Thesis Title Effect of Two Doses of Iron Supplementation on Iron and Zinc Status in one Month Postpartum and Newborn

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ABSTRACT

In Thailand, iron deficiency among pregnant and lactating women has been a major nutrition problem. Based on WHO recommendation in developing countries, 120 mg/d of iron should be given to pregnant women from second trimester until delivery and continued 40 days postpartum. The major problem in promoting the program is compliance. One of the important reasons for non-compliance was side effects associated with high dose of iron supplementation. The study tested if a lower dose, 60 mg/d iron supplementation is as efficacious as the recommended 120 mg/d.

The study was a longitudinal study, the first period wasPongpaisal's thesis entitled "Effect of Two Doses of Iron Supplementation on Iron and Zinc Status

During Pregnancy". The study followed up both groups of women who were supplemented with iron after 90 days of their supplementation until delivery and one month postpartum. Seventy eight women completed the study, 38 subjects in G 60 (60 mg iron/d) and 40 subjects in G120 (120 mg iron/d) group. On the delivery day, cord blood and one month postpartum blood were collected for analysis of iron and zinc status. Labour chart was copy. Questionnaire after delivery was collected. Monitoring of the tablet ingestion was done and if the subjects complied less than 80% of tablet ingestion they were excluded. Monitoring of weight and length of newborn were performed at 2 month after birth.

The prevalence of anemia was eliminated after 90 days iron supplementation but 26% still had iron depletion. At delivery, all subjects were normal in both hemoglobin and iron storage. Both doses could increase hemoglobin concentration, but the higher changes was shown in the 120 mg dose even though there was no statistical significance. At postpartum, fourteen increased from delivery but there was no statistically significant difference. Hemoglobin in G 60 seemed to be unchanged, whereas decreased in G 120 mg/d but not statistically significantly from delivery to one month postpartum.

Further analysis was done on the effect of iron supplementation on women who were anemic (HBO $<$ 11 g/dl) and non-anemic (Hb $\geq$ 11 g/dl) at enrollment. At delivery, women who received 120 mg iron/day increased hemoglobin statistically significantly more than those who received 60 mg iron/day (2.4 ± 1.8 VS 2.0 ± 2.4) Anemic women increased hemoglobin more than that of non-anemic but there was no significant difference between the two doses. Among those who were iron depleted

and not depleted, the anemia could be corrected in both groups, but only those who were not depleted had a statistical difference. At one month postpartum, the side effect of dose 120 mg were more frequent than G 60 group reported even though it decreased during pregnancy.

The changes of serum zinc at one month postpartum decreased in the both groups but did not show significant difference. These might be due to physiological changes. Iron supplementation during pregnancy had no effect on zinc status of newborn.

This study concluded that 60 mg iron per day should be adequate to diminish anemia and maintaining iron status during pregnancy and one month postpartum. Therefore, the 60 mg should be recommended in routine supplementation in Thailand.