and acute kidney injury followed by PRCA that showed favorable response to oral corticosteroids.

CASE REPORT

A 39-year-old previously healthy woman was transferred to our hospital due to worsening jaundice, oliguria, and encephalopathy. She had been admitted to another hospital with general weakness and jaundice. The interval between the onset of jaundice and encephalopathy was 5 days. She had no known history of previous liver disease, heavy alcohol use, toxic agent exposure, or herbal medicine intake.

Vital signs were as follows: blood pressure 130/80 mmHg, pulse rate 86 beats/min, respiratory rate 20/min, body temperature 38.1°C. Physical examination showed generalized icterus, mild pretibial edema, and no hepatosplenomegaly. She had grade III hepatic encephalopathy with marked confusion and incoherent speech. She spent most of the time sleeping but could be aroused by vocal stimuli.

Laboratory tests on admission were as follows: hemoglobin (Hb) 11.6 g/dL, mean corpuscular volume 86.4, white blood cell (WBC) count 12.100/mm³, platelet count 98,000/mm³, erythrocyte sedimentation rate 25 mm/hour, CRP 23.5 mg/L, PT INR 1.56, AST 2,457 IU/L, ALT 4,176 IU/L, ALP 629 IU/L, GGT 430 IU/L, total bilirubin 4.1 mg/dL, direct bilirubin 3.2 mg/dL, total protein 6.1 g/dL, albumin 3.2 g/dL, ammonia 117 μmol/L (N: 11-32), cholesterol 97 mg/dL, glucose 136 mg/dL, BUN 93.5 mg/dL, creatinine 9.4 mg/dL, CK 841 IU/L (N: 32-187), LDH 1,111 IU/L (N: 218-472). Anti-HAV IgM and anti-HAV IgG were positive. Serological results for hepatitis B virus, hepatitis C virus, hepatitis E virus, human immunodeficiency virus, cytomegalovirus, and Epstein-Barr virus were negative. Serum copper and ceruloplasmin levels were normal. Anti-nuclear antibody, anti-dsDNA, anti-liver kidney microsome-1 antibody, and anti-smooth muscle antibody were negative. Urinalysis was notable for dark-colored urine with 1+ bilirubin, 3+ blood, and 1+ proteinuria. A chest roentgenogram initially showed mild pulmonary congestion, and abdominal ultrasonography was unremarkable.

On the basis of the history and laboratory findings, acute viral hepatitis A complicated by acute kidney injury and fulminant hepatitis was diagnosed. She was admitted to the intensive care unit. Urine output was less than 30 mL/hour and did not increase with furosemide administration. With supportive care and close monitoring of hemodynamic and renal parameters, continuous renal replacement therapy was initiated. On the 5th hospital day, she was alert, and urine output had improved to within normal limits. Therefore, renal replacement therapy was stopped. On the 18th hospital day, despite improvements in serum AST, ALT, and creatinine levels, she showed a marked increase in bilirubin levels (total 19.4 mg/dL, direct bilirubin 14.4 mg/dL). In addition, Hb decreased to 6.9 g/dL with 0.14% reticulocytes; WBC and platelet counts were within normal limits. Peripheral blood smear

![Fig. 1. Photomicrographs of bone marrow aspirate (A, Wright-Giemsa stain, x400), and bone marrow biopsy (B, H&E, x400) showing hypoplasia of erythroid precursors with normal myeloid and megakaryocytic cells.](image-url)