



The long-term effects of training interventions on transfusion practice: A follow-up audit of red cell concentrate utilisation at Kimberley Hospital, South Africa



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ARTICLE INFO

Keywords:

audit
transfusion training
red cell transfusion

ABSTRACT

This audit in chronically anaemic adult patients assesses whether red cell concentrate is transfused according to guidelines, and evaluates the impact of training interventions, compared with a similar audit conducted in 2010. Retrospectively, 25 transfusion episodes were audited for appropriateness, the investigation of anaemia, threshold achievement, wastage, and informed consent. After training interventions, a further 25 episodes were prospectively analysed. The effects of current training interventions were not shown to have a statistically significant impact. Compared to a 2010 audit, however, a statistically significant improvement was demonstrated in transfusion practice, suggesting that training interventions may lead to sustainable long-term improvements.

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1. Introduction

Although approximately 85 million units of red cell concentrate (RCC) are transfused annually worldwide [1], there is wide variation in their use, suggesting that inappropriate transfusion may be widespread [2] and that current practice is not standardised. Inappropriate transfusion of RCC has been reported to vary from 12% [3] to 35.5% [4] in different settings and is possibly an underappreciated phenomenon. It may, however, also be gradually declining, as the value of a restrictive strategy is increasingly recognised [5].

In patients with chronic anaemia, most guidelines recommend that the decision to transfuse be guided by haemoglobin concentration as well as symptoms of anaemia [2,6–11]. This forms the basis of transfusion protocols at the Kimberley Hospital Complex (KHC) [12], a 656-bed secondary level training hospital in the Northern Cape Province of South Africa. The transfusion protocol applied at the Kimberley Hospital Complex is summarised in Fig. 1.

Training interventions are frequently used in an attempt to improve transfusion practices, as evident from two large reviews [13,14]. Such interventions have also led to significant improvements in transfusion practice at KHC, as found during a 2010 prospective clinical audit testing a training intervention [12]. A 2009 audit investigated RCC utilisation at KHC retrospectively [15], but did not include any training interventions.

The aim of the audit reported here was to assess current transfusion practices at KHC, in order to determine whether RCC is transfused appropriately according to guidelines, to assess the impact of current and previous training interventions, and to compare data with the results of a

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previous prospective audit [12] conducted at KHC in 2010, to evaluate the long-term sustainability of improvements in practice.

2. Materials and methods

A protocol similar to the 2010 audit [12] was used and evaluated the indication for transfusion, investigation of anaemia, appropriateness, threshold achievement, wastage, informed consent and the impact of training. The current protocol differed from the 2010 audit in that it combined both a retrospective and a prospective phase, whereas the 2010 audit consisted only of a prospective phase, which was subsequently compared with an earlier retrospective audit [15].

After approval by the Ethics Committee of the Faculty of Health Sciences, University of the Free State, Bloemfontein, South Africa (ETOVS nr. 140/2010) and the Clinical Manager of KHC, 25 consecutive transfusion episodes from 8 October 2012 to 1 November 2012 for adult patients with chronic anaemia were retrospectively analysed. Oncology, trauma, paediatric (≤ 16 years) and actively bleeding patients were excluded. This was followed by the presentation

of 1-h training sessions (from 8 November 2012 to 15 November 2012) to the departments initially found to have prescribed RCC to adult patients with chronic anaemia, namely Internal Medicine, Intensive Care, Obstetrics & Gynaecology and General Surgery. These sessions were presented as part of the departments' compulsory academic programme, reaching 73% of clinicians as indicated by attendance registers.

Similar to the 2010 training interventions, these training sessions focused not only on physiological concepts, the investigation of anaemia, and the factors that should guide the transfusion decision, but also on other available measures to minimise transfusion, as well as the impact of (at the time) recently published American Association of Blood Banks (AABB) practice guidelines [6] on the transfusion decision. After the completion of training, a further 25 transfusion episodes were prospectively analysed, concluding on 3 December 2012.

Data were collected from patient files, blood bank requisition forms and computerised laboratory results, using an audit tool based on the 2010 audit (see Appendix A), as well as similar studies done previously in Trent (Britain) [3] and Northern Ireland [9].

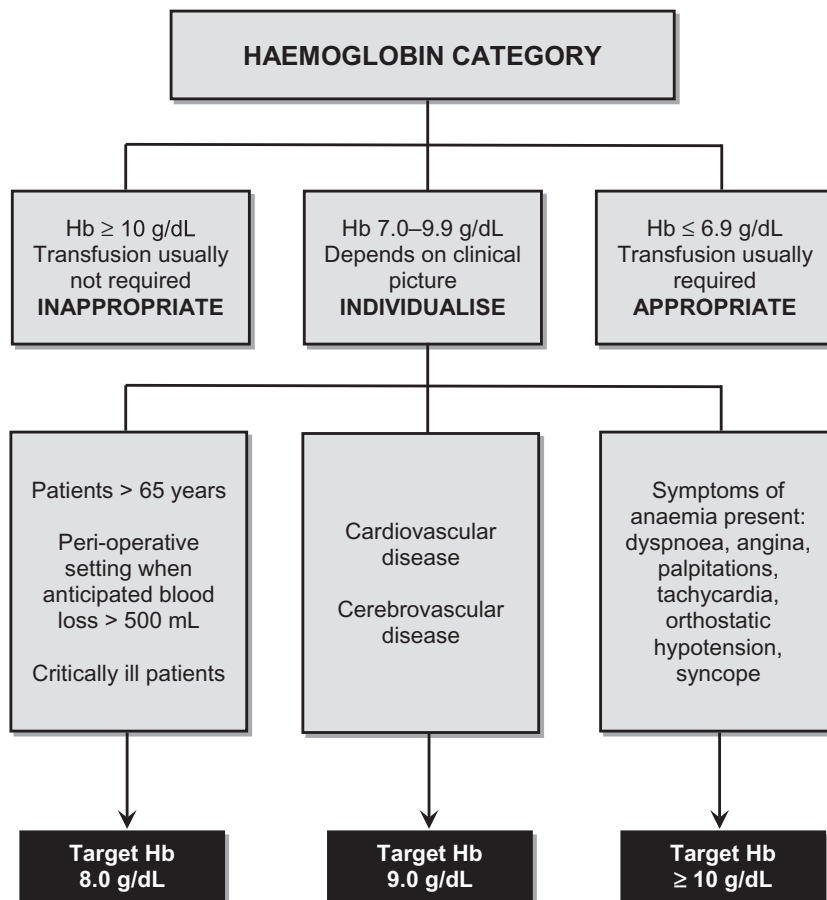


Fig. 1. Transfusion guidelines based on haemoglobin (Hb) concentration, with individualisation of the transfusion decision and target haemoglobin values in patients with pre-transfusion values ranging from 7.0 to 9.9 g/dL. Adapted from Joubert et al. [12] and the Clinical Resource Efficiency Support Team (CREST) [9].

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