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Opinion

# Chronic Hepatitis E and Solid Organ Transplant: What We Know?

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**Received:** October 30, 2017; **Published:** November 20, 2017

Hepatitis E virus (HEV) is the etiological agent of acute hepatitis E, an emergent disease of increasing concern in developed countries [1]. Human infecting strains are classified into four genotypes (HEV-1 to 4). HEV-1 and 2 (Asia, North Africa and several Latin-American countries) are thought to be anthroponotic with no other known animal reservoir, whereas HEV-3 (Europe, the Americas and Asia) and 4 (mainly Asia) were also found to infect several animal species [2]. The incidence of HEV infection has increased in developed regions over the last decade, predominantly due to infection with HEV-3. In immunocompetent individuals, HEV typically causes an acute self-limiting disease with very low death rates [3]. However, HEV-3 and 4 are an increasingly recognized cause of chronic hepatitis E, particularly in liver transplanted and immunocompromised patients [4].

Several pieces of evidence, together with many case reports coming from non-endemic regions suggest that solid organ transplant recipients are the main population at risk of chronic hepatitis E, significant liver fibrosis and fatal hepatic failure (FHF) [5]. Studies on patients with solid organ transplant have shown chronic HEV infection rates up to 60% in transplant recipients. Chronic HEV infection is thus becoming into an important public health problem of major concern in liver transplanted patients, but also lung and kidney transplant receipt individuals. The incidence of *de novo* HEV infection in this population seems to be low (about 2%) after transplantation. However, despite HEV infection is not common, chronic hepatitis E needs to be considered in the differential diagnosis of post-transplantation liver disease. Nuclei acids techniques (NAT's) should be performed for the detection and genotyping of HEV during the initial evaluation of acute liver failure in any epidemiological scenario.

Ribavirin (RBV) monotherapy is the treatment of choice for patients with chronic HEV infection, since it has shown to be effective by achieving a sustained virologic response (SVR) in most of the cases. Successful treatment of patients chronically infected with HEV with Pegylated interferon alpha (Peg-IFN) has also been described. By contrast to kidney and lung transplanted patients, data regarding the use of RBV for adult liver transplant recipients are still scarce. In addition, many cases of treatment failure with RBV have been reported, mainly due to the quasispecies nature of HEV population. Therefore, in this context of RBV-induced resistance, alternative therapies of clinical utility should be further investigated.

In summary, chronic and persistent hepatitis E associated to HEV-3 and 4 is rare, but of significant importance in solid organ transplant recipients and immunocompromised individuals from non-endemic and endemic countries. Based on the clinical presentation of hepatitis E, which includes FHF, liver cirrhosis and chronic liver failure, HEV should be tested as a likely causative agent of liver disease in transplanted patients.

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**Volume 4 Issue 2 November 2017**