

## **Pre-operative oral iron supplementation reduces blood transfusion in colorectal surgery - a prospective, randomised, controlled trial.**

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**INTRODUCTION:** Allogeneic blood transfusion confers a risk to the recipient. Recent trials in colorectal surgery have shown that the most significant factors predicting blood transfusion are pre-operative haemoglobin, operative blood loss and presence of a transfusion protocol. We report a randomised, controlled trial of oral ferrous sulphate 200 mg TDS for 2 weeks' pre-operatively versus no iron therapy. **PATIENTS AND METHODS:** Patients diagnosed with colorectal cancer were recruited from out-patient clinic and haematological parameters assessed. Randomisation was co-ordinated via a telephone randomisation centre. **RESULTS:** Of the 49 patients recruited, 45 underwent colorectal resection. There were no differences between those patients not receiving iron (n = 23) and the iron-supplemented group (n = 22) for haemoglobin at recruitment, operative blood loss, operation duration or length of hospital stay. At admission to hospital, the iron-supplemented group had a higher haemoglobin than the non-iron treated group (mean haemoglobin concentration 13.1 g/dl [range, 9.6-17 g/dl] versus 11.8 g/dl [range, 7.8-14.7 g/dl]; P = 0.040; 95% CI 0.26-0.97) and were less likely to require operative blood transfusion (mean 0 U [range, 0-4 U] versus 2 U [range, 0-11 U] transfused; P = 0.031; 95% CI 0.13-2.59). This represented a cost reduction of 66% (47 U of blood = pound4700 versus oral FeSO<sub>4</sub> at pound30 + 15 U blood at pound1500). At admission, ferritin in the iron-treated group had risen significantly from 40 microg/l (range, 15-222 microg/l) to 73 microg/l (range, 27-386 microg/l; P = 0.0036; 95% CI 46.53-10.57). **CONCLUSIONS:** Oral ferrous sulphate given pre-operatively in patients undergoing colorectal surgery offers a simple, inexpensive method of reducing blood transfusions.