

Investigation and Management of Preoperative Anaemia

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Aims & objectives

Preoperative anaemia is seen in 30% of patients presenting for major surgery and is associated with increased morbidity and mortality post-surgery¹. We wished to audit the diagnosis, investigations and treatment of patients presenting to the pre-operative anaesthetic pre-assessment clinic.

Standards

Standards on the management of iron deficiency anaemia (IDA) are available from the National Institute for Clinical Excellence (NICE)², the Northern Ireland Department of Health, Social Services and Public Safety (DHSSPS)³ and the Guidelines and Implementation Network (GAIN)⁴.



1. All anaemic patients should have iron studies performed.^(3, 4)
2. If IDA is diagnosed, iron therapy should be instigated promptly.^(2, 3, 4)
3. Referral for IV iron should be considered for those who are intolerant of oral iron or those who require urgent correction of the deficit.^(3, 4)

Methods

50 surgical patients who were anaemic on presentation to the anaesthetic pre-operative assessment clinic (PAC) between Jan 2013 – Jan 2014 were audited retrospectively against the standards above. An audit proforma was created and data collected from laboratory systems and the Electronic Care Record (ECR).

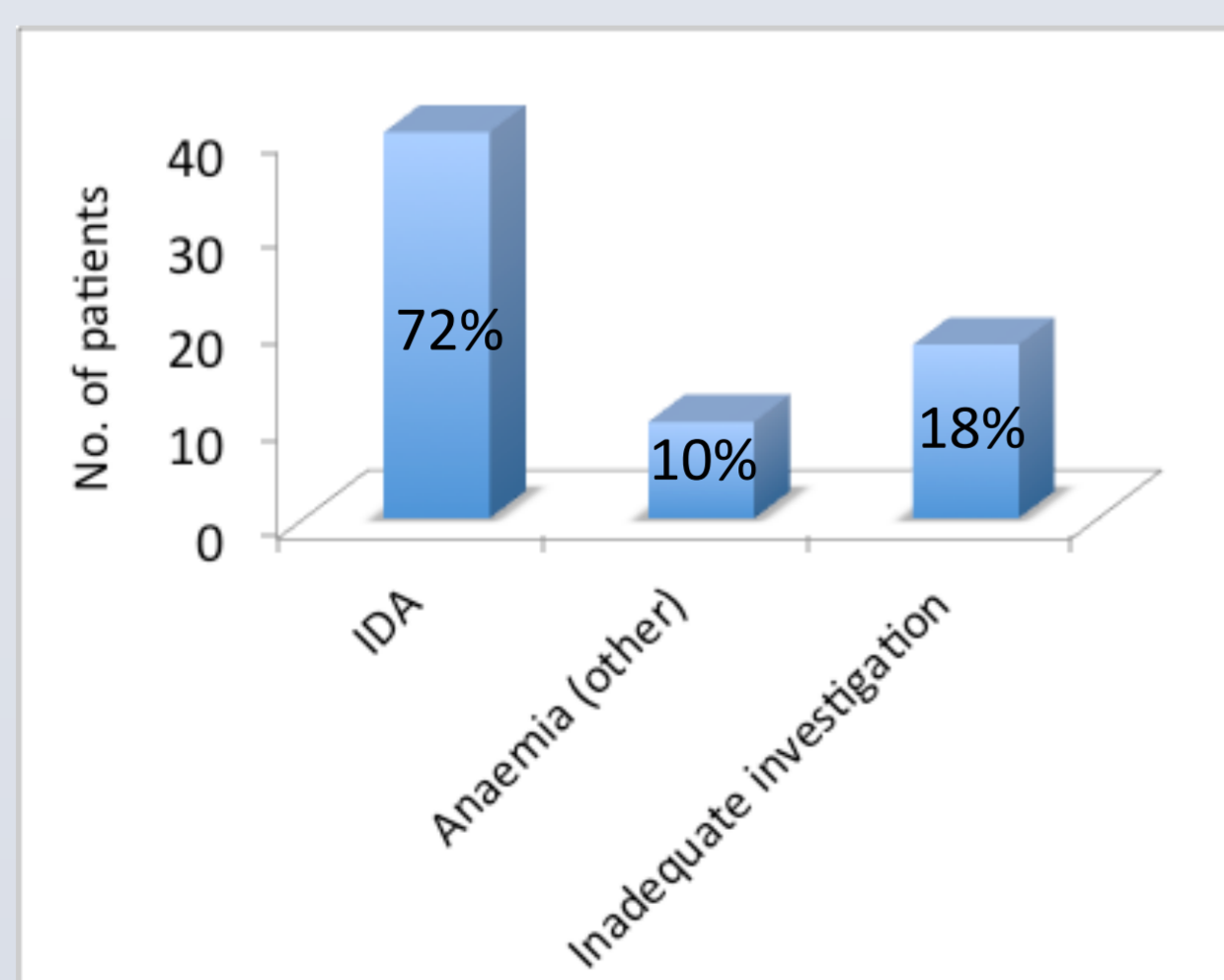
Patients were deemed to be at high risk of IDA if they had low grade bleeding over a period of time, eg bowel cancer, haematuria from renal/bladder cancer or menorrhagia.

Results

Key findings: see Fig. 1 (below):

- IDA was confirmed in 36 patients (72%)
- 5 patients (10%) had anaemia of other cause
- 9 patients (18%) were inadequately investigated leaving cause unknown

Fig. 1

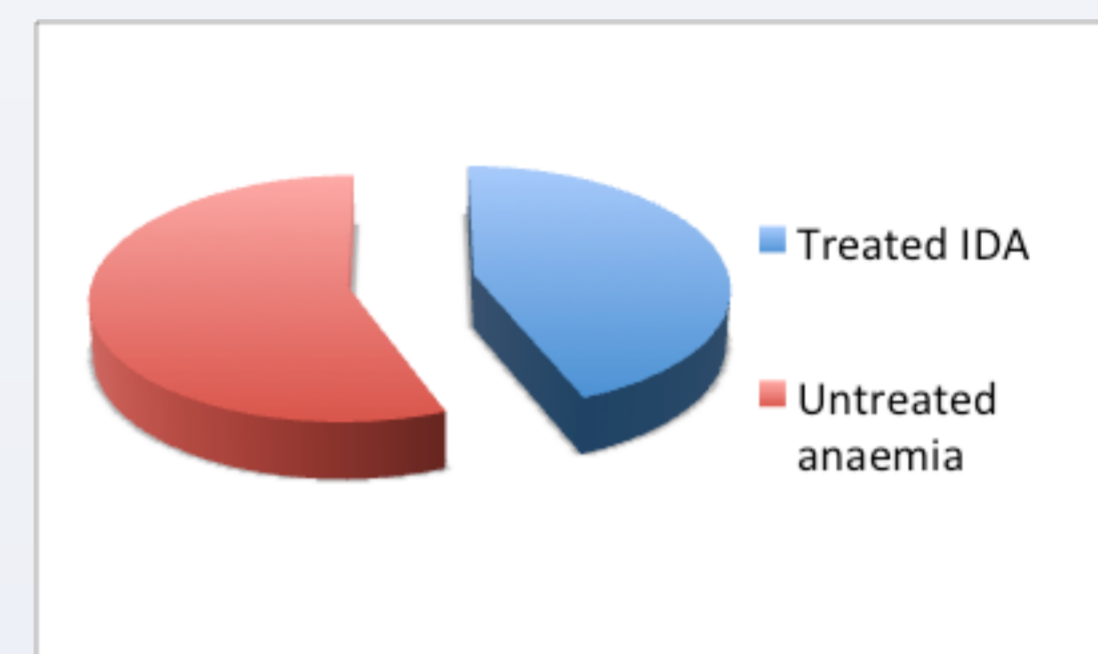


- It was also noted that 36 patients (72%) were deemed to be at high risk of IDA and early investigation and treatment would have been expected in this group.

Results (contd.)

- 19 patients had previously *abnormal* iron studies and 16 of these were not taking oral iron therapy at presentation to the preassessment clinic.
- Another 12 patients in the group without previous iron studies were found to have IDA that was also untreated at presentation meaning that at least 28 (56%) patients had IDA that was *untreated* (see Fig. 2)
- An additional 3 patients on oral iron should have had treatment escalation.

Fig. 2



- 9 patients were noted to have had intravenous iron therapy prior to surgery and all had a good response.
- Overall 9 (18%) cases responded well to treatment and had their anaemia corrected before surgery. 21 patients (42%) had a further Haemoglobin check confirming they were still anaemic before surgery. The remaining 20 (40%) cases had no additional check performed.

Conclusions

This study demonstrated:

- The leading cause of anaemia in 72% of patients presenting to our preassessment clinic was IDA. Most of these patients with IDA should have been identified early to be at high risk of IDA from their presenting history.
- The majority of patients with IDA were not on treatment for this condition.
- 18% of patients were not investigated adequately to identify a possible reversible cause of their anaemia.

Recommendations

- Health professionals should identify all patients at high risk of IDA early.
- Iron studies are essential to guide treatment and should be requested on all patients at their first presentation of anaemia. (*This may be at the GP surgery, surgical outpatient clinic or the anaesthetic pre-assessment clinic.*)
- Once iron deficiency is confirmed as the cause of anaemia, oral iron therapy should be started immediately and followed up for effectiveness.
- If oral iron therapy is not tolerated, inadequate, or the time frame to surgery is short then consideration should be given to intravenous iron.

Action Plan

- The audit has been publicised across key stakeholders to encourage early diagnosis, investigation and management of IDA.
- A reaudit is planned to ascertain an improvement in practice has occurred.

References

1. Preoperative anaemia and post-operative outcomes in non-cardiac surgery; a retrospective cohort study. Mussallam KM, Tamim HM, Richards T *et al*. The Lancet 2011;378: 1396-407.
2. Clinical Knowledge Summary: Iron deficiency anaemia, NICE February 2013.
3. NI DHSSPS circular: Detection, Investigation and management of anaemia HSS(MD) 22/2012.
4. GAIN: Management of anaemia and avoidance of transfusion, Audit report 2010.