

Detection of high biliary and fecal viral loads in patients with chronic hepatitis C virus infection

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Abstract

Background: The life cycle of the hepatitis C virus (HCV) is closely associated with lipid metabolism. Recently, NPC1L1 (a cholesterol transporter) has been reported to function as an HCV receptor. This receptor is expressed in the hepatocyte canalicular membrane and in the intestine; serving as a key transporter for the cholesterol enterohepatic cycle.

Objectives: We hypothesized that HCV might have a similar cycle, so we aimed to study the presence of HCV in bile and stools of infected patients.

Materials and methods: Blood, feces, and duodenal bile samples were collected from patients infected with HCV. The biliary viral load was normalized to the bile salt concentration of each sample and the presence of HCV core protein was also evaluated. A total of 12 patients were recruited. HCV RNA was detected in the bile from ten patients.

Results: The mean viral load was 2.5log10IU/60mg bile salt. In the stool samples, HCV RNA was detected in ten patients (mean concentration 2.7log10IU/g of feces).

Conclusions: HCV RNA is readily detectable and is present at relatively high concentrations in the bile and stool samples of infected patients. This may be relevant as a source of infection in men who have sex with men. Biliary HCV secretion may perhaps play a role in the persistence of viral infection via an enterohepatic cycle of the virus or intrahepatic spread.

Keywords:

Bile | Bilis | Cholesterol | Colesterol | Enterohepatic | Enterohepática | Feces | Gut | Heces | Hepatitis C virus | Intestino | Virus de la hepatitis C.

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