RISK ASSESSMENT OF TRANSPLANTING RENAL ALLOGRAFTS FROM HBcAb+ DONORS TESTED USING A PROTOTYPE MULTIPLEX TRANSCRIPTION MEDIATED AMPLIFICATION

Claudia Chinchilla CLSpMB, Michael Tajon CLS, Robert Mendez MD and Marek Nowicki PhD.
National Institute of Transplantation, Los Angeles, CA

INTRODUCTION
Transmission of hepatitis B virus infection through hepatitis B core antibody positive (HBcAb+) grafts to hepatitis B surface antigen negative (HBsAg-) recipients has been reported (Liver Int. 2005 Dec;25(6):1169-74). The mandatory use of immunosuppression in transplant patients favors reactivation of latent virus that may be present in grafts from HBsAg-negative anti-HBc-positive donors. With the persistent organ donor scarcity, the use of these grafts can not be avoided, specially in urgent cases. The chance of transmission of hepatitis B virus (HBV) by transplanting livers from HBcAb+/HBsAb+ donors is substantial. In the absence of preventative therapy, re-infection of allografts with hepatitis B virus (HBV) after orthotopic liver transplantation (OLT) resulted in dismal allograft and patient survival. However, transmission of HBV by kidney transplantation seems to be substantially lower (J Nephrol. 2002; 15: 605-613). It is known that potentially active HBV persists in some patients who have made a complete serological recovery. HBV DNA and possibly HBV virions were detected in the serum of patients more than 5 years after complete serological recovery (J Clin Invest 1994;93:230). This observation suggests that complete viral clearance or sterilizing immunity might not always exist in HBsAg- and HBcAb+ donors.

AIM
To determine whether HBV DNA screening can detect serologically silent HBV carriage

METHODS
Twenty-eighth cadaveric kidney donor/recipient pairs, transplanted between December 2000 and June 2004 and still available to follow up, were evaluated. HBV serology was carried out as part of the pre-transplant evaluation. Post-transplant HBV status was determined by HBsAg EIA (Genetic Systems), HBsAb and HBcAb EIAs (Abbott Laboratories). Post transplant HBV DNA testing was performed using a prototype HBV discriminatory Transcription Mediated Amplification (TMA) assay (Ultrio, Gen-Probe, San Diego, CA).

RESULTS
Recipients were divided into 2 groups, 15 in group A with HBcAb+ donors and 13 in group B with HBcAb- donors. Ten (66.7%) of group A recipients and 11 (84.6%) of group B recipients were HBcAb+ at transplantation. Of the 28 donor/recipient pairs, only 3 were HBV DNA positive after transplantation (Figure 1) . All three also were HBsAg+ before transplantation. All post-transplant changes in HBV markers were consistent with immunosuppression or vaccination (Tables 1 and 2).

CONCLUSION
In our series there was no evidence of HBV transmission from kidneys obtained from HBcAb+ donors. Kidney grafts from HBcAb+ donors should be considered even in the absence of HBV DNA screening.

ABSTRACT
Background: The carrier state of hepatitis B virus (HBV) by transplanting livers from hepatitis B e antigen negative (HBsAg-) hepatitis B core antibody positive (HBcAb+) grafts to hepatitis B surface antigen negative (HBsAg-) recipients has been reported. To determine whether the risk of transmission from hepatitis B core antibody positive (HBcAb+) grafts to hepatitis B surface antigen negative (HBsAg-) recipients is substantially lower than that of HBsAg-positive donors.

Methods: Twenty-eight cadaveric kidney donor/recipient pairs, transplanted between December 2000 and June 2004 and still available to follow up, were evaluated. HBV serology was carried out as part of the pre-transplant evaluation. Post-transplant HBV status was determined by HBsAg EIA (Genetic Systems), HBsAb and HBcAb EIAs (Abbott Laboratories). Post transplant HBV DNA testing was performed using a prototype HBV discriminatory Transcription Mediated Amplification (TMA) assay (Ultrio, Gen-Probe, San Diego, CA). The companies intended to seek approval to run the test on both the semi-automated Procleix(R) System and on the fully automated, high-throughput Procleix(R) TIGRIS(R) System.

Results: Ten (66.7%) of group A recipients and 11 (84.6%) of group B recipients were HBcAb+ at transplantation. Of the 28 donor/recipient pairs, only 3 were HBV DNA positive after transplantation (Figure 1). All three also were HBsAg+ before transplantation. All post-transplant changes in HBV markers were consistent with immunosuppression or vaccination (Tables 1 and 2).

Conclusion: In our series there was no evidence of HBV transmission from kidneys obtained from HBcAb+ donors. Kidney grafts from HBcAb+ donors should be considered even in the absence of HBV DNA screening.