10-1-2019

Steps to Improve Transfusion Practices for Patients with Sickle Cell Disease and Thalassemia

Georgia Health Policy Center

REdHHoTT Program Brief

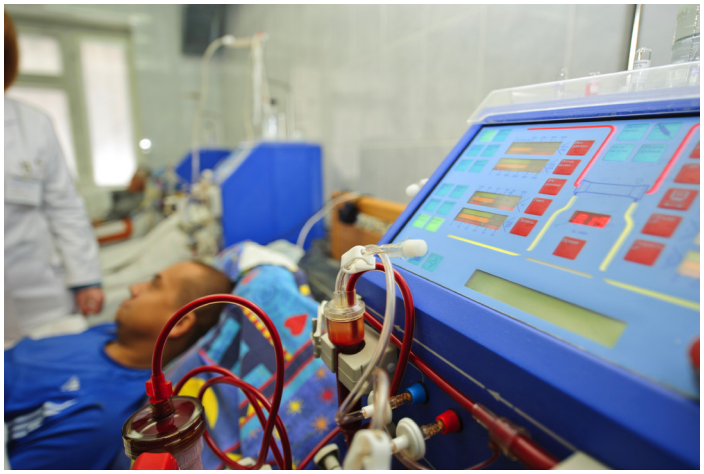
October 2019

Steps to Improve Transfusion Practices for Patients With Sickle Cell Disease and Thalassemia

Background

Georgia has one of the nation's largest populations of individuals with sickle cell disease (SCD) and thalassemia. For many of these individuals, blood transfusion may be needed on a regular, intermittent, or emergency basis. In order to avoid serious complications, like alloimmunization and iron overload, among patients who receive multiple transfusions in their lifetime, patients, physicians, and blood bank personnel need to know and follow specific, recommended practices.

The Centers for Disease Control and Prevention funds Georgia's REdHHoTT project to reduce complications of therapeutic blood transfusion in SCD and thalassemia. As part of this work, the Georgia Health Policy Center surveyed Georgia hospital transfusion services (blood banks) to gauge adherence to currently recommended practices and to inform improvement strategies.



Hospital Blood Bank Survey Results

Thirty-five institutions responded (71%), of which 32 reported experience transfusing SCD patients and 11 reported experience transfusing thalassemia patients. Responding institutions that are classified as comprehensive sickle cell treatment centers (n = 3) or thalassemia treatment centers (n = 1) follow applicable practice recommendations. Results varied among the remaining hospitals, as illustrated below.

Contact the Georgia Health Policy Center to request grand rounds or consultation with specialists in thalassemia and SCD management, transfusion medicine, and blood bank practices.
Email: BloodDisorders@gsu.edu

Watch a continuing education course, Reducing Complications of Therapeutic Blood Transfusion in Sickle Cell Disease at ghpc.gsu.edu/cme

Learn more about REdHHoTT visit bit.ly/GHPC_SCDC

* Full results were published in Fasano, R. M., Branscomb, J., Lane, P., Josephson, C., Snyder, A., & Eckman, J. (2019). Transfusion service knowledge and immunohaematological practices related to sickle cell disease and thalassemia. *Transfusion Medicine Reviews*, https://doi.org/10.1111/tme.12580

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Adherence to selected SCD transfusion recommendations[1] among noncomprehensive treatment centers	
Perform extended red blood cell phenotyping and prophylactically match units, including for ABO/Rh(D) and at least C, c, D, E, e, and Kell, to reduce likelihood of patient developing antibodies	71%
Provide sickle cell trait–negative red blood cells.	100%
Obtain patient transfusion history including locations of prior transfusions; ask blood bank to contact hospitals where patient reported receiving previous transfusions to obtain transfusion information.	
• Use a reliable method to identify SCD patients prior to transfusion, such as a required question-answer field on type, screen, or crossmatch orders	33%
• Have a routine system in place to identify SCD patients who may have received transfusions elsewhere	77%

Adherence to selected thalassemia transfusion recommendations[2] among nonthalassemia treatment centers	
Perform extended red blood cell antigen typing that includes at least C, c, D, E, e, and Kell and transfuse with units prophylactically matched for ABO and Rh (C, c, D, E, e) and Kell.	20%
Before each transfusion, run a full cross-match and screen for new antibodies, or in centers that meet regulatory requirements, an electronic cross-match.	50%

Commonly Cited Challenges

Respondents were given an open-ended question to describe challenges they face regarding transfusing patients with hemoglobin disorders. The following challenges were cited multiple times:

- Lack of standard policies/procedures (within a health system or across hospitals) for red blood cell phenotyping and blood product matching
- Securing appropriately matched red blood cell units for alloimmunized patients
- Lack of standardized procedures for notifying transfusion services that a patient has either SCD or thalassemia
- Obtaining a reliable and complete transfusion and antibody history across multiple hospital systems

What Providers Can Do

- Review the full report on this study and the practice recommendations
- View a web-based video series for clinicians on transfusion recommendations for SCD, with free continuing medical education and continuing nursing education credits provided through CDC: ghpc.gsu.edu/cme
- View a recorded webinar series for sickle cell patients and caregivers on avoiding transfusion complications, as part of the Sickle Cell Community Consortium's Warrior University: sicklecellconsortium.org/warrior-u-transfusions
- Contact the Georgia Health Policy Center to request grand rounds or consultation with specialists in thalassemia and SCD management, transfusion medicine, and blood bank practices as part of the REdHHoTT project. Email BloodDisorders@gsu.edu

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[1] SCD recommendations:
Yawn, B. P., & John-Sowah, J. (2015). Management of sickle cell disease: recommendations from the 2014 expert panel report. American Family Physician, 92(12), 1069-1076.
Davis, B. A., Allard, S., Qureshi, A., Porter, J. B., Pancham, S., Win, N., ... & British Committee for Standards in Haematology. (2017). Guidelines on red cell transfusion in sickle cell disease. Part I: principles and laboratory aspects. British Journal of Haematology, 176(2), 179.
Davis, B. A., Allard, S., Qureshi, A., Porter, J. B., Pancham, S., Win, N., ... & Ryan, K. (2017). Guidelines on red cell transfusion in sickle cell disease Part II: indications for transfusion. British Journal of Haematology, 176(2), 192-209.

[2] Thalassemia guidelines:
Taher, A., Vichinsky, E., Musallam, K., Cappellini, M. D., & Viprakasit, V. (2013). Guidelines for the management of non transfusion dependent thalassaemia (NTDT) Thalassaemia International Federation, Nicosia, Cyprus.

This publication is supported by Cooperative Agreement DD14-1406, funded by the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC or the U.S. Department of Health and Human Services.

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Improving transfusion practice through data sharing and education