

Hari Yuvaraj , Huixin Huang , Lee Chun Fan , Lim Shau Khng

[1] Department of Obstetrics & Gynaecology, Monash Health, Dandenong Hospital, Australia 135 David St, Dandenong, VIC 3175

[2] Yong Loo Lin School of Medicine, National University of Singapore, Singapore NUHS Tower Block, 1E Kent Ridge Road, Level 11, Singapore 119228

[3] Duke-NUS Medical School, Singapore 8 College Rd, Singapore 169857

[4] Department of Obstetrics & Gynaecology, Singapore General Hospital, Singapore 20 College Road, Singapore 169856

Background

Anaemia in pregnancy is defined by the World Health Organization as a haemoglobin (Hb) <110 g/L at any stage of pregnancy with a threshold of Hb <105 g/L in 2nd trimester [1]. Iron deficiency is the commonest cause of anaemia in Singapore, contributing to 81.3% of the anaemia cases in pregnancy with Malays more than Indians facing a higher risk [2]. 15.3% of the population remained anaemic at delivery despite iron supplementation in pregnancy in 1993 [3].

60-100mg of daily elemental iron intake is recommended with increasing demand for iron in pregnancy especially in the 2nd and 3rd trimester [4]. Haemoglobin increases within 2-3 weeks of oral iron therapy, with an expected increase 0.7-1.0 g/dL per week [5].

This study aims to explore current practice of anaemia screening and choice of iron therapy in reducing anaemia in pregnancy.

Methods

A randomised retrospective study was conducted on 1000 de-identified antenatal records from Singapore General Hospital Citrix system between 2016 to 2017 and analysed with Microsoft excel.

Results

The prevalence of iron deficiency anaemia was highest at 63% in 1st trimester. 3rd and 1st trimester had the greatest number of newly diagnosed anaemics contributing to 17% and 12% respectively. In contrary, only 4% of the entire population was newly diagnosed as anaemic in 2nd trimester. Only 24.2% of the pregnant patient in 2nd trimester had Hb levels checked in comparison 74.6% in 1st trimester and 99.5% in 3rd trimester.

8.2% of the pregnant women had iron deficiency anaemia. All of them were only treated with oral iron therapy. There were no documented cases of parenteral iron supplementation.

Iron Supplementation

Supplement Name	Iron Content	Elemental Iron Content
Obimin	Ferrous Fumarate 90mg	30mg/tablet
Elevit	Ferrous Fumarate 183mg	60mg/tablet
Ferrous tab	Ferrous Fumarate 200mg	65.7mg/tablet
Ferrous F	Ferrous Fumarate 310mg	100mg/tablet
Sangobion	Ferrous Gluconate 250mg	28mg/tablet
Iron Polymalose Drops (Maltofer)	Iron polymatose 37mg/mL	50mg/5mL drop
Ferrograd C	Ferrous Sulfate 325mg	105mg

References

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Results

Amongst the anaemics, 84% and 5% of the population received Sangobion and Ferrous Fumarate (FF) respectively. 5% received dual iron replacement therapy; starting with Sangobion with combinations of either FF or Iron polymaltose (IP). 6% of population were on triple therapy: Sangobion, FF and IP in 3rd trimester. 12% of all anaemic women who were treated with Sangobion had changed to alternative oral iron replacement. 46% of these anaemics were on 2 tablets of Sangobion per day, with 38% continuing this regime till delivery.

20% of the anaemic women were initiated on oral iron in the 1st trimester; 33% in 2nd trimester and 47% in 3rd trimester. 26% of those initiated on iron supplements since 1st trimester and 18% of those initiated since 2nd trimester remained anaemic at delivery. On average, iron therapy was initiated for 7.5 months in 1st trimester and 5 months in the 2nd trimester. Number needed to treat for iron deficiency anaemia in 1st trimester was 3.8 while for 2nd trimester was 5.5 to prevent anaemia at delivery.

Conclusion

Oral iron replacement therapy is the most popular choice in managing iron deficiency anaemia. Obimin alone is insufficient in replenishing iron stores in pregnancy. Sangobion is the most popular initial choice of iron replacement therapy. Ferrous fumarate is superior in providing higher dose of elemental iron content; a viable alternative for 46% of anaemics on 2 tablets of Sangobion/day. GI symptoms and difficulty swallowing pills was a common cause for 12% of Sangobion taking anaemic population to change over to alternative iron therapy. 11% of the population who had received 2 or more iron supplements could have benefitted from IV iron therapy. Early oral iron supplementation in 1st trimester is the most successful strategy in preventing iron deficiency anaemia at delivery; most common choice is Sangobion given over a period of 7.5 months. Further studies need to be done on implementing routine 2nd trimester Haemoglobin checks to reduce the late diagnosis of anaemia in 3rd trimester. Further awareness has to be raised on considering IV iron infusion as a cost effective and efficacious alternative to oral iron supplementation to those who remained anaemic at 3rd trimester.