across the three groups. The authors reported a significant increase in Hb between the time of treatment initiation and the sixth postoperative day ($P < 0.001$) in group A. There was a similar increase for RBCs ($P < 0.001$), Hct ($P < 0.001$) and reticulocyte percentage ($P < 0.001$). Additionally, at the third ($P = 0.004$, $P = 0.006$) and sixth ($P < 0.001$, $P < 0.001$) postoperative day, Hb levels for group A were higher than for groups B and C, with no statistically significant difference between group B and group C at these time points. Group A patients received fewer blood transfusions during the peri-operative period with no complications observed secondary to rHuEPO administration combined with iron sucrose.

In a recently published Cochrane systematic review, Kaufner *et al.*[746] evaluated the efficacy of pre-operative rHuEPO therapy (subcutaneous or parenteral) with iron (enteral or parenteral) in reducing the need for allogeneic RBC transfusion in anaemic adult noncardiac surgical patients (RR 0.55; 95% CI 0.38 to 0.80; participants $n = 1880$; studies $n = 12$; $I^2 = 84\%$). Most trials were in orthopaedic, gastrointestinal and gynaecological surgery (mild-to-moderate preoperative anaemia, Hb 10 to 12 g dl^{-1}). Two RCTs referred to the gynaecological setting.[747,748]

Combined administration of rHuEPO + iron was found on average to be associated with a mean 231 fewer individuals in need of transfusion for every 1000 individuals compared with the control group.

A recently conducted RCT assessed the benefit and safety of rHuEPO in combination with i.v. iron sucrose versus i.v. iron sucrose alone for the management of IDA in gynaecological patients ($n = 334$) pre-operatively.[749] Mean Hb level at day 14 among the iron sucrose-only group was 10.59 ± 1.21 g dl^{-1} while among women in the iron sucrose with rHuEPO group, Hb was 11.9 ± 0.62 g dl^{-1} ($P < 0.05$).

Moderate-quality evidence in favour of pre-operative rHuEPO + iron therapy for anaemic adults was reported, resulting in a reduced need for RBC transfusion. Higher doses (500 to 600 IU kg^{-1} body weight) seem to increase the Hb concentration versus lower doses of 150 to 300 IU kg^{-1} body weight. No increase in the risk of adverse events were reported.

Coagulation monitoring and treatment

Antifibrinolytics

In a Cochrane systematic review, Kietpeerakool *et al.*[750] examined the effectiveness of TXA (15 mg kg^{-1}) for advanced ovarian cancer surgery. Only one study met inclusion criteria.[751] The authors found insufficient evidence to recommend the routine use of TXA with a total estimated blood loss of 668.34 versus 916.93 ml. In this double-blind RCT of 100 women with ovarian cancer, the total blood loss volume and transfusion rate were significantly lower in the intervention group (median total blood loss of 520 versus 730 ml; $P = 0.03$) with the incidence of transfusion reduced (30 versus 44%; OR 0.44; 95% CI 0.97; $P = 0.02$).

In a single-centre, double-blinded RCT, 80 women undergoing open abdominal myomectomy were randomised to either tourniquet plus i.v. TXA 10 mg kg^{-1} or tourniquet plus placebo.[752] The authors found higher mean (±standard deviation) intra-operative blood loss (998.72 ± 607.21 versus 907.25 ± 529.85 ml; $P = 0.475$), intra-operative blood transfusion rate (45 versus 30%; $P = 0.166$) and mean units of blood transfused (1.13 ± 1.64 versus 0.75 ± 1.28; $P = 0.256$) in the control group compared with tourniquet plus TXA group. Additionally, the estimated blood loss per 100 g of fibroid removed was 139.80 ± 2.28 versus 104.09 ± 1.97 ml ($P = 0.001$) in the intervention group.

In a double-blind RCT, 60 women with symptomatic fibroids received a single bolus i.v. TXA 15 mg kg^{-1} in the intervention arm versus 0.9% saline of equivalent volume 20 min before the initial surgical incision.[753] Overall, 53% of patients had laparoscopic myomectomy, 40% had robotic myomectomy, whereas 7% had laparotomy. The authors found no significant reduction in peri-operative bleeding (200 versus 240 ml; $P = 0.88$) or change in peri-operative Hb (1.00 versus 1.1 g dl^{-1}; $P = 0.64$).

The findings of this study contradict the findings of a previously published double-blinded multicentre RCT among 332 women undergoing benign abdominal, laparoscopic or vaginal hysterectomy who were randomised to either 1 g i.v. TXA or placebo at the start of the surgery.[754] In this study, the authors found a statistically significant reduction of intra-operative blood loss in the intervention group (100 versus 166 ml kg^{-1}; $P = 0.004$). There was a significant reduction in the incidence of blood loss at least 500 ml (6 versus 21; $P = 0.003$), the use of open-label TXA (7 versus 18; $P = 0.024$) and the risk of re-operation secondary to postoperative haemorrhage (2 versus 9; $P = 0.034$) in the intervention group. Although no SAEs were reported, absolute risk reduction of 4.2% and number needed to treat of 24 was reported in favour of TXA.

Further evidence in favour of TXA for reducing blood loss and transfusion requirements among women undergoing myomectomy was provided by a systematic review including four RCTs of women of reproductive age undergoing abdominal, laparoscopic, robotic or hysteroscopic myomectomy.[755] However, only 313 women were included in the analyses, only three studies were eligible for meta-analyses and overall risk of bias was moderate across the reported studies. TXA significantly reduced intra-operative blood loss (mean difference 213.1 ml; 95% CI −242 to −183.7) and postoperative blood loss (56.3 ml; 95% CI −67.8 to −44.8). However, no significant differences were detected for transfusion requirement.