ORAL ABSTRACTS

603. Transmission of Hepatitis C Virus (HCV) from a Deceased Organ Donor at Increased Risk of HCV infection with Negative Nucleic Acid Test Screening at the Time of Organ Donation

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Background. Nucleic acid testing (NAT) is recommended for HCV screening of organ donors. In January 2014, CDC was notified of 2 solid-organ recipients with HCV infection detected during routine post-transplant screening, who received organs from a common donor meeting increased-risk (IR) criteria due to non-medical injection drug use. Donor serum tested at organ donation was HCV NAT undetectable and antibody negative. We investigated to determine the likelihood of donor-derived transmissions.

Methods. Donor and recipients' medical records were reviewed and infected recipients were interviewed. Cases were defined as recipients from the common donor who, after transplantation, developed HCV infection. Stored donor serum and splenocytes were tested for HCV with high-sensitivity quantitative PCR at CDC. Post-transplant serum and, when available, pre-transplant serum from all recipients was tested with HCV NAT. Quasispecies analysis was performed on infected recipients with available serum specimen.

Results. Six recipients received 7 solid organs. HCV was detected in stored donor serum and splenocytes at <15 IU/mL and 58 IU/mL, respectively. Three of six recipients (right lung, left lung, and left kidney/pancreas) had newly detectable HCV which was undetectable in pre-transplant serum; 2 recipients (heart, right kidney) were not infected; and 1 (liver) was HCV infected prior to transplant. Of the 3 newly infected recipients, 2 had genotype 1a, were anti-HCV negative, and had normal liver function, while 1 recipient died shortly after transplant but had detectable HCV (<15 IU/ml) in archived serum. Quasispecies analysis established close viral relatedness among the two surviving, infected recipients but revealed an unrelated strain in the liver recipient. No healthcare-associated or other transmission risks were identified.

Conclusion. HCV transmission to 3 organ transplant recipients occurred despite negative screening by NAT of the IR donor serum suggesting the donor was very early in infection when HCV could not be detected even by NAT. These findings underscore the importance of recipient informed consent and post-transplant bloodborne pathogen screening when considering IR donors.

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