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Prevalence and specificity of red blood cell antibodies in patients transfused in tertiary hospitals in Burkina Faso
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Abstract
Background: Sub-Saharan African countries face the challenge of immunological transfusion safety that puts many patients at risk of post-transfusion hemolytic reactions. This is because pre-transfusion testing for irregular/unexpected antibodies that helps to prevent these risks are neither universally available nor accessible. The aim of our study was to determine the prevalence of red blood cell alloantibodies and their specificity in patients transfused in Burkina Faso. Materials and Methods: This was a cross-sectional study including patients who had received at least one blood transfusion. Indirect antiglobulin testing using LISS-enhanced medium gel column agglutination technique was used for antibodies screening and identification. Enzymatic technique with papain-treated red cell reagent was performed in attempt to solve some difficulties if necessary as well as auto-control test and RH-KEL phenotyping when possible to help antibodies identification. Results: A total of 832 patients were included, 51.6% of whom were female, and the median (IQR) age was 34 (20–49) years. Of these, 43.7% had chronic kidney disease and 20.4% were sickle cell patients. The median (IQR) number of immunisation episodes (blood transfusion and pregnancies) was 3 (2–6) with the median (IQR) number of blood units received per patient of 2 (1–5). The proportion of patients with RBCs antibodies was 6.4% (53/832), with mainly anti-Rh antibodies. A combination of 2 antibodies was found in 7 patients and a combination of 3 antibodies in one patient. Antibodies of unknown specificity (AUS) were encountered in 29%. Independent factors associated with antibody positivity were age (OR = 1.02; p = 0.026), sickle cell disease (OR = 3.23; p = 0.017) and receiving more than 10 blood units (OR = 7.33; p = 0.01). Conclusion: In this study, the proportion of patients with RBC antibodies was quite similar to that observed in Sub-Saharan African countries. However, the availability and accessibility of pre-transfusion compatibility tests as well as the quality of methods used should be improved to ensure the safety of blood transfusions. © 2023 British Blood Transfusion Society.

Author Keywords
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