Acute Hepatitis C Infection with Unclear Route of Transmission

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ABSTRACT

A 43-year old man acquired acute hepatitis C virus (HCV) infection with unclear route of transmission. There were no known sexual or other risk factors for HCV acquisition. Phylogenetic analysis confirmed that the case was infected with identical genotype 1b strain. After symptomatic treatment for three weeks, the HCV was spontaneously cleared and liver function recovered.

Keywords: Acute hepatitis C, spontaneous clearance, transmission

INTRODUCTION

Hepatitis C virus (HCV) is a blood-borne pathogen and is estimated to affect 170 million people worldwide. Transmission of HCV occurs via blood-to-blood contact and is commonly associated with injecting drug use, blood transfusions and healthcare procedures. According to the literature, the proportion of patients with acute hepatitis C evolving into chronic hepatitis or asymptomatic carriers of hepatitis C virus is high (approximately 60–85%). Furthermore, chronic hepatitis C can gradually develop into cirrhosis and/or hepatocellular carcinoma. Meanwhile, both the domestic and international treatment guidelines recommend antiviral therapy at the early stage of acute hepatitis C because spontaneous clearance is considered to be extremely low. The treatment strategy of acute hepatitis C, with significant symptoms and signs, indicating activation of the immune mechanism might be different (1–4). A case of acute hepatitis C with evidence of spontaneous recovery is described in this report.

CASE REPORT

A 43-year old man presented to the Department of Infectious Diseases, the First Affiliated Hospital of Anhui Medical University, in June 2010 with a one-week complaint of severe tiredness, nausea, loss of appetite, dark urine, jaundice and pruritus. After admission, his liver function tests were noted to be significantly abnormal (ALT 1858 U/L, AST 1257 U/L, GGT 230 U/L, total bilirubin 210.51 µmol/L and direct bilirubin 142.76 µmol/L) having been normal in February 2010. Serological testing for hepatitis A, hepatitis B, hepatitis E viruses and other liver viruses (eg cytomegalovirus, Epstein-Barr) showed no evidence of recent or past infection, but HCV antibody and nucleic acid polymerase chain reaction (PCR) testing were positive, with HCV viral load of $6.63 \times 10^7$ copies/ml. Phylogenetic analysis confirmed the case was infected with identical genotype 1b strain. The patient received symptomatic and supportive treatment for liver dysfunction but not with highly active antiretroviral therapy because of financial constraint. Repeat tests three weeks later showed normal ALT and
bilirubin level (Table). Hepatitis C virus antibody was positive and HCV-RNA was not detectable by nucleic acid PCR. Liver function tests were continuously normal on follow-up for three months. Moreover, HCV antibody was still positive and the level of HCV-RNA remained below the quantitation limit for the next six months (December 2010).

The patient denied any history of intravenous drug use, tattooing, blood transfusion (including blood products), major operations, tooth extraction, previous clinical hepatitis or sexually transmitted infection. He denied sharing toothbrushes or razors with other people. The patient’s family was tested for HCV infection. Hepatitis C virus antibody and nucleic acid PCR testing were negative. He had a chronic alcohol intake of 100 g per day, increasing to 150–160 g per day prior to this infection. He was not a cigarette smoker and had not been sexually active for the previous two months. The patient underwent laparoscopic cholecystectomy in September 2006. Hepatitis C virus antibody was negative before and six months after operation.

**DISCUSSION**

The clinical course of most cases of acute hepatitis C shows acute non-icteric hepatitis, which presents with occult onset of infection, easily evolving into chronic hepatitis or asymptomatic carriers, and, rarely, with a self-limiting clinical course. In this case, no significant routes of transmission were detected in this patient. After symptomatic treatment for nearly one month, the HCV spontaneously cleared and liver function recovered. This case highlights that at acute onset, significant signs and symptoms possibly indicate that the immune mechanism is activated leading to the virus being spontaneously cleared, which suggests the tendency to self-healing. Therefore, in the early onset of acute hepatitis C, antiretroviral therapy (interferon-alpha plus ribavirin) could be delayed and the patient followed clinically. This could reduce the financial burden on patients and society. In some reports, about 52% of patients might emerge with spontaneous HCV clearance within three months of onset (5). If there is no spontaneous HCV clearance in this period, the patients can then start antiretroviral treatment. Furthermore, the delay of antiretroviral therapy does not affect the rate of sustained virological response. Moreover, other routes of transmission should be searched for apart from transfusional or heterosexual transmission in order to prevent transmission and reduce infection. The 1b genotype of HCV is prevalent in transmission from blood, and 92% of patients with 1b genotype will progress to chronic hepatitis C (6–8). However, it should be noted that the clinical course of the infection in this case shows spontaneous clearing of the virus even though it was of the 1b genotype with an uncertain route of transmission.

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**REFERENCES**


