Do women with menorrhagia need iron?

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Abstract

Haematological indices of iron deficiency and serum ferritin concentrations were compared in 42 women complaining of menorrhagia and in 34 with normal menstrual loss. No significant differences in haemoglobin concentration, mean corpuscular volume, or mean corpuscular haemoglobin concentration were found between the two groups. Serum ferritin concentrations were significantly lower ($p < 0.001$) in patients with menorrhagia. Though the iron stores in these women were significantly reduced, only a few were anaemic. Thus, women complaining of heavy menstrual loss do not require prophylactic iron supplements.

Introduction

Iron deficiency anaemia occurs in 67% of women whose menstrual loss exceeds 80 ml¹; a poor correlation has, however, been found between measured blood loss and women's own assessment of their bleeding.² It is therefore doubtful whether the prevalence of iron deficiency in women with subjective menorrhagia is high enough to justify giving them prophylactic iron supplements.

This study was designed to clarify the situation by comparing haematological indices of iron deficiency and serum ferritin concentrations in a group of women complaining of menorrhagia with those in a group with normal menstrual loss.

Patients, methods, and results

Seventy-six Caucasian patients attending the gynaecological outpatient department were included in the study. Forty-two (mean age 38.5 years) were referred because of menorrhagia (group 1) and 34 (mean age 30.1 years) were randomly selected from premenopausal patients referred because of various other gynaecological problems but who had normal menstrual periods (group 2). Thirty-nine (93%) patients in group 1 and 28 (82%) in group 2 were parous.

Patients in group 1 had complained of heavy menstrual loss for between six and 108 months (mean 38.4 months). The mean duration of menstrual blood loss was 8.8 days (range 4-28 days) in women in group 1 and 4.1 days (range 2-7 days) in women in group 2 and the mean number of tampons or pads or both used per cycle was 62.5 (range 25-280) and 14.4 (range 4-30) in women in groups 1 and 2 respectively. Thirty or fewer tampons or pads or both were used per cycle by two women from group 1 and 25 or more per cycle by two women from group 2. None of the patients in the study had received iron supplements.

The haemoglobin concentrations, the mean corpuscular volumes, and the mean corpuscular haemoglobin concentrations were measured using a Coulter Counter Model-S and the serum ferritin concentrations using an immunoradiometric assay.³

The results of the investigations are shown in the table. There was no significant difference in the haemoglobin concentration, the mean corpuscular volume, or the mean corpuscular haemoglobin

concentration between the two groups. Six patients from group 1 and two from group 2 had a haemoglobin concentration below 11.5 g/dl. The serum ferritin concentrations in patients from group 1 were significantly lower compared with those in patients from group 2 ($p < 0.001$, Mann-Whitney U test). Two patients from each group had serum ferritin concentrations below 12 µg/l and three from each group had signs of iron deficiency on examination of a blood film. The haemoglobin and serum ferritin concentrations in patients from group 1 were not directly related to the number of months that they had complained of menorrhagia.

Results of investigations in women with menorrhagia (group 1) and in those with normal menstrual loss (group 2)

	Group 1 (n = 42)		Group 2 (n = 34)	
	Mean ± SD	Range*	Mean ± SD	Range*
Haemoglobin concentration (g/dl)	13.2 ± 1.48	8.2-15.7 (6)	13.66 ± 1.23	11-15.9 (2)
Mean corpuscular volume (fl)	85.63 ± 6.26	65-97 (2)	87.18 ± 5.32	72-94 (2)
Mean corpuscular haemoglobin concentration (pg)	29.39 ± 2.72	22.6-34.2 (5)	29.75 ± 2.04	23.6-32.8 (2)
Serum ferritin concentration (µg/l)	44.5 (median)	10-162 (2)	102 (median)	6-828 (2)

SD = standard deviation.

*Figures in parentheses are the number of patients in each group who had subnormal haemoglobin concentrations (<11.5 g/dl), mean corpuscular volumes (<76 fl), mean corpuscular haemoglobin concentrations (<27 pg), or serum ferritin concentrations (<12 µg/l).

Comment

The concentration of ferritin in serum gives a quantitative measure of the amount of stored iron in the body and is the first value to decrease in iron deficiency. Concentrations below 12 µg/l are associated with iron deficient erythropoiesis.⁴ There is no evidence, however, that any benefit is obtained from treating patients with a low serum ferritin concentration unless they are also anaemic.⁵

The results of this study show that although iron stores in women with menorrhagia were significantly reduced, only a relatively small proportion of these patients were anaemic. Thus, women complaining of heavy menstrual loss do not require prophylactic iron supplements. Nevertheless, they should always have their haemoglobin concentrations checked and be given treatment if found to be anaemic. A history of heavy menstrual loss should be considered when serum ferritin concentrations are interpreted in premenopausal women.

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