

Transfusion thresholds in adult critically ill patients

Gopal V, Selway J, Polding S

Background:

Transfusion of blood products is common in clinical practice. Paired with the obvious benefits to transfusion of blood products is the risk of increased patient morbidity and mortality. Adhering to evidence based guidelines can aid avoidance of unwarranted expenditure and reduce the risk posed to patients by transfusion of blood products.

Methods:

This audit was carried out on patients admitted to the West Suffolk Hospital Intensive Care Unit who received packed red cells (PRBCs), platelets or fresh frozen plasma (FFP). Two audit cycles examined blood products transfused in two 12-month periods: August 2014 to 2015 and August 2016 to 2017. Electronic medical records of ICU patients (Metavision) were reviewed where blood products were transfused. The clinical context was assessed with blood results pertaining to the product transfused. Trust and national guidelines were used to assess whether transfusion for each product was appropriate. The cost of blood products transfused outside guidelines was calculated. After the first audit cycle, a flow chart was devised (Figure 1). This detailed haemoglobin transfusion triggers, including those for acute coronary syndrome (ACS), traumatic brain injury (TBI) and sepsis. The flow chart was circulated to staff within the critical care department and uploaded to Metavision for reference prior to re-audit.

Results:

In 2014-2015, 274 units of PRBCs, 41 pools of platelets and 26 units of FFP were transfused. It was found that 31%, 54% and 88% were transfused within guidelines respectively. In 2016-2017, 203 units of PRBCs, 50 pools of platelets and 63 units of FFP were transfused. We discovered that 56%, 94% and 100% were transfused within guidelines respectively. The cost of wasted transfusions in 2014-2015 was £22107, which reduced to £9459 in 2016-2017.

Conclusions:

Following our initial intervention we observed a reduction in the number of avoidable transfusions across all three blood products. This naturally resulted in significant savings for the critical care department. Whilst the results are encouraging, a considerable proportion of PRBCs were transfused outside guidelines. To increase compliance with guidelines and further reduce cost, we plan to re-circulate the red cell transfusion flow chart (Figure 1) and construct a Metavision template to be completed prior to PRBC transfusion.

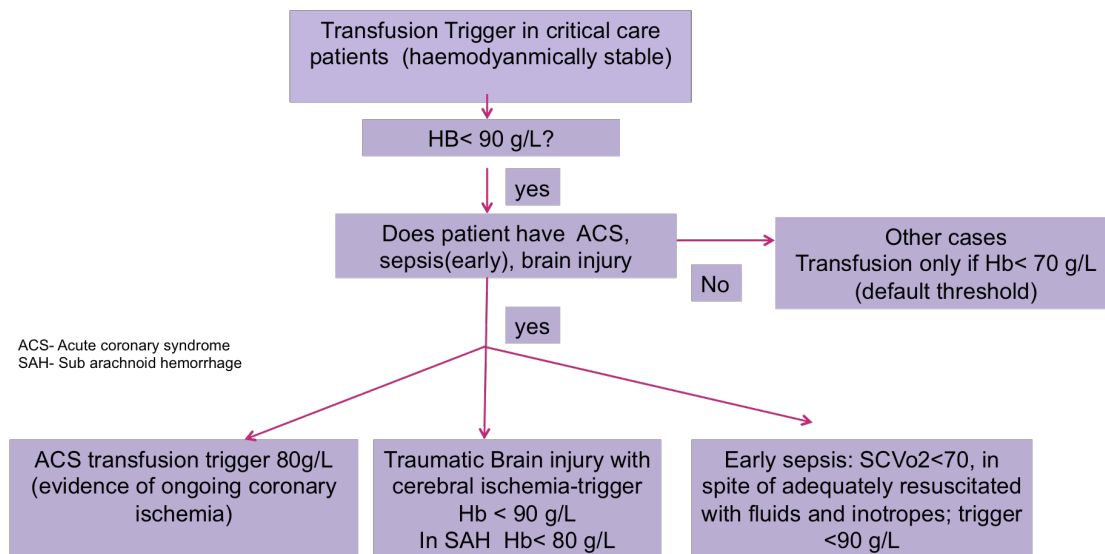


Figure 1: Red cell transfusion flow chart- outlines transfusion triggers for general ICU patients and those with ACS, TBI and sepsis.