Abstract

Prevalence and Factors Associated With Transfusion-Transmitted Infections Among Blood Donors at the National Blood Transfusion and Research Center, Sana'a, Yemen, 2017

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Abstract

Background: Yemen is facing major challenges in ensuring the safety and availability of blood transfusion to meet the increased demand due to the protracted conflict. However, transfusion-transmissible infectious agents (TTIs) such as hepatitis B virus (HBV), hepatitis C virus (HCV), human immunodeficiency virus (HIV), syphilis, and malaria remain the greatest threats for blood transfusion safety in such fragile, conflict-affected, and vulnerable settings.

Objective: The aim of this study was to determine the magnitude of TTIs among blood donors attending the National Blood Transfusion and Research Center (NBTRC) and the associated factors.

Methods: A cross-sectional study was conducted on 340 blood donors at the NBTRC during November and December 2017. Data were collected through face-to-face interviews using a predesigned questionnaire that covered sociodemographic characteristics and possible TTI-associated factors. Blood samples were drawn and tested for HBV surface antigen (HBsAg), HCV antibodies, HIV1, and HIV2 using electrochemiluminescence immunoassays, and syphilis and malaria antibodies were screened with rapid immunochromatographic techniques.

Results: The overall prevalence of TTIs was 8.8%, with HBV, HCV, HIV, syphilis, and malaria accounting for 2.5%, 1.2%, 0.3%, 1.2%, and 3.2% of all TTIs, respectively. HBV was significantly associated with a history of jaundice and cupping. Furthermore, urethro-vaginal excretion was significantly associated with syphilis, whereas malaria detection was significantly higher among donors from malaria-endemic areas. Nearly three-quarters of donations were from replacement donors who had a significantly higher TTI prevalence than that of the voluntary donors (10.4% vs 3.3%; odds ratio 3.4, 95% CI 1.1-11.6).

Conclusions: Although the prevalence of TTIs is low, they still pose a serious risk for blood recipients, especially in fragile, conflict-affected, and vulnerable settings where the needs for blood transfusion are increasing and resources are limited. Therefore, using more sensitive screening methods and establishment of a TTIs surveillance system should be considered. Efforts should be made to improve donor recruitment procedures and increase the proportion of regular and voluntary blood donation.

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KEYWORDS

transfusion-transmitted infections; blood donors; HIV; syphilis; malaria; conflict

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