

Whose care can we optimise?

Incidence of preoperative anaemia in elective general surgical patients who required perioperative blood transfusions

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Background

The adverse effects of allogenic blood transfusion (ABT) are becoming increasingly apparent. The link between preoperative anaemia and the need for perioperative ABT has been established. Preoperative anaemia has been associated with increased morbidity (increased infections, cardiovascular complications, length of hospital stay and need for intensive care admission) and both short- and long-term mortality.¹ Preoperative optimisation of haemoglobin (Hb) can lead to improved outcomes. Patient Blood Management (PBM) is an evidence-based approach to patient care and its first principle refers to preoperative optimisation of Hb.²

Aims

To evaluate the proportion of elective general surgery patients at a quaternary hospital that could potentially benefit from a PBM approach to care.

Methods

All patients who required perioperative ABT with elective general surgical procedures at the Royal Brisbane Hospital between January 1st and June 30th 2016 were identified. Electronic patient records were retrospectively analysed to obtain patients' preoperative Hb. Ethics was prospectively obtained (HREC/17/QRBH/69).

RESULTS

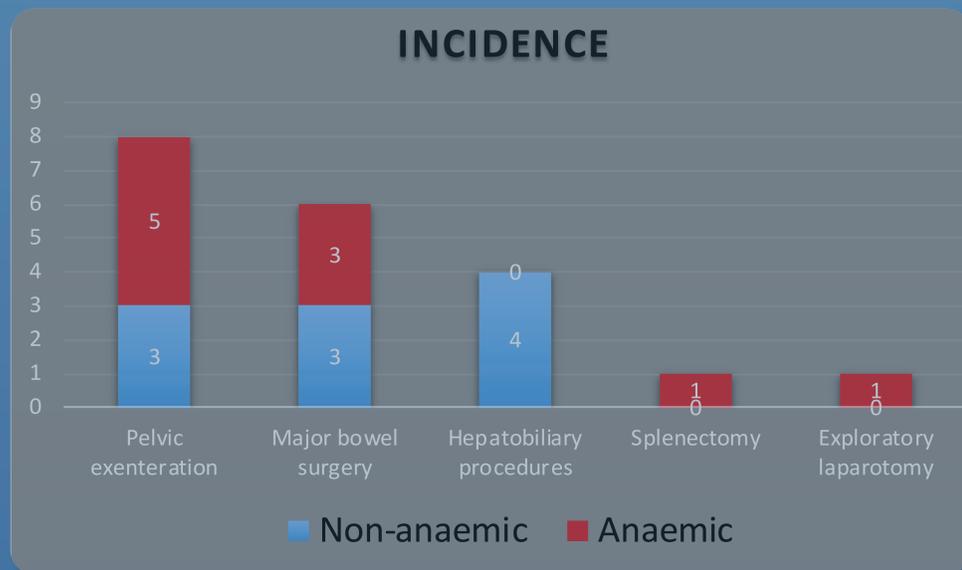


Figure 1: Incidence of preoperative anaemia (Hb <130g/L in men, Hb <120g/L in women) broken down by surgical procedure subgroup.

	Number of patients	Age range (years)	Preoperative Hb range (g/L)	Number with preoperative anaemia as per WHO definition	Number with preoperative Hb <130g/L both genders
Men	9 (45%)	46-75	71-147 (mean 113, median 106)	6 (66%)	6 (66%)
Women	11 (55%)	50-84	93-163 (mean/median 123)	4 (36%)	7 (64%)
Total	20	46-84	71-163 (mean 118, median 120)	10 (50%)	13 (65%)

Table 1: Rates of preoperative anaemia according to gender.

- Twenty elective general surgical patients required perioperative ABT, nine male (45%), eleven female (55%)
- Mean age was 65 years (range 46-84 years)
- Fifty percent (n = 10) were anaemic prior to surgery according to the World Health Organisation definitions of anaemia (Hb <120g/L in women, Hb <130g/L in men)
- Men were more likely to be anaemic than women (66% vs. 36%, respectively)
- The median and mean amounts by which patients were anaemic were both 25g/L (range 8 to 59g/L)
- Severe anaemia (Hb <80g/L) was present in one patient with a Hb of 71g/L
- The total number of patients (men and women) who had an Hb of <130g/L the day prior to surgery was 13 (65%), with three women having an Hb 120-129g/L
- The majority of patients underwent colorectal or hepatobiliary procedures, however hepatobiliary patients were not more anaemic preoperatively compared to those undergoing colorectal procedures.

CONCLUSIONS

Despite strong evidence for worse patient outcomes with preoperative anaemia and the need for perioperative ABT, a large number of patients remains – especially ‘colorectal’ patients – whose care could be improved through Patient Blood Management. Adopting the whole spectrum of PBM practice is imperative for all Australian hospitals and patients, and anaesthetists are well-positioned to take the lead for the perioperative aspect of this. Addressing perioperative anaemia with other products than ABT has to be paramount. Implementation of processes that focus on Iron Deficiency Anaemia identification and management should become a priority for all hospitals.

References:

1. World Health Organization. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. 2011.
2. Muñoz M, Acheson AG, Auerbach M, Besser M, Habler O, Kehlet H, et al. International consensus statement on the peri-operative management of anaemia and iron deficiency. *Anaesthesia*. 2017 Feb;72(2):233-247.