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## Iron deficiency in PREVENTT

Toby Richards and colleagues<sup>1</sup> suggest that current guidelines on preoperative iron therapy should be reviewed after reporting non-superiority of preoperative intravenous iron over placebo in reducing the need for blood transfusion in adults with anaemia before elective major abdominal surgery. We strongly urge for caution, favouring a more nuanced approach that considers individual circumstances and clinical context when actively managing anaemia before surgery. Similarly to other studies,<sup>2,3</sup> we showed benefits of administering preoperative intravenous iron (including a reduced need for subsequent transfusion of red blood cells [RBCs]) to patients with proven iron deficiency anaemia (ferritin <30 µg/L, or where C-reactive protein is elevated >5 mg/L, ferritin <100 µg/L or transferrin saturation of <20%).<sup>4</sup> In the study by Richards and colleagues,<sup>1</sup> the proportion of participants with absolute iron deficiency is not reported and no markers of inflammation were included, thus precluding stratification by this

diagnosis. As such, their results cannot readily inform a review of current international guidelines for the treatment of presurgical anaemia, which are framed around a confirmation of iron deficiency.<sup>5</sup>

Clarification from Richards and colleagues around the definition of the primary transfusion outcome would also aid in the interpretation of overall results. Importantly, the authors should explain if and how transfusion decisions were guided. Furthermore, given that transfusion of specific blood components can directly affect haemoglobin values (and therefore possibly prompt an RBC transfusion), further information about the breakdown of components as part of a larger transfusion would allow the reader to better understand the clinical situation which prompted the transfusion. Inclusion of blood loss data during surgery, which can also provoke RBC transfusion, would also aid in the interpretation of, and confidence in, the results.

We believe that the study by Richards and colleagues<sup>1</sup> only highlights the importance of active patient blood management, and that studies should consider the cause of anaemia and low haemoglobin, and tailor management to match the patient needs and clinical context. We argue that adjusting clinical practice based on information from this study could prove harmful to patients with iron deficiency anaemia undergoing surgery in the future.

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Toby Richards and colleagues<sup>1</sup> found no difference in the need for blood transfusions between the group receiving preoperative intravenous iron versus those receiving placebo. This finding is not surprising and was a consequence of poor study design that disregarded all knowledge on preoperative anaemia treatment, iron metabolism, and ferric carboxymaltose indications and contraindications.

Ferric carboxymaltose is used to treat iron deficiency in cases where oral forms cannot be given or are ineffective.<sup>2</sup> Laboratory tests, which were not done in the study by Richards and colleagues,<sup>1</sup> are essential to diagnose iron deficiency. Additionally, patients with preoperative anaemia were included even though anaemia not caused by iron deficiency is a contraindication. Iron parameters were rarely measured and not specified as an inclusion criterion. Even if iron parameters were considered, anaemia of inflammation (also known as anaemia of chronic disease) frequently occurs preoperatively.

In elective cardiac surgery nearly 50% of patients have C-reactive protein higher than 5 mg/L.<sup>3</sup> The pathophysiology of anaemia of chronic disease is characterised