Abstract

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Retinol and riboflavin supplementation decreases the prevalence of anemia in chinese pregnant women taking iron and folic acid supplements.

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BACKGROUND: In rural China, many pregnant women in their third trimester suffer from anemia (48%) and iron deficiency (ID; 42%), often with coexisting deficiencies of retinol and riboflavin.

OBJECTIVE: We investigated the effect of retinol and riboflavin supplementation in addition to iron plus folic acid on anemia and subjective well-being in pregnant women.

METHODS: The study was a 2-mo, double-blind, randomized trial. Subjects (n = 366) with anemia [hemoglobin (Hb) </= 105 g/L] were randomly assigned to 4 groups, all receiving 60 mg/d iron and 400 mug/d folic acid. The iron+folic acid (IF) group (n = 93) served as reference, the iron+folic acid+retinol group (IFA) (n = 91) was treated with 2000 mug retinol, the iron+folic acid+riboflavin group (IFB) (n = 91) with 1.0 mg riboflavin, and the iron+folic acid+retinol+riboflavin group (IFAB) (n = 91) with retinol and riboflavin.

RESULTS: After the 2-mo intervention, the Hb concentration increased in all 4 groups (P < 0.001). The increase in the IFAB group was 5.4 +/- 1.1 g/L greater than in the IF group (P < 0.001). The reduced prevalence of anemia (Hb < 110g/L) and ID anemia were significantly greater in the groups supplemented with retinol and /or riboflavin than in the IF group. Moreover, gastrointestinal symptoms were less prevalent in the IFA group than in the IF group (P < 0.05) and improved well-being was more prevalent in the groups receiving additional retinol and/or riboflavin than in the IF group (P < 0.05).

CONCLUSION: Thus, a combination of iron, folic acid, retinol, and riboflavin was more effective than iron plus folic acid alone. Multimicronutrient supplementation may be worthwhile for pregnant women in rural China.

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