AVOIDING TREATMENT FAILURE WITH IRON SUPPLEMENTATION

Marie Louise Hurworth, BSc (Hons) RM & PTTLS

Marie Louise is a Pregnancy Advisor for Active Iron as well as a Prenatal Course Educator and experienced Midwife for the NHS. She is also an accomplished author of two books: 'Pregnancy, Birth & Beyond' and 'The Modern Midwife's Guide to the First Year'.

INTRODUCTION

The purpose of this paper is to inform women, healthcare professionals and birth workers of the importance of iron during pregnancy, treatment failure with traditional iron supplementation and why low dose iron during pregnancy could become the best preventative measure to avoid lapsed usage. It provides quotes, data driven information and offers solutions that enable healthcare professionals and women to take ownership of their health throughout pregnancy and beyond.

BACKGROUND

In general, iron deficiency anaemia (IDA) is more likely in women of reproductive age because of menstrual blood loss. The challenges of pregnancy also markedly increases the risk of iron deficiency in this cohort.[1] Anaemia is the most common nutritional disorder in pregnancy.[2] An iron-deficient diet in pregnancy is common and may compound the problem.[3] There is a 2-3 fold increase in requirement of iron and 10-20 fold increase in folate requirement in pregnancy.

The WHO Global health repository data describes largely unchanged rates of anaemia in pregnancy over time with rates of 41% in 2000 dropping to only 37% in 2019.[4] In the UK, the prevalence of anaemia was found to be 24% in a multicentre national study.[5] Anaemia in pregnancy has been associated with increased maternal mortality and postpartum haemorrhage risk globally. The signs and symptoms are often non-specific with tiredness being the most common. Women may also experience weakness, headaches, palpitations, dizziness, dyspnoea and hair loss. Postpartum anaemia has been linked to fatigue, impaired cognition, lactation failure, early cessation of breastfeeding and there is a growing body of evidence linking postpartum anaemia with depression.[6]

For the infant, maternal IDA is a recognised risk factor for preterm labour, low birthweight, and small-for-gestational-age (SGA) neonates. It is also associated with increased perinatal and neonatal mortality as well as long-term measurable deficits in neurodevelopment.[7]

RECOMMENDATIONS

Current recommendations for iron intake and screening:

Iron intake recommendations vary between organisations:

- CDC Recommend 27mg Iron daily in pregnancy[8]
- WHO Recommend 30-60 mg[9]

Achieving 60mg of iron intake through diet alone can be particularly difficult, especially for mums experiencing food aversions.

Pregnant women should be offered screening for anaemia. In line with the National Institute for Health and Care Excellence (NICE) screening for anaemia should be offered at booking and at 28 weeks, with an additional full blood count at 20–24 weeks for women with multiple pregnancies. This allows enough time for treatment prior to birth if anaemia is detected.

Pregnancy anaemia can be asymptomatic and may be diagnosed following routine screening. A serum ferritin level may also support clinicians to identify those mothers more at risk of developing IDA, enabling earlier intervention and advice regarding options for low dose oral iron.

TREATMENT

Oral iron is often the preferred first-line treatment for iron deficiency. It is currently recommended to take 100-200mg of elemental iron / day. Parenteral iron is indicated when oral iron is not tolerated or absorbed, if patient compliance is in doubt or if the woman is approaching term and there is insufficient time for oral supplementation to be effective.[10] Treatment with IV iron requires admission, poses risk and is costly and invasive.

The common side effects of iron supplementation such as stomach pain, nausea, constipation and dark or black poo, have become normalised, even in maternity settings. However these side effects are far from desirable or even tolerable for mums to put up with. Therefore, it is important to consider other options and preventative measures to ensure mothers do not become anaemic and need to endure such side effects or invasive treatment.

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Lapsed usage is the most common reason for treatment with IV iron. Up to 50% of patients are thought to discontinue iron supplements because of adverse effects.[11] Pregnancy is already associated with many unpleasant symptoms including nausea or vomiting, stomach discomfort or heartburn and constipation.

Women regularly require support and or medication to manage symptoms of pregnancy, and the side effects of iron supplementation may compound these already unpleasant symptoms. An expectation of mothers to take medication as prescribed, whilst they contend with such discomfort, may not be realistic, achievable or fair for mums. One study confirmed that pregnant women were more likely to report side effects when taking daily iron supplements than controls (25.3% versus 9.9%), particularly at doses of 60mg or more of elemental iron.[13]

The treatment dosage of oral iron is increased depending on the severity of anaemia. Leading to a separate challenge, the more anaemic a woman becomes, the more treatment she will require but is possibly unable to withstand. The higher and more frequent the dose the more likely it is that she will experience symptoms, as adverse effects are dose dependent.[14] Because iron absorption from oral supplements tends to be low, higher doses increase side effects due to excess iron remaining in the GI tract.[15] This leads to a vicious stop-start cycle, and ultimately treatment failure.

A systematic review comparing intermittent versus daily iron supplementation showed that intermittent supplementation produced a similar risk of anaemia at term, prematurity and low birthweight babies, but was associated with fewer side effects.[16]

PROPOSED SOLUTION

Early intervention through preventative measures could be instrumental in avoiding treatment failure. IDA is progressive and can be prevented. And so early intervention with lower dose iron may reduce lapsed usage, discomfort for women and aids in avoiding more invasive treatment. **Active Iron** is highly absorbed compared to other iron supplements,[17] making it gentle on the stomach. Recent clinical data shows that patients taking **Active Iron** were 4 times more likely to be compliant versus previous oral iron.[18] It is clinically proven to increase ferritin levels by 94% within 6 weeks, and significantly increases energy levels.[18] Checking serum ferritin may help to identify those more at risk and allow for earlier intervention. Currently, UK guidelines do not recommend iron supplementation during pregnancy, unless clinically advised.[19] Conversations with mums about their iron intake alongside preventive measures in the form of early intervention with low dose iron should be considered.

CONCLUSION

Preventative supplementation and early intervention encourages maintenance of iron levels throughout pregnancy and may avoid progression to IDA and the need for unpleasant high dose oral iron or costly IV iron. Use of low dose iron may also preclude the risk of pregnant mothers experiencing a range of unpleasant symptoms. When women experience healthier pregnancies there are better outcomes for both mothers and babies.

This paper was written with the hope that healthcare professionals can use it to provide consistent and high-quality care, whilst taking into consideration each family's individual situation and needs, in order to reduce the impacts of anaemia during pregnancy and the postnatal period to support families in this new phase.

REFERENCES

1. Coad et al. Curr Opin Clin Nutr Metab Care. 2011 Nov;14(6):625-34. doi: 10.1097/MCO.0b013e32834be6fd. PMID: 21934611.
2. Zhang et al. 2022 Oct 14;10:1041136. doi: 10.3389/fpubh.2022.1041136. PMID: 36311562; PMCID: PMC9615144.https://cks.nice.org.uk/topics/menorrhagia-heavy-menstrual-bleeding/background-information/definition
3. Rooney et al. Arch Gynecol Obstet. 2023. doi:10.1007/s00404-023-06916-x
4. Hasan et al. Bull World Health Organ. 2022; 100(3): 196-204.
5. Barroso et al. Eur J Obstet Gynecol Reprod Biol. 2011;159(1):99–105.
6. Xu et al. BMC Psychiatry 18, 224 (2018). https://doi.org/10.1186/s12888-018-1796-6
7. O Toole et al. 2023. Screening and treatment of iron deficiency anaemia in pregnancy: A review and appraisal of current international guidelines https://doi.org/10.1002/ijgo.15270
8. https://www.cdc.gov/grand-rounds/pp/2019/20190618-early-childhood-nutrition.pdf
9. WHO. Developing and validating an iron and folic acid supplementation indicator for tracking progress towards global nutrition monitoring framework targets. Final report - June 2018. Geneva: World Health Organization; 2018 (https://www.who.int/nutrition/publications/iron-folic-indicator-GNMF/en/).
10. Blood Transfusion in Obstetrics Green-top Guideline No. 47 May 2015
11. Tolkien Z, et al. PLOS ONE 2015.
12. https://www.nhs.uk/medicines/ferrous-fumarate/side-effects-of-ferrous-fumarate/
13. Pena-Rosas et al. Cochrane Database Syst Rev 2012, 7:CD009997. Doi:10.1002/14651858.
14. Pavord et al. Br J Haematol 2020; 188:819–830.
15. Stoffel NU et al. Haematol 2020; 105:1232–1239.
16. Pena-Rosas et al. 2012. Cochrane Database Syst Rev 2012;(7):CD009997.
17. Wang et al. 2017, Acta Haematologica, 138: 223-232.
18. Ledwidge, M. et al. PRECISION Study. Int J Clin Pharm (2023) https://doi.org/10.1007/s11096-023-01640-7
19. UK guidelines on the management of iron deficiency in pregnancy. Sue Pavord,Jan Daru, Nita Prasannan, Susan Robinson, Simon Stanworth, Joanna Girling, on behalf of the BSH Committee First published: 02 October 2019 https://doi.org/10.1111/bjh.16221 Citations: 139

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www.activeiron.com/activeiron/healthcare-professionals
or contact info@activeiron.com

@activeironworld