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Original Article

A Clinical Report of Adult Acute Viral Hepatitis Type A Treated with Herbal Prescriptions

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Owing to improvement of socioeconomic status during recent decades in Korea, incidence of hepatitis A has rapidly decreased, especially among children. However, this status has paradoxically caused a steady increase of adult patients with HAV infection, causing new medical issues associated with aggravated clinical symptoms. The present study reports an adult case of acute viral hepatitis type A treated with oriental medicine. The elevated biochemical findings(AST, ALT, gamma-GTP, bilirubin), physical symptoms (general weakness, nausea, right flank pain, itching sign), and serological makers (anti-HAV IgM and anti-HAV IgG) were normalized within four weeks. Also, sonographic examination showed a normal pattern on an enlarged liver image. This study informed us about the clinical capacity of oriental medicine for adult patients with acute viral hepatitis type A.

Key Words : Hepatitis, hepatitis type A, oriental medicine, herbs

Introduction

Viral hepatitis is major global public health concern, showing substantial morbidity and mortality around the world. This disease is presumably what was described as "jaundice" in ancient documents of China, Greece and Rome [1]. There are different forms of viral hepatitis depending on virus specie, whose primary site of replication is the liver. Of those, hepatitis A was first termed by Krugman in 1967, and, hepatitis A virus (HAV) was identified in 1973, soon followed by development of diagnostic tests, cell culture-based propagation, and vaccine[2-4]. Its transmission is primarily through fecal-oral route, so the endemicity of HAV infection varies according to regional hygienic standards.

In Korea, the incidence of hepatitis A during recent decades has rapidly decreased owing to much improvement of socioeconomic and hygiene status[5,6]. This caused a big change of age-specific seroprevalence of antibody for HAV, which is connected to steadily increasing incidence of hepatitis A in adolescents and young adults[7,8]. The change of adult-directed pattern of hepatitis A paradoxically brought a medical issue because the apparent pathogenicity of HAV infection has become aggravative in association with clinical symptoms or outcome.

In oriental medicine, hepatitis A has been considered as a pathologic state of damp-heat in the liver, and traditionally progressed therapeutics

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for this disease. This report present san adult case with acute hepatitis A easily treated with herbal medicine. It is hoped that this study will contribute to helping build familiarity with hepatitis A among doctors in oriental internal medicine fields.

Report of the case

1. Characters of patients and diagnosis

A 23-year-old woman began to feel malaise with abdominal discomfort, nausea, vomiting, headache, itching, chills and mild fever from several days before visiting the Oriental Hospital on 2nd March, 2007. On physical examination, the patient had a wide regional area of liver on her right side, and yellowish sclera and skin, which suggested a medical diagnosis of any kind of acute hepatitis. She had no specific familial or past history, and received vaccination against hepatitis B virus, and presented positive for HBV-Ab, but not HCV-Ab. After admission to the Oriental Hospital, a blood test confirmed acute viral hepatitis A as high-titer of Ig M-HAV and low for Ig G-HAV. The patient informed that she had traveled to the seaside (Daecheon) for a school function and eaten some raw seafood.

2. Herbs and treatment

Ynjinohrung-san (茵蔯五苓散) with CGX syrup was prescribed for one week during hospitalization, and then *Soisiho-tang* (小柴胡湯) extract and CGX syrup for four weeks after leaving hospital (Table 1). 5 % DW or normal saline with vitamin complex but no other western medicine were supplied through IV during her three-day stay in hospital.

3. Course of symptoms, lab examination and sonographic finding

From two days of admission into hospital, abdominal discomfort, nausea, vomiting, headache, chilling and mild fever symptoms disappeared. However, general malaise and itching sign lasted to seven days of hospitalization.

Serum level of AST, ALT and bilirubin rapidly decreased, however, it took five weeks for complete normalization. On the other hand, serum level of GGT and ALP showed slow reduction, so they hadn't reached the complete normal level byfive weeks after starting treatment. HAV-IgG gradually increased while HAV-IgM subsequently declined as slow in blood (Table 2).

On the sonographic examination, liver was very enlarged at hospitalization without any

Table 1. Prescription and Compositional Volume of Drugs

Ynjinohrung-san	Alismatis Rhizoma (15), Poria cocos (9), Atractylodis Macrocephalae Rhizoma (9), Polyporus (9), Cinnamomum cassia (3) Artemisia capillaris Herba (6)
Soisiho-tang	Bupleuri Radix (12), Scutellariae Radix (8), Ginseng Radix (4), Pinelliae Rhizoma (4), Glycyrrhizaw Radix (2), Zingiberis Rhizoma (4), Zizyphi inermis Fructus (2)
CGX syrup	Artemisia capillaris Herba (5), Trionycis Carapax (5), Raphani Semen (5), Atractylodis Macrocephalae Rhizoma (3), Poria cocos (3), Alismatis Rhizoma (3), Atractylodis Rhizoma (3), Salvia Miltiorrhizae Radix (3), Polyporus (2), Amomi Fructus (2), Ponciri Fructus (2), Glycyrrhizae Radix (1), Helenii Radix (1)

Table 2. Laboratory Examination

Lab result	Hospital			Out of Hospital	
	2nd March	6nd March	10nd March	17th March	19th March
AST (IU/L)	630	224	110	35	23
ALT (IU/L)	1850	508	228	68	36
GGT (IU/L)	622	752	488	224	87
ALP (IU/L)	971	560	483	250	135
T. bilirubin (mg/dℓ)	6.1	5.4	3.0	1.6	1.2
D. bilirubin (mg/dℓ)	1.8	2.5	1.0	0.5	0.3
HAV-IgM	+++	+++	no test	++	+
HAV-IgG	+	++	no test	++	+++

After fasting for 12 hours, serum levels of aspartate transaminase (AST), alanine transaminase (ALT), total and direct bilirubin were determined using an Auto Chemistry Analyzer (Chiron Ltd. USA).

abnormal finding, but its size reduced to normal after five weeks of medication. Also, spleen size seemed to be slightly increased at hospitalization, then became normal after treatment (Figure 1).

Discussion

HAV is a nonenveloped RNA virus 27 to 32 nm diameter in size, and can be easily inactivated by heating foods to > 85℃ for 1 min [9,10]. The main modes of HAV transmission are contaminated food or water and personal contact [11,12]. Accordingly, the incidence rate of HAV infection is strongly connected to regional hygienic standard[6,13]. Hepatitis A has been frequently recorded in historic oriental documents, and the physiopathologies or therapeutic methodologies are well described. So, it is anticipated that high incidence of hepatitis A and efficient medical approach for the disease have been linked since ancient times in Asia.

During recent decades, improvement of socioeconomic level in South Korea has dramatically lowered the incidence of hepatitis A especially among the young, but paradoxically, adolescents and young adults have a higher risk for HAV infection. This increasing incidence among adults can cause medical problems because of worse clinical symptoms or outcomes compared with child patients[8]. There has been a major time-related change of age-specific seroprevalence of antibody for HAV in the age range of 1-20 years, from 60 %

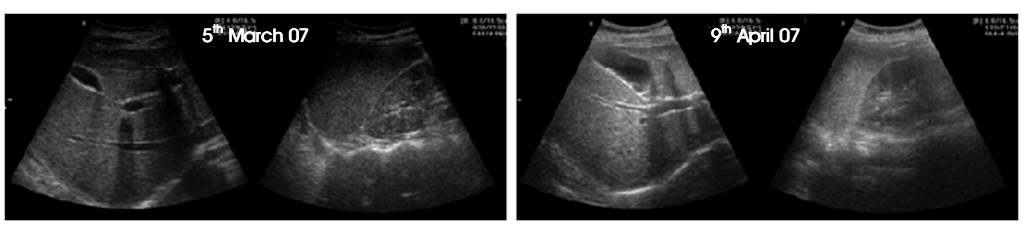

Fig. 1. Ultrasound tomographic image: After starvation for 12 hours, image of liver and spleen was examined using B mode of sonographic machine (SA6000, Medison Co, Korea).

in 1980 to 9 % in 1995 in Korea[7]. The latest study reported a quite low prevalence of anti-HAV in generations younger than 40's, as shown as 2 %, 72 %, 92 %, 94 %, and 100 % in 20's, 30's, 40's, 50's, and 60's, respectively[13].

As in this case, adults usually have worse symptoms such as fever, malaise, anorexia, nausea, and abdominal discomfort, whereas children generally show no symptoms or only mild disorders[14]. Even though the mechanism is unknown, there is significant different likelihood of HBV-induced clinical appearance including jaundice between children and adults; > 70 % of jaundice occurring (adolescents and adult) and > 70 % of no symptom (children < 6) respectively[15]. The patient had typical symptoms and showed a radically elevated level of biochemistry parameters with enlarged liver under sonographical examination.

Generally, during an average incubation period of 28 days (15 to 50 days), replicated HAV in the liver produces viremia, and fecal excretion, so its peak occurs prior to the onset of jaundice, symptoms, or elevation of liver enzymes[16,17]. There is no evidence of chronic liver disease following HAV infection, however, 15 to 20 % of the patients may have prolonged disorder lasting up to 6 months[18,19]. Very rarely fulminant hepatitis occurs as range from 0.015 to 0.5 %; adolescents and adults with underling chronic liver disease have the highest risk for it. The patient in this study showed the stereotype of clinical course without any atypical signs indicating the risk of hepatic failure, and presented rapid recover of all symptoms and normalization of liver enzymes. Actually, AST and ALT were rapidly normalized compared with ALP and GGT in the present patient under herbal medications and rest. At the onset of jaundice, *Ynjinohrung-san* (茵蔯五苓散) with CGX syrup was prescribed for about one week, then, *Soisiho-tang* (小柴胡湯) extract and CGX syrup for four weeks. These herbal drugs effectively controlled the clinical symptoms and laboratory indicators in this case.

As in the present case, humoral immune response to HAV structural proteins occurs before onset of symptoms. Immunoglobulin M antibodies (IgM anti-HAV) are detectable prior to onset of clinical illness, then immunoglobulin G antibodies (IgG anti-HAV) appear soon after IgM. IgM anti-HAV declines in about 3-6 months while IgG anti-HAV persists for years and confers lifelong immunity[20,21]. The patient in this study showed reduced pattern of IgM anti-HAV but increased pattern of IgG anti-HAV during the treatment period. At 5 weeks after starting treatment with oriental medicine, the patient had almost recovered from clinical illness and abnormal range of biochemical parameters except GGT still persisted slightly high.

In summary, this study reports a typical hepatitis A controlled well by oriental therapeutics, which may encourage herbal-based drug development for viral hepatitis.

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