

Two unit dosing leads to excess transfusion

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Introduction:

Red cell (RBC) transfusion decisions are often not evidence-based. While clinicians should consider whether there is a symptomatic or critical deficit in the patient's oxygen-carrying capacity/delivery, many providers still use a "transfusion trigger" to decide whether RBC should be given. Moreover, they often respond to this trigger with a routine, frequently automatic transfusion of two RBC units rather than giving one and then reevaluating the patient's condition. Little information is available regarding the outcome of this practice.

RBC units Transfused	Patients (#)	Final Hgb \geq 27 (%)	Final Hgb \geq 27 (%)	Final Hgb \geq 30 (#)	Final Hgb \geq 30 (%)
1	1,169	886	75.8%	308	26.3%
2	1,413	1,119	79.2%	597	42.3%
3	212	153	72.2%	73	34.4%
>3	239	172	72.0%	81	33.9%

Methods:

Using a blood management business intelligence portal (IMPACT Online[®], Haemonetics[®], Braintree, MA) we determined the hematocrit at discharge of transfused patients who had either unilateral total hip or knee replacements during 2010 or 2011. From a group of 20,758 patients at 15 US hospitals, we removed 105 with incomplete data, 545 without a hematocrit following their last transfusion and 1,194 who received preoperatively donated autologous blood. Of the remaining 18,914, 3,033(16%) received allogeneic RBC.

Results:

If we define excess transfusion as a discharge hematocrit \geq 27%, there was little difference between the groups. However, evaluation of those patients whose discharge hematocrit was \geq 30% revealed that those who received two unit transfusions were more likely to have been "over transfused" than those patients in the other groups. 26.3% of patients who received one unit were discharged with an Hct \geq 30%, while 42.3% of those receiving two units met that criterion. (Table)

Conclusions:

Compared to a strategy of one unit dosing followed by reevaluation, routine transfusion of two RBC leads of over transfusion. Changing this practice is a potentially valuable blood management initiative and programs should evaluate their data to determine its relevance to their institution.