

The Effectiveness of Iron Supplementation in the Prevention of Anemia during Pregnancy

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ABSTRACT

Iron deficiency is the most common known form of nutritional deficiencies. Its prevalence is highest among young children and women in the child bearing age, and pregnant women. In children, iron deficiency causes developmental delay and behavioral disturbances, while in pregnant women; it increases the risk of preterm delivery and low birth weight babies. Nutritional anemia refers to a condition in which the hemoglobin content of the blood is lower than normal as a result of a deficiency of one or more essential nutrients (usually iron, less frequently folate or vitamin B12). The national anemia control program in Oman has been in operation for many years. Pregnant women are provided by iron and folic acid supplement such as Fefol, Fersolate and folic acid and/or multivitamin tablets in the natal period (three whole 3 trimesters) and in the postnatal period. A new approach for the control of iron deficiency in pregnancy could be the weekly administration of iron and folic acid supplements, which has been proved very effective and has no side-effects.

Keywords: *Iron supplementation, Nutritional Anemia, Oman.*

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Iron deficiency is the most common known form of nutritional deficiencies. Its prevalence is highest among young children and women in the child bearing age, and pregnant women (1). Nutritional anemia refers to a condition in which the hemoglobin content of the blood is lower than normal as a result of a deficiency of one or more essential nutrients; usually iron, and less frequently folate or vitamin B₁₂. The national anemia control program in Oman has been in operation for many years (2). The program was implemented through antenatal care services of hospital and health centers by Ministry of Health (MOH), where pregnant women are the main beneficiaries of this program. Pregnant women are provided by iron and folic acid supplement such as Fefol,

Fersolate and folic acid and/or multivitamin tablets in the natal period (three whole 3 trimesters) and in the postnatal period and their hemoglobin level is examined and recorded accordingly (2).

The national anemia control program was assessed by MOH/WHO in 1993. The report showed that almost 97% of pregnant women received iron and folic acid supplement and the compliance rate was around 77%. The three major reasons of non compliance were side effects, forgetfulness and wrong belief. The study further reported that about 42% of women had no knowledge that what kind of supplement they are taking and what is the benefit of these supplement to them? The MOH/WHO evaluation study 1993 and the National Health Survey 2000 revealed that the prevalence of anemia in pregnancy (blood hemoglobin < 11gm/dl) was 48.5% and 42.7% respectively with 43.3% and 40.1% mild anemia (blood hemoglobin from 9 to <11gm/dl). Regular monitoring of hemoglobin level among pregnant ladies in Ministry of Health institutions are done, and data are recorded monthly in the monthly statistical records. In addition, anemia during pregnancy is also assessed through national surveys where the latest survey in 2000 showed an estimate of 42%. Routine reporting of anemia during pregnancy was first started in 1996; and the rates are showing a slow and steady decline; probably a reflection of improvement of general health status of the population.

Pregnancy anemia is considered as a major public health problem in Oman, despite of the regular iron supplementation from decades in antenatal and postnatal period to control iron deficiency and anemia in pregnancy, the problem still persists. Reasons have been given for this relative failure, including late start of antenatal supplementation, inefficient administration of such programs by the health system and, in the prenatal clinics in particular, insufficient daily doses, poor adherence to the required daily dosage because of inadequate motivation or forgetfulness, misconceptions on the effect of iron supplementation and the development of side-effects. Actions such as trying to improve the supply and regularity of dispensation of supplements in antenatal clinics and health centers and trying to create a greater awareness of the need for iron supplementation during pregnancy have been taken to get better the situation.

A new approach for the control of iron deficiency in pregnancy could be the weekly administration of iron and folic acid supplements beginning as early as possible and ideally for several months before conception in order to improve pre-pregnancy iron reserves. This approach is based on experimental studies in animals that show that the intake of a large dose of iron, blocks the absorption of subsequent doses (3-5). This had led scientists to explore the absorption of supplemental iron when it was administered only at intervals coinciding with the turnover of the intestinal mucosa (three days in the laboratory rat and five–six days in the human).

The effectiveness of weekly iron supplementation in preventing iron deficiency, increasing iron reserves, and correcting mild to moderate iron-deficiency anemia has been shown in many studies (6-9).

In conclusion, it has been suggested that, the ideal timing would be to give iron on a weekly basis in order to find a “new mucosal lining” every time iron supplements were administered. The added advantages of the weekly dosing schedule are the lack of side-effects.

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