

Introduction

Iron deficiency is the commonest cause of antenatal anaemia and is associated with significant morbidity^{1,2}. A recent national audit reported high incidences of antenatal anaemia (30.4%) and considered it “*a major public health problem in the UK*”³. In our institution serum ferritin at booking (and 28 weeks if not taking iron) directs iron supplementation if ferritin ≤ 30 mcg/L (one tablet daily in non-anaemic women). Anaemic women are treated according to national guidance⁴.

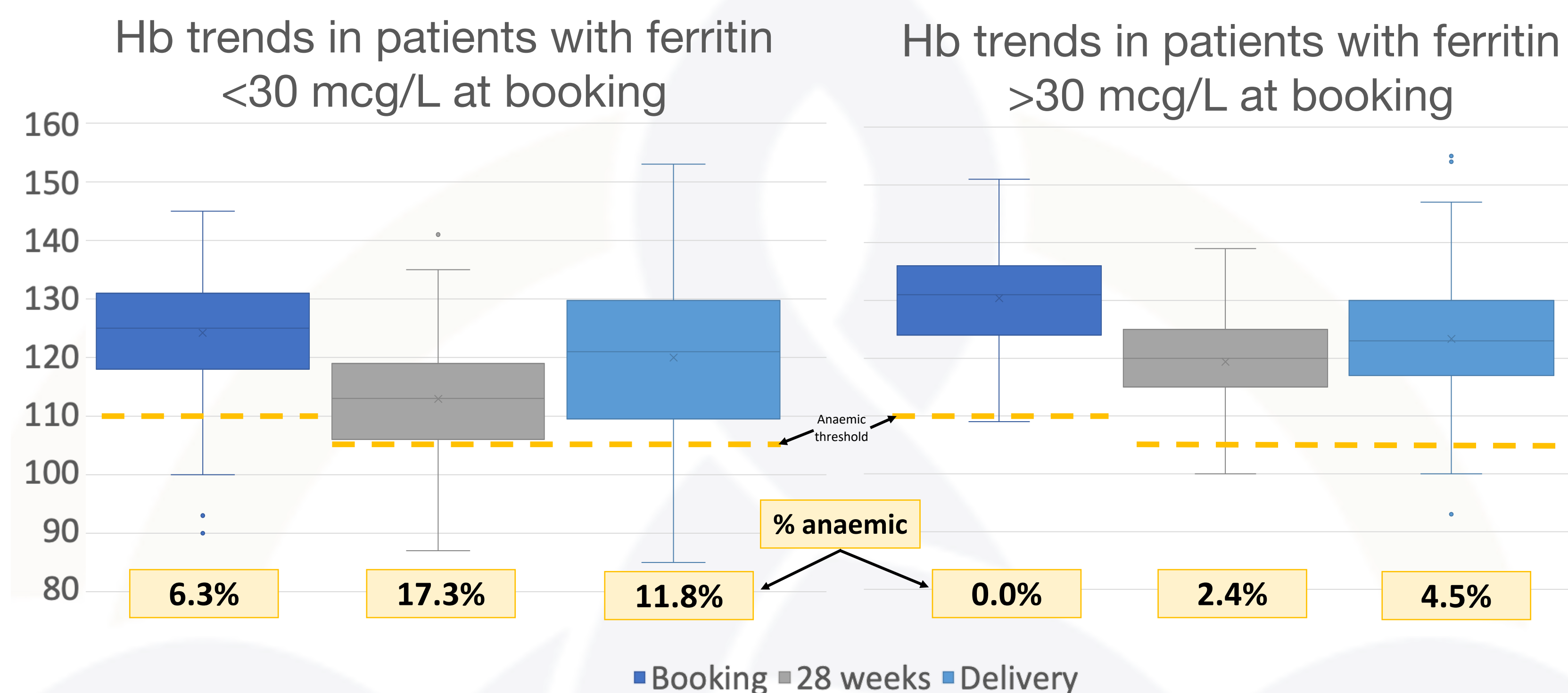
Methods

A retrospective observational data review as part of a registered Quality Improvement Project. Data were collected from consecutive patients attending delivery suite 05/11 – 29/11/2022. Non-parametric data were analysed using Mann-Whitney U and proportions with anaemia using Fisher’s exact test.

Results

Data from 213 patients, including 10 late bookers were collected. At booking median [IQR] ferritin in ≤ 30 mcg/L and >30 mcg/L groups were 16.5 [12-22], and 54 [35-70] respectively, 14.7% [30/203] had no ferritin. See table for comparison of the ferritin groups. Overall prevalence of anaemia during pregnancy was 19.2% [41/213].

Results continued



Comparison of patients with serum ferritin ≤ 30 mcg/L and >30 mcg/L at booking

	Serum ferritin ≤ 30 mcg/L	Serum ferritin >30 mcg/L	
Number (n)	80	93	
Booking haemoglobin (median [IQR])	125 [118-131] g/L	131 [124-136] g/L	P<0.001
Booking anaemia* (%; n)	6.3%; 5/80	0.0%; 0/93	P<0.05
28 weeks haemoglobin (median [IQR])	113 [107-119] g/L	120 [115-125] g/L	P<0.001
28 weeks anaemia* (%; n)	17.3%; 13/75	2.4%; 2/84	P<0.001
28 weeks new anaemia* (%; n)	84.6%; 11/13	100.0%; 2/2	
28 weeks ferritin (%; n; (median [IQR]))	25.3%; 19/75; (9 [8-12])	19%; 16/84; (14 [10-20])	
32-36 weeks anaemia* (%; n)	29.5%; 13/44	11.9%; 5/42	P<0.05
32-36 weeks new anaemia* (%; n)	46.1%; 6/13	80.0%; 4/5	
Delivery haemoglobin (median [IQR])	121 [111-129] g/L	123 [117-130] g/L	P=0.11
Delivery anaemia* (%; n)	11.8%; 9/76	4.5%; 4/87	P= 0.14
Delivery new anaemia* (%; n)	22.2%; 2/9	50.0%; 2/4	
Anaemic at 1+ point during antenatal period (%; n)	30.0%; 24/80	11.8%; 8/93	P<0.001
Received IV Iron antenatally (%; n)	13.7%; 11/80	0.0%; 0/93	P<0.001

Data are percentages [proportions] and median [interquartile range]

*anaemia was defined as a Haemoglobin <110 g/L in the first trimester and <105 g/L after the first trimester until delivery

Discussion

Prevention and treatment of iron deficiency anaemia is a key target for effective antenatal care to optimise pregnancy outcomes and reduce avoidable harm. Checking ferritin in all women is currently not part of national guidance⁴. The prevalence of IDA in this population is lower than described in national data (19.2 vs 30.4%)³ suggesting that ferritin guided iron supplementation in non-anaemic women may be effective in preventing IDA. Repeat Hb check at 32-36 weeks is also not currently recommended⁴ however 31% [10/32] of anaemias in this cohort presented during this period suggesting a Hb check at this point is warranted. Whilst ferritin has role in the detection and treatment of anaemia, more work is required to understand and improve targeted iron therapies in order to provide optimal antenatal care for patients. Pathway concordance and user experience requires further examination.

Conclusion

- Serum ferritin is useful as an early marker of iron deficiency and can identify women at increased risk of IDA in pregnancy
- Rates of iron deficiency in this cohort were lower than national data indicating potential effectiveness of this pathway.
- 31% of all anaemias presented between 32-36 weeks gestation and would not have been identified on routine antenatal blood tests.

References

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