Chagas disease

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Condition

Chagas' disease (Trypanosoma cruzi)

Individual at risk

Recipient

Guidance at RECRUITMENT for adult volunteer donor and maternal donor (cord blood donation)

A past history of Chagas' disease should trigger permanent exclusion.

A history of being born or transfused with blood in a Chagas' endemic area should trigger serological testing to quantify risk.

Guidance at CT/WORK-UP

A past history of Chagas' disease may be acceptable if no evidence of acute or chronic infection, at the discretion of the requesting transplant centre.

A history of being born or transfused with blood in a Chagas' endemic area should trigger serological testing to quantify risk.

A history of being transfused with blood in a Chagas' endemic area should trigger serological testing to quantify risk.

Justification for guidance

The causative organism of Chagas' disease is the protozoan Trypanosoma cruzi. The infection is a zoonosis that is transmitted to humans by bloodsucking insects of the Reduviidae family (kissing bugs), triatomine subfamily. The animal reservoir includes over 150 species of both wild and domestic mammals. Infection is life-long, but approximately 70% of infected individuals will remain asymptomatic. Furthermore, parasitaemia occurs not only during the acute phase of infection, but also during asymptomatic chronic phases (albeit intermittently and at low levels).

Accordingly, Chagas' is well-known to be transfusion-transmissible and asymptomatic parasitaemia has been detected in blood donors. Cases of transmission via solid organ transplantation have also been reported. Though platelet concentrates are the most frequently reported means of transmission, T. cruzi is able to survive refrigeration, freezing and thawing.

Chagas' is endemic to mainland Latin America; however, the common modes of transmission are such that the risk to travellers is minimal. Instead, the people most at risk are those who spend early childhood in an endemic area in certain types of dwelling, those who receive blood transfusions in endemic areas, and children whose mothers grew up at risk of Chagas' disease. Most of this risk can be captured by asking donors their country of birth and whether they have ever received a blood transfusion in a Chagas'-endemic country. The former can be definitively captured at recruitment, while the latter could occur at any time up to work-up.

The detection of antibodies to T. cruzi is an established strategy to prevent transmission of infection through blood transfusion. Where available, this strategy can be adapted to assess the risk of prospective HPC donors with identified risk factors for chronic, asymptomatic Chagas' disease. Because the prevalence of Chagas' disease varies widely within the populations of endemic areas, it is likely that most donors with identified risk factors – especially those residing in non-endemic countries – will test negative for T. cruzi antibodies.

The most commonly used format for serological assays is the enzyme-linked immunosorbent assay (ELISA). A number of commercially available ELISAs are available and two have been licensed by the Food and Drug Administration (FDA) in the US. Other serological assay formats include particle agglutination (PA) and indirect haemagglutination assay (IHA). The Abbott Diagnostics ESA Chagas, an enzyme strip assay, is the only confirmatory assay to be approved by the FDA.

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