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Chronic hepatitis E virus genotype 3 infection in a 10 years old female liver transplant recipient

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Hepatitis E virus (HEV) infection has recently been recognized to cause chronic disease in immunocompromised adult patients after organ transplantation. HEV data on pediatric patients are scarce and only a few chronic cases have been reported in developed countries. We investigated the presence of HEV-RNA among patients referred to a clinical laboratory to perform anti-HEV test. A retrospective study was performed on 98 serum samples previously subjected to ELISA test for anti-HEV antibodies in 2012 and 2013. HEV-RNA was detected through Real-Time RT-PCR in one female child, with positive anti-HEV IgM and IgG. Currently 10 years old, she received an orthotopic liver transplantation (OLT) due to biliary atresia at the age of 14 months. Three years after OLT she presented with increased serum aminotransferases (SA) and confirmed acute cellular rejection (ACR). SA remained significantly and chronically abnormal for 6 years, when anti-HEV IgM and IgG tested positive (9 years post-OLT). Hepatitis B virus, hepatitis C virus, cytomegalovirus, Epstein-Barr virus, autoantibodies and anti-nuclear antibodies tested negative. Phylogenetic analysis of the HEV sequence indentified it as belonging to HEV genotype 3b. The HEV isolate (Brazilh4, GenBank KF152884) shared 87–93% homology to sequences of human HEV previously characterized by our group in Brazil, and 83–97% homology to swine HEV from Brazil. Among all HEV sequences compared, the highest homology (95–97%) was to swine sequences recently isolated in Southern Brazil. Besides HEV-RNA detection in serum 6 years after symptoms first presented, we successfully identified high homology (>99%) HEV-RNA in formalin-fixed paraffin-embedded liver tissue sections from 3 and 7 years after the first symptoms (6 and 10 years post-OLT, respectively). These findings, along with the persisting SA, characterize this infection as chronic hepatitis E. To our knowledge this is the first report of chronic and/or pediatric HEV infection in Latin America. These findings demonstrate that chronic HEV infection can occur in immunocompromised patients in this region and suggest that HEV should be incorporated in the differential diagnosis of acute hepatitis and ACR among liver transplant recipients in this setting, including pediatric patients.

Biography

Ana Maria Passos is currently at her last year of PhD at the Federal University of Sao Paulo. She has published 14 paper in reputed journals and has been awarded 3 prizes for best paper/abstract in international conferences. Areas of expertise: viral hepatitis, hepatitis E, lipidomics in hepatocellular carcinoma, search for biomarkers.

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