Chagas Disease Found in Three Organ Transplant Recipients - Priorities for testing blood donors?

Federal health officials confirmed three cases of Chagas disease, or Trypanosoma cruzi, in organ transplant recipients, the first time such cases have occurred in the United States, according to a March 15, 2002 report from Morbidity and Mortality Weekly Report (MMWR). On April 23, 2001, a physician notified the Centers for Disease Control and Prevention (CDC) of an acute case of Chagas disease in a 37-year-old woman who had received cadaveric kidney and pancreas transplants on March 5 and returned to the hospital on April 19 complaining of illness. T. cruzi parasites were identified in the woman's blood. She was treated with nifurtimox, but in October died of the disease. Two other persons who had received organs from the same donor were found to be infected with T. cruzi. One, a 69-year-old woman who received the donor's other kidney, was treated and appears to be doing well. The other recipient, a 32-year-old woman who had received the donor's liver, died several months later, of complications unrelated to T. cruzi. The infected donor was an immigrant from Central America, where T. cruzi is endemic. According to MMWR, an estimated 16 to 18 million individuals, primarily in Central and South America and Mexico, are infected with T. cruzi. An estimated 25,000 to 100,000 Latin American immigrants living in the US are infected with the parasite. T. cruzi is transmitted when mucous membranes or breaks in the skin are contaminated with the feces of infected triatomine bugs. Infection also can be transmitted through blood contact (such as blood transfusion) and organ transplantation.

The following responses have been submitted:

1. According to **a blood bank physician who is an expert in the field of transfusion medicine**, the **most salient question for the e-Network Forum to debate** regarding Chagas Disease is whether it makes sense to implement and pay for Chagas testing of blood transfusions (the occurrence of transfusion-transmitted cases has been only documented in 6 patients in Canada and the US in the history of blood transfusion) or to **put bacterial contamination of platelets as a higher priority**, which, via FDA reporting and the **BACON study** and the report by Kuehnert MJ et al (Transfusion Dec., 2001) is known to **kill about a dozen patients/year**!

2. In contrast, **a Los Angeles blood bank physician**, whose blood donor collection center screened individuals for serologic evidence of T. cruzi infection (until the facility closed the donor collection center due to financial pressures), reports T. cruzi infection can be transmitted by transfusion because the parasite is viable for at least 18-21 days in refrigerated blood and may survive cryopreservation and thawing. Furthermore, in the majority of transfusion-associated cases of T. cruzi infection reported in the US and Canada, platelets were the implicated component (Shulman IA, Transfusion Medical Reviews, July, 1999). The risk of collecting a T. cruzi infected donor unit is highest in areas of the US where the greatest numbers of Latin American immigrants have settled. Data indicate that the distribution of T. cruzi seropositive donors varies within the US from none to nearly 200 per 100,000 donors. PCR studies indicate that more than half of T. cruzi seropositive donors have evidence of parasitemia! Although the likelihood of collecting blood from a T. cruzi seropositive donor appears to be regionally dependent, a T. cruzi infected unit could be distributed to an area where the collection of seropositive blood would be unlikely to occur because blood components are frequently shipped between geographic regions of the US. A policy to test donors for evidence of T. cruzi infection is not currently employed in the US, since there is no available FDA-approved serologic test for screening blood donors. A confirmatory test would also be necessary. While the Los Angeles blood bank physician agrees with the opinion expressed above that it is important to prevent transfusion-associated bacterial sepsis from transfusion of contaminated blood products, it is also important to prevent transfusion of T. cruzi infected blood products (especially infected platelets).

Please submit comments to the e-Network Forum.


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Addenda:

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