**Prevalence of and Factors Associated With Transfusion-Transmitted Infections Among Multi-transfused Patients, Sana'a City, Yemen, 2019**

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**Abstract**

**Background:** Multi-transfused patients (MTPs) are at higher risk of transfusion-transmitted infections (TTIs) due to their frequent need for blood transfusion. Nevertheless, little is known about the prevalence of TTIs among MTPs and its associated factors in Yemen.

**Objective:** We aimed to determine the prevalence of hepatitis B virus (HBV), hepatitis C virus (HCV), and HIV and its associated factors among MTPs.

**Methods:** A cross-sectional study was conducted at the Yemeni Society for Thalassemia and at Pediatric Leukemia Unit in Sana’a City. The calculated sample size of 357 was increased to 405 to overcome any nonresponses. By using probability proportional to size sampling, 80 patients with thalassemia, 240 patients with sickle cell anemia, and 85 patients with leukemia were randomly selected. Data were collected through face-to-face interviews with patients or their caretakers by using a predesigned questionnaire covering demographic, socioeconomic characteristics and TTI-associated factors. Blood samples were drawn and were tested for HBsAg, anti-HCV, and HIV I and II by using an electrochemiluminescence immunoassay.

**Results:** The overall prevalence of TTIs among MTPs was 13.1% and was significantly highest (37.3%) among patients with leukemia. HBV (16.2%) and HCV (27.5%) prevalence were also highest among patients with leukemia. Only 2 (0.04%) patients were found to be HIV positive among patients with sickle cell anemia, and 85 patients with leukemia were randomly selected. Data were collected through face-to-face interviews with patients or their caretakers by using a predesigned questionnaire covering demographic, socioeconomic characteristics and TTI-associated factors. Blood samples were drawn and were tested for HBsAg, anti-HCV, and HIV I and II by using an electrochemiluminescence immunoassay.

**Conclusions:** Our findings raise an alarm for the existence of a high risk of TTIs among MTPs, especially among patients with leukemia and those who undergo an increasing number of transfusions. Using advanced technology in blood screening and strict infection prevention during transfusion should be adopted. The rational use of blood/blood substitutes and ensuring that MTPs are vaccinated against HBV are recommended.

**KEYWORDS**
prevalence; transfusion-transmitted infections; multi-transfused patients; Yemen

**Multimedia Appendix 1**

[PPTX File, 445 KB-Multimedia Appendix 1]

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