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Preoperative anaemia – systematic assessment and treatment needed

INVITERT KOMMENTAR

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Preoperative anaemia is associated with increased mortality and morbidity following major surgery. In most cases, the anaemia is related to iron deficiency, but serum ferritin is measured only in a minority of patients.

In this edition of the Journal of the Norwegian Medical Association, Stefors et al. publish a study on the prevalence and management of anaemia in patients undergoing major surgery (1). They found that many patients were anaemic preoperatively but that serum ferritin was only measured in a quarter of these cases.

Between 30 and 50 % of patients scheduled for surgery are anaemic, and in up to 80 % of cases, the anaemia is related to iron deficiency (2). The cause may be related to bleeding associated with the condition for which the patient is undergoing surgery, for example, a bowel tumour. In other cases, the cause may be entirely different, such as a woman of reproductive age who is scheduled for knee replacement surgery. Other causes of preoperative anaemia include deficiencies of vitamins such as B12 and folate, and anaemia secondary to inflammation or malignancy. In rare cases, the cause is a bone marrow disorder, such as myelodysplastic syndrome, in which isolated macrocytic anaemia may be the only finding.

Blood transfusion in connection with surgical procedures is associated with various risks, including transfusion reactions and fluid overload. In evidence-based programmes for good transfusion practices, preoperative pharmacological treatment of

anaemia in planned surgery is one of the key measures for achieving the best possible outcome. In addition, efforts are made to avoid unnecessary blood tests, optimise surgical haemostasis and follow a restrictive transfusion strategy (3).

Identifying iron-deficiency anaemia well in advance of a planned procedure allows for initiation of oral iron supplementation, which is safe, effective and inexpensive. Oral supplementation is recommended as the first-line treatment, with alternate-day dosing shown to be effective while improving tolerability and adherence compared with daily administration (4). If oral therapy is ineffective, absorption is impaired, or there is limited time before surgery, intravenous iron supplementation can be administered.

> ***«Identifying iron-deficiency anaemia well in advance of a planned procedure allows for initiation of oral iron supplementation, which is safe, effective and inexpensive»***

The study by Stefors et al. included 293 adult patients undergoing surgery with a risk of over 500 mL blood loss. The procedures were in urology, gastrointestinal surgery, gynaecology and orthopaedic surgery. Ninety-nine patients (34 %) had preoperative anaemia, defined according to international guidelines as haemoglobin < 13 g/dL in women and men (2). This finding is consistent with the prevalence reported in larger European studies. In addition to assessing the prevalence of anaemia, the study examined the use of treatment interventions, such as red blood cell transfusion and iron therapy. Serum ferritin was only measured in 25 % of patients with preoperative anaemia in the specialist health service. Among those with anaemia, 27 % received iron prior to surgery, either as oral tablets prescribed in primary care or intravenously.

Twenty-nine patients (10 %) received red blood cell transfusions, while for some patients an 'untreated anaemic interval' was observed, during which they received neither erythrocyte transfusion nor any other treatment for their anaemia. The authors caution that the study is retrospective and that they did not specifically investigate any potential complications of preoperative anaemia.

In an editorial in the Journal of the Norwegian Medical Association in 2023, the Norwegian Society for Immunology and Transfusion Medicine called for the introduction of a national PBM (patient blood management) programme to optimise the management of preoperative anaemia in Norway (3). The programme aims to improve clinical outcomes, has documented health economic benefits (3, 5) and was strongly recommended by the WHO as early as 2021 (6). Stefors et al. demonstrate in their article that urgent action is needed. Many patients with anaemia had not had their iron status assessed, and only a minority had received iron supplementation. Several patients had not had their haemoglobin measured prior to surgery, despite the risk of significant blood loss during the procedure.

In Norway, a PBM working group has been established, composed of specialists in clinical transfusion medicine who are committed to improving patient safety and transfusion practices (7). One of the initiatives they are working on is devising basic guidelines intended to raise awareness among clinicians about this important topic (A. Espinosa, personal communication).

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