LEAD Spotlight: Standardizing Recognition and Management of Sickle Cell Emergencies Necessitating Emergency Red Cell Exchanges

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Lead Attendings:

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Project Title:

Standardizing Recognition and Management of Sickle Cell Emergencies Necessitating Emergency Red Cell Exchanges

Project Summary:

Sickle cell disease (SCD) is the most common inherited blood disorder in the United States and complications of acute crisis in SCD can be life-threatening. Use of simple transfusions vs. red cell exchange (RCE) is guided by recommendations from the American Society for Hematology (ASH) and the American Society for Apheresis (ASFA). By embedding an emergency care pathway into the longitudinal care plans for patients with SCD, providers are more likely to recognize and appropriately manage these low-incidence high-risk events, which may be lifesaving for the patient.

Project Details:

Patients with SCD have a unique set of care needs and at times require rapid interventions such as transfusions to prevent morbidity and mortality. This presents challenges for frontline providers who do not see such patients on a regular basis but need to recognize these situations rapidly and accurately.

Simple transfusions have the benefit of a lower burden of red cell exposure (fewer units), do not require specialized equipment or staff, and are readily available at almost any level of care. RCE is a highly specialized form of massive transfusion that simultaneously removes and replaces blood but requires both apheresis equipment and apheresis specialists. RCE can reduce the percentage of sickle cells (HbS%) while also decreasing viscosity, reducing the burden of iron overload, and decreasing the risk for circulatory overload. Deciding between simple transfusion and RCE necessitates consultations to specialists in hematology and transfusion medicine, the availability of which varies amongst NewYork-Presbyterian hospitals.

Creating a standardized approach to recognition and consultation can prevent situations where patients may be transfused and exposed to blood unnecessarily, as well as situations where a simple transfusion or RCE was indicated but not provided.

Our project has three arms: Pathway development, Epic integration, and education. A SCD emergency pathway was created to assist frontline providers with point-of-care decision-making. To achieve this, we have met with subject matter experts and stakeholders across all NYP hospitals to come to consensus on an evidence-based, standardized approach across all NYP sites, including academic hubs, tertiary care centers, and community hospitals. This pathway is now an integrated option in longitudinal care plans (LCPs) for patients with SCD, so that all patient-facing providers having access to the same management information. Our next step will be visiting emergency departments across NYP to provide education on SCD hematologic emergencies and the new LCP-embedded pathway. A future goal is to embed clinical decision support within common Epic order sets used for patients with SCD, such as blood orders. Ultimately, we hope that by standardizing care and bringing attention to this high risk but uncommon presentation, we can support our clinicians and improve outcomes for our SCD population.