Evaluating the effect of 12 weeks of supplementation with ferrous sulfate, ferrous bisglycinate or placebo, on iron status in Cambodian women

Jordie Fischer, David Goldfarb, Rajavel Elango, Hou Kroeun, Crystal Karakochuk.

INTRODUCTION

The World Health Organization (WHO) recommends 12 weeks daily iron supplementation for women living in regions where anemia prevalence is >40%, such as in Cambodia.

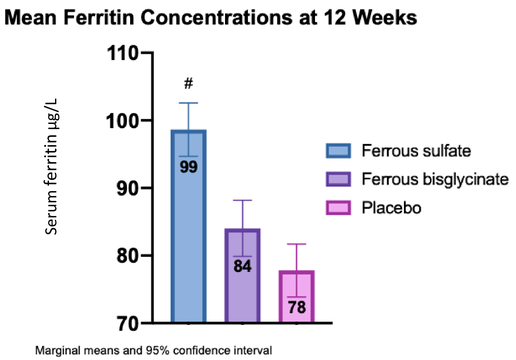
However, if iron deficiency is not a major cause of anemia, then, at best, iron supplementation is a waste of resources, at worst, it could cause harm.

Aim: assess the non-inferiority of 12 weeks of highly bioavailable ferrous bisglycinate and the standard ferrous sulfate supplementation on ferritin concentrations in Cambodian women.

METHODS

- Double-blind randomized controlled trial in Kampong Thom province
- 480 non-pregnant women (18-45 years)
- Randomized to 60 mg ferrous sulfate, 18 mg ferrous bisglycinate or placebo for 12 weeks
- Non-fasting blood collected at baseline and 12 weeks
- Serum ferritin measured with ELISA and adjusted for inflammation

RESULTS



DISCUSSION

The standard 60mg dose of ferrous sulfate is superior to 18mg ferrous bisglycinate in increasing ferritin concentrations in this population of predominately iron-replete, non-anemic women

Standard WHO-recommended iron dose is better at **increasing iron levels** than a lower dose of a highly bioavailable form of iron in **iron-replete Cambodian women.**

jordie.fischer@ubc.ca

GLOBAL HEALTH IMPLICATIONS:

The standard WHO dose of 60 mg ferrous sulfate may be more effective than lower dose ferrous bisglycinate for use in untargeted iron supplementation programs.

As iron deficiency is very low in Cambodian women and ferrous sulfate is poorly absorbed, understanding the potential harms of untargeted iron supplementation is necessary.

METHODS (CONT.)

- Ferritin was adjusted for inflammation following the BRINDA regression method using CRP and AGP

RESULTS (CONT.)

- 88% trial retention at 12 weeks (*n*=421)
- At baseline, 17% of women had anemia and 6% had iron deficiency
- 62% of women were adherent to the supplementation routine with no differences between groups
- Frequency of gastrointestinal side effects were not different between groups