LETTER TO THE EDITOR
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Transfusion Strategies in Sickle Cell Disease: A Key Consideration for Total Hip Arthroplasty

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Dear Editor,

We read with great interest the article entitled 'Comparison of Mortality and Complications After Total Hip Arthroplasty in Patients with Sickle Cell Disease: A RetrospectiveMatch-Controlled Study from Türkiye' [1] published in your journal. We commend the authors for their valuable contribution to understanding the perioperative challenges associated with total hip arthroplasty (THA) in patients with sickle cell disease (SCD). We would like to further highlight the importance of transfusion strategies, an area where conflicting evidence and the absence of standardized protocols continue to influence clinical practice.

Although transfusion is widely used in patients with sickle cell disease (SCD) undergoing total hip arthroplasty (THA), considerable uncertainty remains regarding the optimal transfusion strategy. THA is commonly performed in patients with SCD due to avascular necrosis of the femoral head[6]; however, these patients remain at substantial risk of perioperative complications, highlighting the need for evidence-based management strategies[2]. A study[3] reported that current randomized evidence is insufficient to determine whether conservative or aggressive transfusion strategies are superior in preventing sickle cell–related or surgery-related complications. Similarly, a randomized study[4] in children with SCD undergoing adenotonsillectomy found that an aggressive transfusion regimen did not reduce postoperative complications compared with a conservative regimen, supporting the use of conservative transfusion approaches to minimize transfusion-related risks. Furthermore, recent reviews[5] emphasize that patients with SCD should undergo preoperative evaluation by a hematologist, who can develop an individualized transfusion plan based on disease severity, baseline hemoglobin, surgical risk, and previous transfusion history. Consistent with this approach, the American Society of Hematology (ASH) guidelines panel suggests preoperative transfusion over no preoperative transfusion in patients with SCD undergoing surgeries requiring general anesthesia and lasting more than 1 hour.

In conclusion, although transfusion remains an essential component of perioperative care in patients with sickle cell disease undergoing total hip arthroplasty, the optimal transfusion strategy remains uncertain. Further prospective, multicenter studies are needed to strengthen the evidence base and support the development of standardized, evidence-based guidelines that promote consistent yet individualized patient care.

Keywords: Sickle cell disease, total hip arthroplasty, blood transfusion

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Response to "Transfusion Strategies in Sickle Cell Disease: A Key Consideration for Total Hip Arthroplasty"

Dear Editor,
We thank the authors for their thoughtful comments on our article, "Comparison of Mortality and Complications After Total Hip Arthroplasty in Patients with Sickle Cell Disease: A Retrospective Match-Controlled Study from Türkiye," and for drawing further attention to the important and still unresolved issue of perioperative transfusion management in patients with sickle cell disease (SCD) undergoing total hip arthroplasty (THA) [1].
We agree that transfusion is an important component of perioperative management in SCD; however, the optimal strategy remains incompletely defined. Contemporary evidence increasingly supports an individualized rather than universally aggressive approach. A recent systematic review and meta-analysis including 16 studies and 3,486 patients found no significant differences between preoperative transfusion and conservative strategies for several clinically relevant outcomes, including acute chest syndrome, painful crisis, thrombosis, intensive care unit admission, and mortality, although the quality of the available evidence remained limited [2]. The American Society of Hematology guidelines similarly emphasize individualized decision-making according to genotype, baseline hemoglobin concentration, disease severity, surgical risk, and previous transfusion-related complications [3]. Current perioperative reviews further underline the importance of multidisciplinary planning and careful management of oxygenation, hydration, temperature, analgesia, and thromboprophylaxis in addition to transfusion decisions [4,5].
This distinction is particularly relevant when interpreting our findings. In our nationwide matched cohort, 96.4% of patients with SCD received perioperative blood transfusion compared with 64.7% of matched controls [1]. Nevertheless, this high transfusion rate should not be interpreted as evidence that an aggressive transfusion strategy was systematically applied. Because our study was based on a nationwide registry, detailed information regarding transfusion indications, timing, number of units administered, simple versus exchange transfusion, target hemoglobin concentration, target HbS percentage, and institution-specific transfusion protocols was not consistently available. Furthermore, the relatively high transfusion rate observed in the control group suggests substantial variation in transfusion practices among participating centers. These limitations were acknowledged in the original report [1].
The broader literature also supports caution against extrapolating a single transfusion strategy to all patients with SCD. Earlier randomized evidence demonstrated that a conservative perioperative transfusion regimen may achieve outcomes comparable to a more aggressive regimen while reducing transfusion-related exposure [6]. More recent THA-specific evidence continues to show that patients with SCD remain at substantial risk of perioperative complications, reinforcing the need for careful hematologic and multidisciplinary optimization rather than a one-size-fits-all transfusion protocol [7,8].
Our own findings support this perspective. Although mortality and early prosthesis-related complications were not significantly increased, patients with SCD demonstrated greater medical morbidity, particularly pneumonia, and a substantially greater requirement for perioperative transfusion [1]. Therefore, our results should primarily be interpreted as demonstrating the considerable perioperative hematological burden associated with THA in SCD rather than supporting a particular transfusion threshold or regimen.
We therefore agree with the authors that future prospective, preferably multicenter studies should incorporate detailed hematological parameters, standardized definitions of transfusion strategies, and clinically relevant outcomes. Such studies may help identify which patients benefit most from simple transfusion, exchange transfusion, or a more conservative approach and may ultimately allow more precise, risk-adapted perioperative protocols.
We thank the authors once again for their valuable contribution to the discussion and for highlighting an important aspect of perioperative care in this challenging patient population.

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