

Red Blood Cell Transfusion In Palliative Care: What Are We Doing And Why Are We Doing It?

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In this issue of TRANSFUSION, Chin-Yee and colleagues report a systematic literature review of red blood cell (RBC) transfusion in patients receiving palliative care.¹ They importantly highlight that while RBC transfusion may provide symptomatic relief and subjective improvements to some patients, there is a paucity of high-quality evidence at this time to substantively guide or support use of this therapy during end-of-life care. Additionally, the risks of RBC transfusion in this unwell, diverse patient population are poorly characterized, making the task of conducting a proper risk-benefit analysis by ordering providers difficult.

According to the World Health Organization, palliative care is defined as “an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.”² The palliative care population is admittedly a complex and heterogeneous one, with different diseases and treatments that can adversely impact hemoglobin levels and sense of well-being. The degree and impact of anemia can be further exacerbated by other underlying co-morbidities, nutrition deficiencies and dietary intake; poor functional status and deconditioning; and health care setting and support systems available to the patient.³ As a consequence, RBC transfusion risks and thresholds used in other patient populations are not necessarily applicable in palliative care populations.

Ideal evaluations of RBC transfusion in palliative care would incorporate validated measures of objective functional changes as well as patient-reported outcomes of changes in symptoms, activity, and quality of life. While RBC transfusion seeks to directly address only a subset of the problems that face those receiving palliative care, namely those findings related to symptomatic anemia, improvements might enable patient enhancements in other areas of their lives. As documented by Chin-Yee and colleagues, high-quality studies assessing patient-reported outcomes that would capture such direct and indirect benefits of RBC transfusion are lacking. The absence of randomized controlled trials regarding the benefits of blood transfusion in this population has been noted by others.^{4,5}

Another issue for consideration is the availability and allocation of RBCs, a finite resource. Both RBC collections and utilization are decreasing in the U.S. due, in part, to increasing adherence to evidence-based transfusion guidelines and restrictive transfusion strategies.^{6,7} The resulting decrease in surplus RBC units may further influence the decision to transfuse these patients, due to the need to maintain an adequate RBC inventory for emergencies and other patient populations. While this is an ethically challenging area in the treatment of palliative care patients is not commonly considered, it is nonetheless an important issue that should not be ignored, particularly if RBCs with unique manipulations or phenotypes are necessary.^{8,9} At the University of Michigan, the impact of blood product support in terminal patients is often included by hospital ethicists in their analyses.

In palliative care, the combination of unclear benefits and risks of RBC transfusion, a heterogeneous patient population, and individualized goals of care emphasizes the need for higher quality studies in this area. Given the all-encompassing definition of palliative care, prospective trials in this area should evaluate RBC transfusion not only through the lens of traditional provider-assessed outcome measures in previously conducted clinical trials,⁶ but also through the lens of patient-reported outcomes. The goals and indications for RBC transfusion in these individuals are different from almost all other patient populations. However, selection of validated measures of provider-assessed and patient-reported outcomes that appropriately assess treatment of anemia remains challenging, as does identification of subpopulations amongst palliative care patients that would be predicted to have a benefit from RBC transfusion.

A recent international, multisite, prospective consecutive cohort study of palliative care patients with anemia-related symptoms demonstrated that just under half of patients had improvement of their worst symptom (most commonly fatigue), and only 78% of patients had improvement in any symptom, one week after RBC transfusion.¹⁰ These patients received a mean of 2 RBC units, which may reflect a difference in their hemoglobin requirements and transfusion needs compared to stable, non-bleeding patients that are hospitalized.¹¹ After logistic regression, however, no baseline factors in these transfused patients were found to be associated with improvement in worst symptoms. Of note, 12% of patients were observed to have some sort of harm associated with transfusion, although severity

deemed to be mild in all cases. While this study provides further insights into the risk-benefit ratio of RBC transfusion in the palliative care setting, additional work is necessary to better characterize the risks and benefits of RBC transfusion, as well as those sub-populations that would benefit the most from such a therapeutic intervention.

In summary, the decision to transfuse RBCs to palliative care patients is a complex one. Benefits of RBC transfusion therapy in accordance with individualized patient goals must be weighed against the attendant risks.¹² Additionally, ethical considerations regarding utilization of a finite resource such as RBCs must be considered. However, the tenets of autonomy, nonmaleficence, and beneficence need not conflict with justice.^{9,13} As investigations continue in this unique area, evidence-based improvements of RBC transfusion in palliative care will allow for better selection of patients to transfuse that are more likely to have a therapeutic benefit, reduction in the adverse reactions, and ultimately amelioration of symptoms necessitating transfusion in this multifaceted population.

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