The viral diseases and laboratory testing

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To provide optimal service for a transplantation program, today's diagnostic virology laboratory has to design a 24-hour on-call service to identify the serostatus of donors of blood or a transplant and the recipient. The list of viruses continues to lengthen: we are now screening blood for antigens or antibodies to human immunodeficiency virus types 1 and 2 (HIV-1 and -2), hepatitis viruses B and C (HBV, HCV), cytomegalovirus (CMV), Epstein Barr virus (EBV), and human T cell lymphotropic viruses 1 and 2 (HTLV-1 and -2). Soon to join the ranks, if not already there in some settings, are herpes simplex viruses 1 and 2 (HSV-1 and -2), varicella-zoster virus (VZV) and human herpes 6 and 7 (HHV-6 and -7). Where does it all end? What is the value of all of this laboratory testing? Three papers published here by Drs Griffith, Larke and Diaz-Mitoma review the state-of-the-art tests available for screening for these agents and the role of the laboratory in monitoring primary or reactivated infections in the transplant recipient. The message to physicians providing care to transplant recipients is that life-threatening infections can be prevented by not using donations from patients seropositive for HIV-1 and -2, HBV, HCV, and HTLV-1 and -2. Facing the realities of a background of infections in the donating population, especially with viruses which undergo latency (the herpes group) appropriate matching of viral experience between the donor and recipient helps to reduce primary infections with CMV or EBV. Additionally, close monitoring with sensitive laboratory tests for primary and reactivated infections (antigen detection or measurement of antibodies to different viral epitopes, use of amplification techniques such as polymerase chain reaction, etc) may allow more meaningful treatment and management decisions.

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