The Detection of Hepatitis G Virus RNA by RT-PCR in Various Liver Diseases

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Background/Aims: Recently, nucleotide sequences from a novel virus, termed hepatitis G virus (HGV), were identified in serum from a patient with cryptogenic hepatitis and suggested as agent of non A-E hepatitis. HGV has been isolated from patients with various liver diseases but clinical implications of this new agent remain largely unresolved. In Korea, the etiology of substantial fraction of hepatitis has remained undefined and there has been no report concerning HGV.

Methods: To determine the infection rate of HGV, RT-PCR of 5' UTR of HGV was performed, and to understand the clinical implication of HGV, medical records of 115 patients with various liver diseases were reviewed. Of 115 patients, 63 were male and 52 were female. Their mean age was 44 years (19-74) and their mean AST and ALT were 121.3±278.7 IU/L and 172.2±253.3 IU/L, respectively. Of 115 patients, 58 (50.4%) had no specific cause of liver diseases, 37 (32.2%) were infected with hepatitis B and/or C virus and 20 (17.4%) had non-viral identifiable liver diseases.

Results: 1. HGV RNA was detected in 15 (13.0%) patients of 115 patients. 2. Among the 15 HGV RNA positive cases, 7 were male and 8 were female. Their mean age was 48 years (19-72) and their mean AST and ALT were 71.9±45.2 IU/L, 97.4±66.8 IU/L, respectively. 3. HGV RNA was detected in 8(13.8%) of 58 patients without obvious causes of their liver diseases and in 7 (18.9%) of 37 patients infected with HBV and/or HCV. However, HGV RNA was not detected from 20 patients with non-viral liver diseases such as alcoholic liver diseases, autoimmune hepatitis,
PBC, or fatty liver. 4. HGV RNA was detected in 5 (19.2%) of 26 patients with acute hepatitis, in 6 (9.4%) of 64 patients with chronic hepatitis, in 1 (14.3%) of 7 patients with liver cirrhosis, and in 3 (27.3%) of 11 patients with hepatocellular carcinoma. 5. There was no statistically significant difference in sex, age, history of transfusion, serum ALT level, etiologies and status of liver diseases between HGV RNA positive and negative group. Conclusions: The prevalence of HGV infection is quite high among the patients who have no specific cause of acute or chronic liver diseases and HGV can be coinfected with HBV and/or HCV infection in Korea.

Key Words: hepatitis G virus, HGV RNA, various liver diseases, RT-PCR.

서 론

1989년 C형 간염바이러스(hepatitis C virus; HCV)가 발견된 이후1-2 비A비B 간염(non-A, non-B hepatitis)의 상당 부분이 HCV에 의한 것임이 밝혀졌다.3-5 그러나 수혈후 간염 및 community acquired hepatitis의 대부분은 HCV와 연관이 없는 점으로서6-7, HCV 이외의 다른 병원체가 존재할 것이라는 사실을 시사해 왔고 잠정적으로 non-A, non-B, non-C (non-ABC), non-A-E 혹은 non-C hepatitis 등으로 불리어 왔다.8-9

1996년 원인미상의 간염에 더하여 있는 환자의 혈청으로부터 새로운 바이러스가 분리되었고 분리한 보고자에 따라서 G형 간염바이러스(hepatitis G virus; HGV)10 또는 GB바이러스 C형(GB virus type C)11라고 명명되었으며, non-A-E hepatitis의 병원체로 추정되며 영기서열이 거의 일치하는 점으로 동일한 바이러스를 서로 다른 간염원에서 추출한 것으로 추정하고 있다. 지금까지 여러 보고자에 의하여 각종 간질환 및 혈관내에서 HGV의 유방과 HGV의 임상적 의의가 밝혀지고 있으나 아직 충분히 밝혀져 있지 않았으며10 우리나라에서는 아직 이에 대한 보고가 없었다.

본 연구에서는 우리나라에서 A형 간염바이러스(hepatitis A virus; HAV), B형 간염바이러스 (hepatitis B virus; HBV) 및 HCV에 의한 간염으로는 설명되지 않는 원인미상의 급만성 간질환 환자, HBV와 HCV에 감염되어 있는 환자 및 원인이 밝혀진 바이러스성 간질환 환자들의 혈청에서 HGV의 영기서열 측 변이가 적다고 알려져 있는 5'UTR의 일부를 primer로 사용하여 RT-PCR 방법으로 HGV RNA를 검출하여 우리나라의 각종 간질환 환자에서 HGV RNA의 검출률과 임상적 의의를 알아보고자 하였다.

대상 및 방법

1. 대상

1992년부터 1996년까지 연세대학교 의과대학 세브란스병원에서 각종 간질환으로 치료받은 환자중 음주력, 약물복용력, IgM anti-HAV, HBsAg, anti-HCV 및 anti-nuclear antibody 등의 간질환의 원인규명에 대한 충분한 조사가 이루