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Iron Deficiency Anaemia In General Practice: Presentations and Investigations

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ABSTRACT

Twenty six patients over the age of 50 years with proven iron deficiency anaemia were identified, investigated and followed up in general practice over a five year period. The anaemia was symptomatic in 50% of patients but only 20% had symptoms related to the gut. Faecal occult blood testing was positive in five patients only and negative tests occurred in three patients with significant disease, including one caecal carcinoma. All patients agreed to oesophagogastroduodenoscopy (OGD) and fiberoptic sigmoidoscopy carried out on the same occasion. In eight patients, significant abnormalities were found on OGD and in two patients on sigmoidoscopy. Four patients declined barium enema examinations, two of whom had significant OGD abnormalities. Barium enema examination of the other 22 patients showed polyposis of the colon and a caecal carcinoma and initially missed one carcinoma of the caecum which was found subsequently. The likelihood of finding significant disease in iron-deficient patients over 50 years of age is

high and should be assumed to be due to blood loss into the gut. Investigation by OGD, sigmoidoscopy and barium enema in the first instance seems warranted and is a condition that can be safely managed by the GP. (*Br J Clin Pract* 1997; **51(2)**: 78-80)

INTRODUCTION

Hospital based studies have concluded that the management of patients presenting with iron deficiency anaemia, in the absence of an obvious alternative cause, should include an investigation of the gastrointestinal (GI) tract by endoscopy, duodenal biopsy, sigmoidoscopy and barium enema, despite the absence of gastrointestinal symptoms^{1,2,3}. This recommendation is based on the high prevalence of gastrointestinal pathology in iron deficient patients especially if aged 50 years or over. These studies have often been based on hospital referrals and may have over-estimated the number of patients with significant gastrointestinal pathology when compared with those patients who present with iron deficiency anaemia to their own general practitioners. A recent study which looked at anaemic patients, identified by laboratory results, suggested that there is still a failure to investigate many of these patients adequately⁴. In the elderly, there may be borderline dietary deficiency but diet should not be assumed to be the cause of iron deficiency⁵. The main aims of the present study were to examine the prevalence and mode of presentation of iron deficiency in patients over 50 years of age in general practice, to evaluate how far the GI tract of these patients should be investigated and to see whether this could be carried out adequately from general practice in accordance with agreed guidelines.

SUBJECTS AND METHODS

The study was conducted between January 1989 and March 1994 in a semi-rural practice. The patient list size varied between 2400 - 3400 patients during the study period. All patients over 50 years of age found to have iron deficiency anaemia were entered into the study. Iron deficiency was suspected when a low haemoglobin, <12 g/dl and/or a low mean corpuscular volume (MCV), <80 fl, was present and confirmed by ferritin level of 16 ng/l or less. A history including a full drug history was taken, and physical examination performed. It was explained to patients that iron deficiency, in the non-menstruating patient, is nearly always due to blood loss into the gastrointestinal tract or can be associated with malabsorption syndromes. Tests would be needed to confirm or exclude these causes but patients could refuse further investigations at any time in the study.

The following tests were carried out when possible on these patients, faecal occult bloods on three separate samples using the haemocult test, upper gastrointestinal endoscopy (to include a duodenal biopsy), flexible sigmoidoscopy and the double contrast barium enema. The two endoscopic procedures were carried out on the same occasion.

All patients were treated with iron supplements until the haemoglobin and ferritin levels returned to normal. The general practitioner alone without hospital admission investigated all patients, apart from one patient who required blood transfusion and hospital admission because she developed a melaena at the time she was found to be anaemic.

Patients were followed up during the five years study period. Further tests were carried out if the iron deficiency was not corrected adequately or if indicated clinically.

RESULTS

Twenty-six patients were found to have iron deficiency during the study period (**Table 1**). One patient had normal haemoglobin but was microcytic (78 fl). One patient had a normal MCV but was anaemic (9.3 g/dl). Symptomatic patients were those presenting with symptoms of anaemia such as dyspnoea or worsening angina. Those patients who were noted to have signs of anaemia such as pallor, smooth tongue or angular cheilosis were called observational anaemic patients. Investigational anaemic patients were those who were found to be anaemic during the course of screening for other medical conditions. Only five (19%) of all patients had symptoms which were related to the GI tract namely diarrhoea (2 patients), melaena (1 patient), heartburn (2 patients).

Twenty-two (84%) of the patients had faecal occult blood tests but only five were found to be positive. A probable cause for these positive tests was found in four of these - gastric ulcer (1 patient), polyposis coli (1 patient), ulcerative colitis (1 patient) and the use of a NSAID (1 patient). Of the seventeen patients with negative occult blood tests, one was subsequently found to have both grade III oesophagitis and a tubulo-villous adenoma of the recto sigmoid junction and one patient was later shown to have caecal carcinoma.

The endoscopic and radiological findings of the patients are summarised in **Table 2**. Endoscopy revealed significant disease in eight patients, which could have accounted for the iron deficiency. The patient who was microcytic but not anaemic was found to have coeliac disease. The oesophagitis was considered significant only

when associated with moderate or severe ulceration. Two patients had dual pathology and two of the patients with oesophagitis had a Barrett's oesophagus. All patients had upper gastrointestinal endoscopy and flexible sigmoidoscopy but four patients refused barium enema examination. Two of these four patients had significant upper GI tract findings: coeliac disease (1 patient) and antral erosions (1 patient). The other two patients had previously taken NSAIDs. None of the four patients who declined a barium enema examination developed further gastrointestinal symptoms or persistent anaemia to warrant additional investigation of the alimentary tract during the period of follow up.

The twenty-two barium enema examinations gave a diagnosis in two patients - polyposis coli limited to the transverse colon and a carcinoma of the ascending colon. The recto sigmoid polyp seen at sigmoidoscopy was confirmed. In the third patient a caecal carcinoma was subsequently found but was not reported on the initial barium enema. This patient failed to respond adequately to iron supplements although further occult blood testing remained negative. The patient was referred for colonoscopy but this was unsatisfactory in view of severe diverticular disease. She subsequently developed a right iliac fossa mass at three years and a subsequent laparotomy revealed a carcinoma of the caecum. One other patient over the study period failed to respond adequately to iron supplements, again with persisting negative occult blood tests. This patient showed a good response to treatment with Omeprazole, as it was thought that her oesophagitis was causing the blood loss and at five year follow up she remains well and asymptomatic. There were eight patients who had taken NSAIDs regularly and in only one of these was a significant lesion found (gastric ulcer) to account for the anaemia. During the study five patients died: four at 2 years and one at 4 years. The causes of death were unrelated to the previous iron deficiency anaemia.

DISCUSSION

This prospective study has confirmed that patients over the age of 50 who were found to have an iron deficiency anaemia in general practice warrant investigation of the gastrointestinal tract, unless contra-indicated by an obvious alternative cause or undue patient frailty. There should be a low threshold for suspecting the anaemia, which may present with symptoms or on examination as well as during the investigation of other disorders. The general practitioner should not be influenced by the absence of symptoms related to the gut, or by negative occult blood testing.

Currently, it is not clear whether the upper GI tract and the colon need to be investigated in all patients^{6,7}. Data both from this and a larger study⁷ found that 8% and 16% elderly patients respectively, with an endoscopic benign upper GI lesion, were found to have coincidental colonic neoplasms. This relatively high incidence of dual pathology has prompted the suggestion that mandatory colonic assessment is necessary in such elderly patients with iron deficiency anaemia and benign upper GI lesions⁷. In this respect we prefer a combined approach rather than starting with large bowel studies and then moving to the upper gut if these are negative. To some extent the choice and timing of tests will depend on local facilities. In this study an OGD and sigmoidoscopy could be arranged more readily than a barium enema examination or colonoscopy and did not delay investigation of the large bowel. The local X-ray Department rules require a sigmoidoscopy for an open access barium enema service, but this requirement may be unnecessary with patients with iron deficiency. Colonoscopy is a very reasonable alternative to fiberoptic sigmoidoscopy and barium enema and we are now using this increasingly as a first line test. A colonoscopy would have had advantages in the present study, as the three colon abnormalities not identified at sigmoidoscopy all required laparotomy. Barium meal studies are not an adequate alternative to OGD as oesophagitis can easily be missed, gastric ulcers will need biopsy and a duodenal biopsy is needed for diagnosis of coeliac disease. The last can be expected in about 10% of patients over the age of 65 who are being investigated for anaemia but there is still often a long delay before the diagnosis is made⁸ and other features of malabsorption, including bone disease may go untreated.

Approximately 30% of our patients were on treatment with NSAIDs and only one of these had significant disease (gastric ulcer). The anaemia in the remainder was treated with iron and stopping the NSAID. The anaemia did not recur during the period of follow up. In these patients blood loss may well occur from the small bowel which may be assessed by enteroscopy or labelled red cell studies but more detailed assessment was not felt indicated in this study. The approach to the patient with an iron deficiency anaemia on treatment with NSAIDs remains unclear - in some patients there may be a complex underlying illness such as rheumatoid arthritis, others may be very frail and it is possible that treatment with NSAIDs may reduce the frequency of growths in the colon although at the moment this is speculative. We would encourage the use of prophylactic therapy such as Misoprostol with NSAIDs, which may well reduce the blood loss into the gut⁹. Confirmation of iron deficiency in these patients can also be difficult, as ferritin or iron

studies may be misleading in the presence of chronic inflammatory disease.

Partial gastrectomy presents a similar problem as regards the need for investigation. In this survey one of the two patients with a partial gastrectomy also had a carcinoma of the colon.

The present study emphasizes that the follow up of those with iron deficiency can be carried out very effectively from general practice. This may allow a better correlation of the response to treatment with iron and the detection of subsequent relapse, illustrated by the one patient who failed to respond adequately to iron and who was subsequently found to have a carcinoma of the caecum. An earlier study¹⁰ had shown that significant disease is unlikely to emerge on prolonged follow up after initial assessment with OGD and the barium enema examinations but we would recommend that those patients where the anaemia fails to resolve should be kept under review as regards the need for further investigation.

In conclusion, this prospective study shows that the number of patients over the age of 50 who present with iron deficiency anaemia to any one general practitioner is likely to be small. Arranging the relevant tests rather than referring to Out Patients expedites assessment. This should lead to earlier treatment although discussion may be needed about the management of those where the response to treatment is inadequate.

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Table 1. Patients found to have iron deficiency during study

Patient Details	
Number with anaemia	26
Age	51-87 years
Female	21
Male	5
Presentation of the anaemia	
Symptomatic	13
Examination	8
Investigation for other reasons	5
Symptoms relating to the GI tract	
Heartburn	2
Diarrhoea	2
Melaena	1

Table 2. The endoscopic and radiological findings of those patients where a positive diagnosis was made

	Upper GI endoscopy (n=26)	Flexible sigmoidoscopy (n=26)	Double contrast barium enema (n=22)
Oesophagitis	3		
Oesophagitis/gastric ulcer	1		
Erosive gastritis	1		
Partial gastrectomy	2		
Coeliac disease	1		
Tubulovillous adenoma		1	
Caecal carcinoma			1
Ulcerative colitis		1	
Polyposis coli			1

Note: Oesophagitis recorded only when moderate or severe and in three patients associated with Barrett's oesophagitis.
An additional carcinoma of the colon found on follow-up