

Management of iron deficiency anaemia in the colorectal cancer patient  
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- IDA effects post-operative recovery and delays adjuvant treatment
- A major outcome was the acknowledgement that IDA should be treated at the beginning of the diagnostic pathway providing time for optimal correction of IDA prior to definitive treatment
- The colorectal multidisciplinary team (MDT) agree that correction of IDA can be considered a primary treatment
- Pre-operative assessment for all major surgical planned admissions at Poole now includes assessment for anaemia with onward referral as appropriate

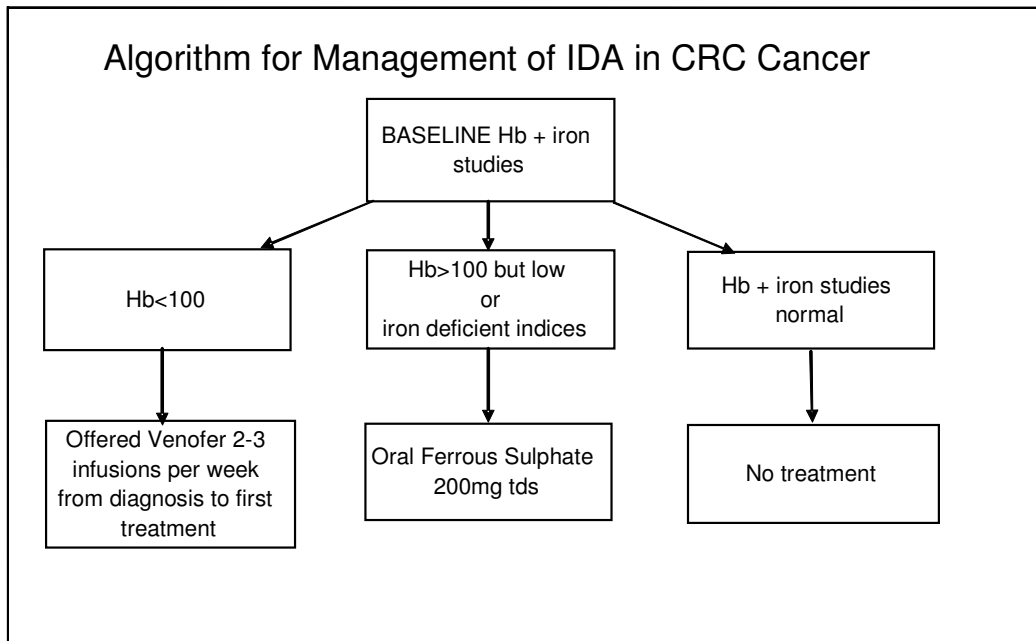
Patients presenting with colorectal cancer (CRC) often have IDA (iron deficiency anaemia). As a consequence many will require a blood transfusion pre, peri or post-operatively. Anaemia can effect post-operative recovery and delay adjuvant treatment. There is, in addition, some evidence to suggest that peri-operative transfusions should be avoided. Furthermore, any blood transfusion carries risk and blood is a limited resource.

Current practice was assessed prior to looking at alternative approaches to the management of IDA in CRC patients. A three month baseline audit (April to June 2007) was undertaken. Baseline haemoglobin levels (Hb), MCV (mean corpuscular volume) and iron studies were undertaken at time of diagnosis. Hb and MCV were rechecked at pre-clerking stage, immediately after surgery and then again 4 – 6 weeks post-operatively. A record was taken of how the anaemia was managed for each patient.

During the study period 22 newly diagnosed CRC patients were identified. Of these 19 were analysed (there were incomplete records for 3). IDA was confirmed in 9 of the 19 patients. No blood transfusions were required in the 10 non-anaemic patients. In contrast, 8 of the 9 anaemic patients received a transfusion requiring a total 26 units of blood. All of these patients had 'right sided' CRC. The only 'right sided' CRC patient who did not require a blood transfusion had been referred through the IDA clinic and had received appropriate iron supplementation.

The study was repeated between September and November 2007 using the treatment algorithm as shown in Figure 1. Treatment was based on Hb and iron indices at time of diagnosis of CRC.

Figure 1



Data was collected on 37 patients with a new diagnosis of CRC over the study period and analysis undertaken on 30 patients. (7 patients excluded: 2 did not have primary bowel cancer; 4 were complex palliative care presentations and 1 patient presented as an emergency and was not fully evaluated for IDA). Blood transfusions were required by 15 patients who received a total of 53 units of blood.

At the time of diagnosis 17 patients did not have IDA, 5 of these were transfused requiring a total of 20 units of blood. IDA was confirmed in 13 patients at the time of diagnosis and required 33 units of blood in total. A more detailed breakdown of these results is as follows:

- 3 patients with IDA were successfully treated with iron and did not require a blood transfusion
- 3 patients who were partially treated with iron required 8 units of blood in total. One patient was actively bleeding and as a consequence of active treatment and monitoring avoided emergency surgery but did need transfusion. The two others did not have time for a full course of intravenous iron treatment prior to their planned date of surgery
- 3 patients were transfused pre-diagnosis as they were symptomatic and received a total of 9 units of blood
- 2 patients were transfused following major post-operative complications requiring a total of 13 units of blood

- 2 patients received blood transfusions, in total 3 units of blood, that in retrospect could have been avoided.

Thus in the anaemic group 33 units of blood were transfused. It was concluded that 10 units of blood could have been avoided using different treatment decisions. Three patients avoided a blood transfusion, which was regarded as a success, as was the management of the actively bleeding patient. A major outcome was the widespread acknowledgement that IDA should be treated at the beginning of the diagnostic pathway providing time for optimal correction of IDA. Furthermore, the colorectal multidisciplinary team (MDT) agreed that correction of IDA can be considered as a primary treatment.

As a consequence of the second audit IDA in CRC patients is actively managed from the time of diagnosis using either oral iron, or when appropriate a total dose iron infusion, thereby reducing hospital visits whilst rapidly achieving effective correction of IDA. In addition, the pre-operative assessment of all major surgical planned admissions at Poole now includes assessment for anaemia with onward referral as appropriate.