Hepatitis C Virus Transfusion-Transmitted Infection in Brazilian Cardiac Surgery Patients

CRISTIANE A. VILLELA Nogueira¹, DANIEL C. EDELMAN², CARMEN MARTINS NOGUEIRA¹, SUSIE ANDRIES NOGUEIRA¹, HENRIQUE SERGIO M. COELHO¹, LUIZ JOÃO ABRAHÃO JR¹, BART VANDERBOGHT², JOHN S. LAMBERT², NIEL T. CONSTANTINE²

¹Internal Medicine and Preventive Medicine Department, Clementino Fraga Filho University Hospital - Federal University of Rio de Janeiro, Brazil
²University of Maryland, School of Medicine, Baltimore, USA.
³Innogenetics, Zwijndrecht, Belgium

SUMMARY

In the past two decades, major improvements in blood safety have been achieved, particularly for HIV and hepatitis C virus (HCV). A prospective study was carried out between 1996 and 1999 in Brazil to determine the incidence of post-transfusion infection in surgery patients caused by HCV. One hundred sixty-four patients who received a blood transfusion during cardiac surgery were followed for six months and blood samples collected before and after surgery were assessed to investigate HCV infection. Alanine aminotransferase levels were serially determined, as well as clinical data related to hepatitis. Prior to surgery, HCV infection was detected by anti-HCV ELISA III in 6 patients. Any post-surgical samples which were positive by a third generation ELISA test were confirmed by immunoblot and reverse-transcription polymerase chain reaction (RT-PCR), as were the pre-transfusion samples to exclude pre-transfusion HCV infection not detected by ELISA screening. Results indicated that one patient who was previously considered negative for HCV antibody in the pre-surgical sample was later found to be positive for HCV by RT-PCR in that sample. Seroconversion for HCV antibody after surgery was observed in two patients, one of them with clinical hepatitis; their genotypes were 1a and 1b. The overall prevalence of HCV infection was 4.26% (7/164) and the incidence rate of HCV infection after surgery was 1.27% (2/157). This study shows a high rate of HCV infection acquired post-transfusion in a cohort of surgery patients in Brazil and suggests that better screening methods such as viral RNA assessment may be effective in lowering this rate. (Clin. Lab. 2002;48:529-533)