

Haemoglobin triggers for red blood cell transfusion in elective surgery

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Guidelines on red blood cell transfusion in surgery, such as those from NICE¹ and NBTC², suggest a haemoglobin transfusion threshold of 70 g/l, but a higher threshold in some patients, such as those with ischaemic heart disease. These are based on research that shows a more restrictive transfusion regime is associated with fewer transfusion complications and is not associated with worse outcomes. To understand current practise we obtained the records of 107 patients who underwent elective surgeries at Addenbrookes hospital in a 12 month period. For each patient we recorded their baseline haemoglobin level, as well as their blood gas haemoglobin results before and after transfusion and the units given. We also recorded whether the patients were known to have ischaemic heart disease and where available the estimated blood loss during surgery. The average haemoglobin level before transfusion was 86.8±17.6 g/l (a drop of 29.6±19.8 g/l from baseline) and an average of 2.8±2.6 units were given, resulting in a post-transfusion level of 104.6±13.9 g/l (figure 1). The level at which anaesthetists chose to transfuse was not influenced by the presence of ischaemic heart disease, nor by the volume of estimated blood loss during the surgery. However, more units were given to patients with higher estimated blood loss. Although multiple factors influence the decision to transfuse and a clinical assessment, as well as haemoglobin levels, is critical, current practise involves transfusion of those without ischaemic heart disease at a much higher level than available guidelines suggest necessary. This may be exposing patients to more risk than benefit.

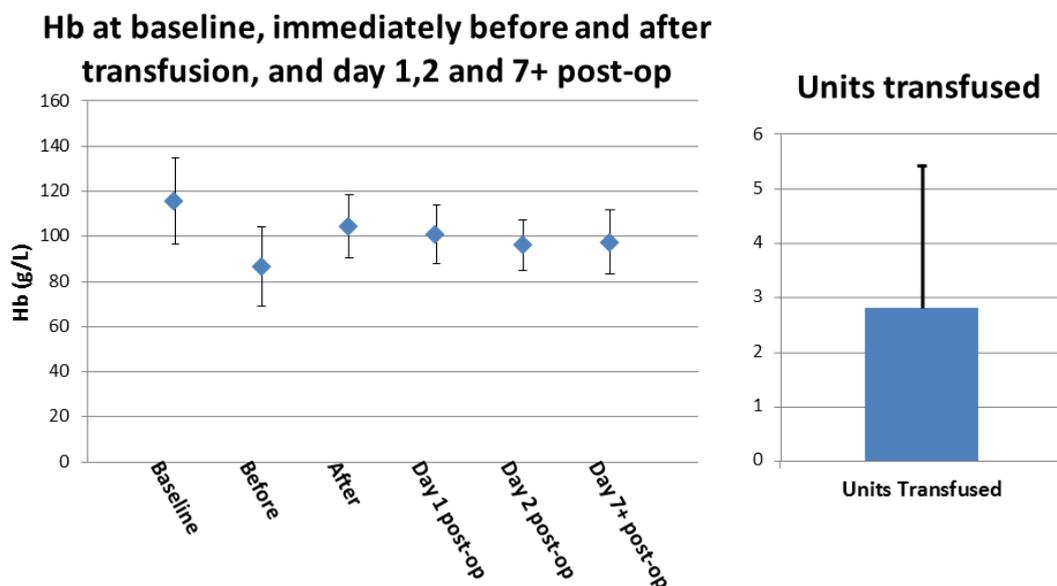


Figure 1: Hb levels and units transfused in all 107 patients

¹NICE guidelines [NG24] (November 2015)

²NBTC Indication Codes for Transfusion (April 2013)