

Retrospective analysis of full blood counts and iron studies on patients diagnosed with bowel cancer.

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INTRODUCTION

Traditionally, patients with colon cancer have a stereotypical presentation of hypochromic microcytic anaemia. Whilst these profiles are useful in the aid of diagnosis, they should be challenged to ensure that they remain correct.

AIM

- To investigate the association between changes in a patient's blood counts and haematinics, and the diagnosis of colon cancer
- To evaluate the clinical utility of lab results in identifying pre-symptomatic patients with colon cancer

METHOD

- A retrospective study was conducted on patients who had been diagnosed with colon cancer using endoscopy at Derriford Hospital over a six-month period beginning January 2019 (n=88).
- Full blood counts (FBCs) and haematinics (transferrin saturation, serum ferritin) were evaluated in these patients at diagnosis, 6, and 12 months prior to diagnosis where possible.
- Anaemia was defined as Hb <120g/L for women and <130g/L for men. Microcytosis was defined as MCV<80fL (1); Hypochromia MCH<28pg.

REFERENCES

- Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity [Internet]. World Health Organization. 2020 [cited 26 October 2020]. Available from: <https://www.who.int/vmnis/indicators/haemoglobin/en/>

RESULTS

- All patients had FBCs within 12 months of diagnosis, in which 74% (65/88) had anaemia.
- Through the 3 timeframes anaemia was not constant (Figure 1, 2, and 3).
- Of those patient with anaemia within 12 months of diagnosis, 46% (30/65) had microcytic anaemia, and 66% (43/56) had hypochromia (<28pg).
- The proportion of anaemic patients with hypochromia was variable through the different timeframes we reviewed (Figure 4).
- 53% of patients with hypochromia had low serum ferritin level (<30mcg/l).
- Within 12 months of diagnosis, 62% (26/42) patients had ferritin <30mcg/L and 86%(18/21) had transferrin saturation <20%.

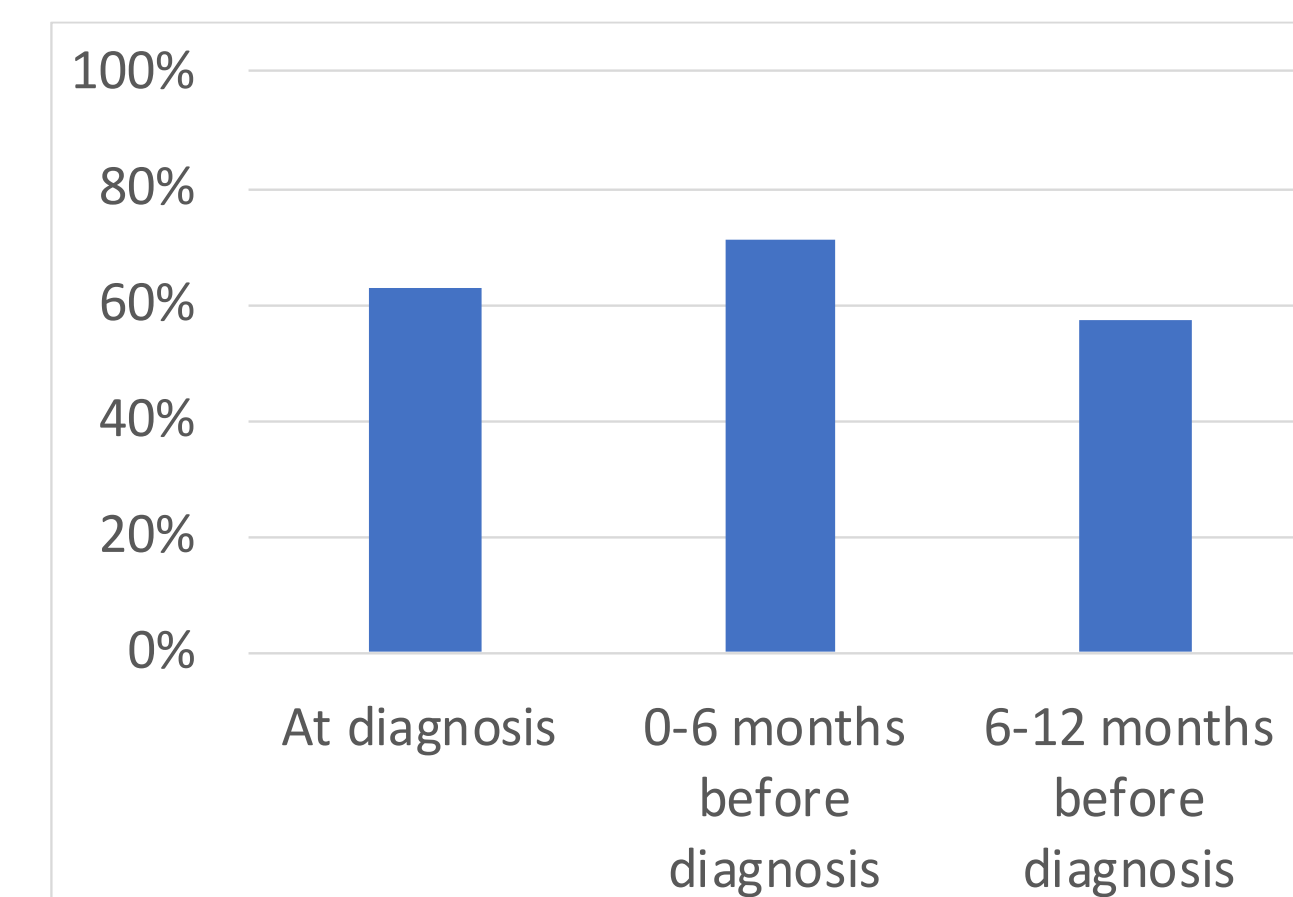


Figure 1. Proportion of patients with hypochromia within 12 months of diagnosis

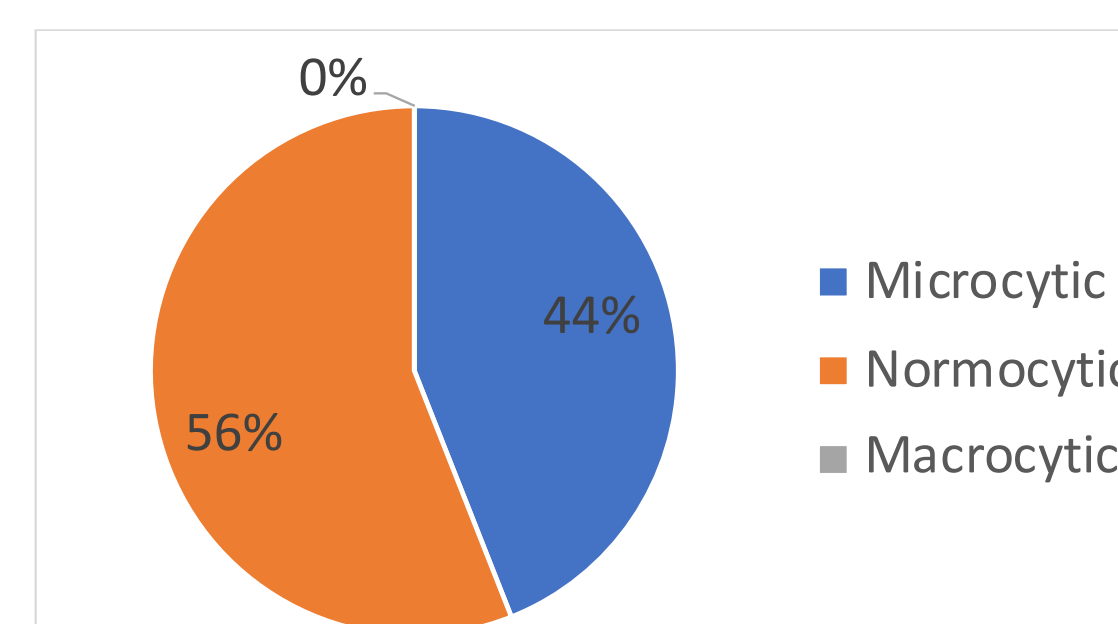


Figure 2. The proportion of patients with anaemia at time of admission/ diagnosis (n=28)

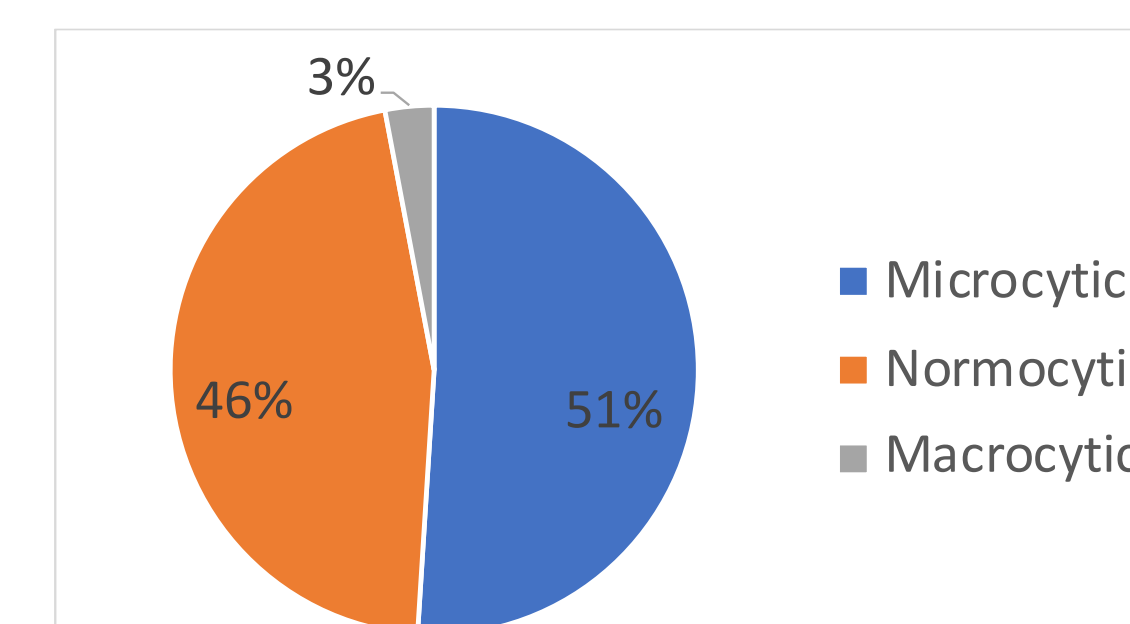


Figure 3. The proportion of patients with anaemia 0-6 months before admission/ diagnosis (n=69)

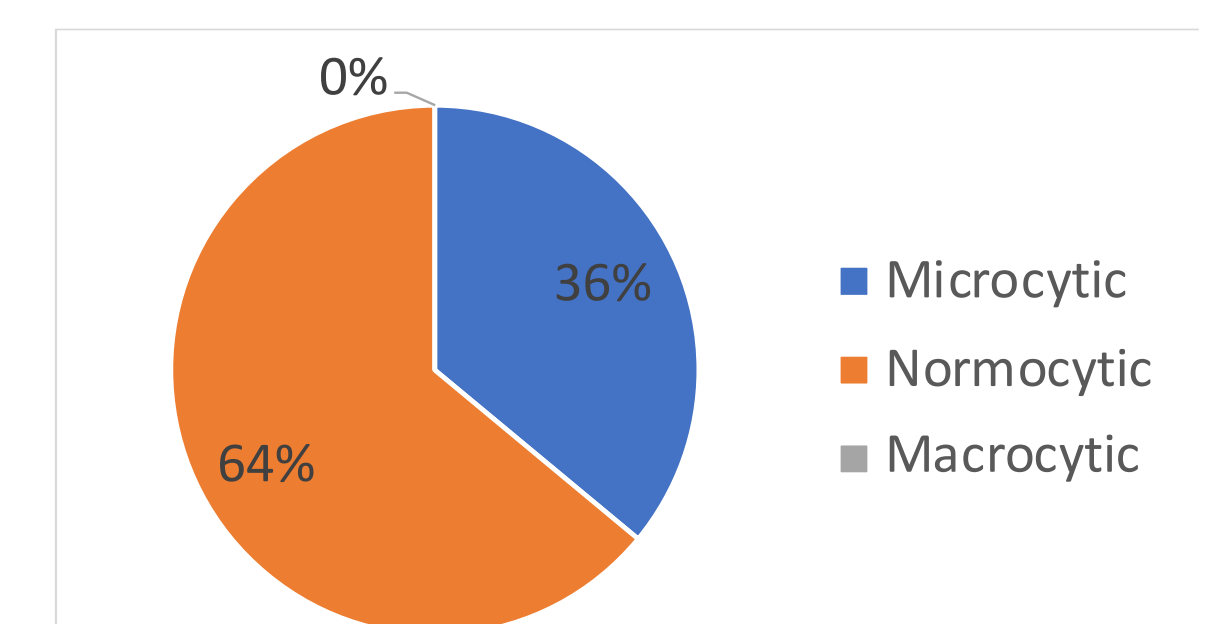


Figure 4. the proportion of patients with anaemia 6-12 months before admission (n=33)

CONCLUSIONS

- This data shows the importance of not ruling in/out bowel malignancy from haematological results. It is clear in this patient group that hypochromia is an earlier and more consistent marker for bowel malignancy than microcytosis. Further investigation in more patients of the same population would provide a clearer picture with regards to confirming these results. Haematinics were not regularly tested in this patient group and the importance of investigating the causes of a patient's anaemia should be reiterated.
- The reduced proportion of microcytosis and hypochromia at the time of admission/diagnosis (compared to 0-6 months) is postulated to be as a result of a response to iron therapy.
- Considering that we did not evaluate the clinical presentation of these patients, we assume that by the time of diagnosis/ endoscopic procedure, patients were symptomatic (i.e. weight loss and change in bowel habits) meaning that lab tests were not essential for referral.
- Another reason why not all patients had lab tests is that they might have been referred as part of bowel cancer screening programme, where again lab tests are not absolutely necessary.
- The key message is to emphasise good history-taking (focusing on symptoms and risk factors) to identify clinical features and signs of colon cancer alongside lab results.

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