ANALYSIS OF RED CELL ALLOIMMUNIZATION IN SICKLE CELL DISEASE

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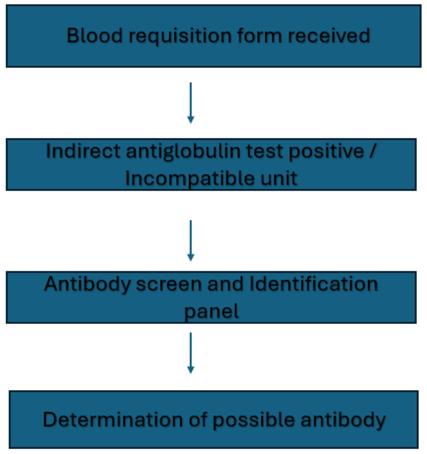
INTRODUCTION

- Red blood cell (RBC) transfusion is a vital therapeutic intervention for patients with sickle cell disease (SCD).
- Alloimmunization from repeated red blood cell transfusions makes it more difficult to find a compatible crossmatch unit and identify appropriate antigenic phenotype negative blood for transfusions.
- The study aimed to assess the prevalence of alloimmunization in patients with Sickle Cell disease.

OBJECTIVES

- To study the frequency of alloimmunization in SCA pt. of a tertiary care health center in central India

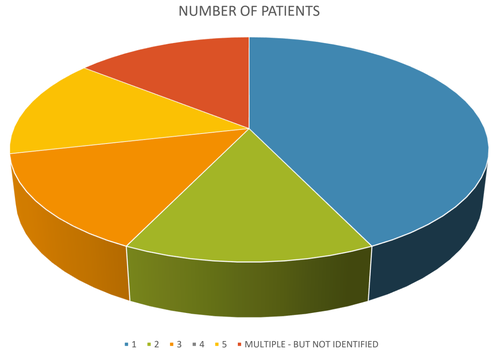


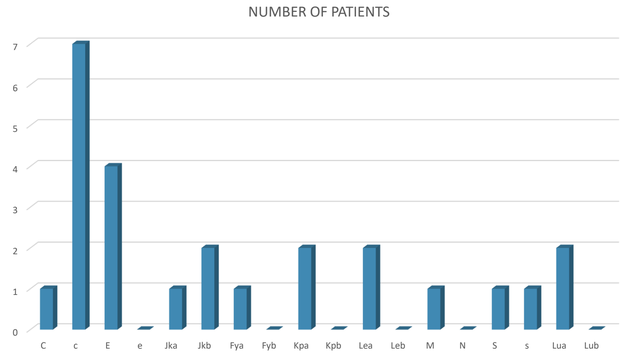
METHODS

- Study design: Retrospective analysis of Sickle cell disease patients having alloimmunization.
- Centre: AIIMS Bhopal
- Source of data: Blood request forms received from January 2024 to 30th September 2024.
- The data comprises the frequency alloimmunization in Sickle cell anemia patients.

RESULTS

A total 81 request forms of patients with Sickle cell disease were assessed. The mean age was 19.17 years ranging from 1 to 61 years. 60.5% were male patients and 39.5% were female patients. RBC alloimmunization was found in 13 (16.04%) of SCD patients. All these patients had a history of multiple transfusion. Single antibody were identified in 6 (46.2%) patients, Multiple alloantibodies were identified in 7 (53.8%) patients. The most common alloantibodies identified were Anti-c in 53.8%, Anti-E in 30.7% and Anti-jk_b in 15.3% patients.





DISCUSSION

- The number of RBC units received was significantly higher in alloimmunized than non-alloimmunized patients, which could be expected because the frequency of alloimmunization is known to depend on the number of transfusions.
- This finding might be due to the fact that episodic transfusions are frequently performed in an inflammatory context (acute chest syndrome, severe vaso-occlusive crisis, worsening of anaemia in febrile context), and inflammation is a known risk factor for alloimmunization in SCD patients.

CONCLUSION

High prevalence of alloimmunisation in patients with Sickle cell disease thus emphasizes the need for prophylactic &/or Extended red cell antigen matching for patients with sickle cell disease receiving red cell transfusions.

REFERENCES

- (Hendrickson et al, 2007; Fasano et al, 2015; Godefroy et al, 2016).
- (Rosse et al, 1990; Zalpuri et al, 2012; Nickel et al, 2015)