Perioperative intravenous iron, with or without erythropoietin, plus restrictive transfusion protocol reduce the need for allogeneic blood after knee replacement surgery.

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BACKGROUND: Unilateral total knee replacement (TKR) results in a substantial blood loss and 30 to 50 percent of patients receive allogeneic blood transfusion (ABT). Therefore, the effectiveness of a restrictive transfusion trigger (hemoglobin [Hb] level < 8 g/dL) plus stimulation of erythropoiesis was evaluated, with or without blood salvage, for reducing ABT in TKR patients.
STUDY DESIGN AND METHODS: A series of 139 consecutive of primary TKR patients received perioperative iron sucrose (2 x 200 mg/48 hr, intravenously [IV]), plus preoperative erythropoietin (EPO; 1 x 40.000 UI, sc) if preoperative Hb level was less than 130 g per L (Group A). This protocol was applied to another series of 173 consecutive TKR patients who also received postoperative unwashed shed blood (USB) if preoperative Hb level was less than 130 g per L (Group B). Perioperative clinical and laboratory data were gathered.
RESULTS: No adverse effects of iron sucrose, EPO, or USB administration were witnessed, and only 13 patients received ABT overall (4%). No major differences in perioperative blood counts or iron metabolism variables were observed between groups, but stimulation of erythropoiesis seemed to be more pronounced in those patients receiving EPO ($p < 0.05$). There were no differences in postoperative complications between groups, but length of hospital stay for patients with a preoperative Hb level of less than 130 g per L was shorter in Group B ($p < 0.05$). CONCLUSION: This blood saving protocol seems to be effective for reducing ABT in TKR patients. Which patients are more likely to benefit from either perioperative iron administration or selective addition of postoperative blood salvage to pharmacologic treatment, however, needs to be further evaluated.