SUMMARY

Iron deficiency is the most prevalent nutritional disorder worldwide, especially in developing countries. Pregnant women and infants are especially at high risk because of their increased iron requirements. Iron deficiency in pregnant women has been shown to cause intrauterine growth retardation, increase the risk of premature delivery and low birth weight.

This work studied the effect of iron supplementation to pregnant women during the third trimester on the birth outcome, the iron stores of their infants and whether feeding practices can influence iron stores of these infants and hemoglobin level of their mothers in the first six weeks of life.

This study included sixty pregnant women with normal hemoglobin or with mild anemia (Hb 10-11 gm/dl).Their full term babies were classified into: group (I) babies of iron supplemented mothers, group (II) babies of mothers with no iron supplementation mothers. Each group was further subdivided according to feeding practice into: group (IA) babies exclusively breastfed (15), group (IB) babies not exclusively breastfed (15), group (IIA) babies exclusively breastfed (15), and group (IIB) babies not exclusively breastfed (15).

All pregnant women in this study were supported during follow-up visits with nutrition education, subgroup of these mothers received information about how exclusively breastfeed their infants at birth. Blood samples were collected from mothers at 3rd trimester, birth and 6th week postpartum to measure Hb level.

After birth the infants of these mothers were assessed biweekly through growth assessment (weight, length and head circumference), breastfeeding

assessment and laboratory investigations (Hb, Ht, MCH, MCV and MCHC).Blood samples were collected from infants at 6th week to measure serum ferritin level.

The results were as the following:

1- There was statistically significant higher body weight and supine length in babies of iron supplemented mothers than babies of not supplemented mothers.

2- There was no significant difference in cord hemoglobin, RBCs, Ht, MCH, MCHC levels between newborns of iron supplemented mothers and those of none supplemented mothers, but the difference became apparent at 4th week of age with significantly higher levels in infants of iron supplemented mothers.

3- There was statistically significant higher serum ferritin levels at the 6th week of age in infants of iron supplemented mothers than infants of none supplemented mothers.

4- In this study iron supplementation to pregnant mothers was found to have a significant role in improving child birth outcome with regards duration of gestation as shown by the statistically significant higher gestational age in the supplemented group than none supplemented group

5-There was a statistically significant difference in weight gain and rate of growth with higher levels in infants who were exclusively breastfed than those who were not (at 4th and 6th week of age).

6-There were significantly higher serum ferritin levels at the 6th week of age in infants who were exclusively breastfed than those who were not.

7-There was increased incidence of vomiting and abdominal distention and colic in the infants who were not exclusively breastfed than those who were exclusively breastfed.

8-There was no statistical significant difference in the hemoglobin levels of mothers who were exclusively breastfeeding their infants than those who were not. This indicates that breastfeeding has no negative effect on the hematological picture of the mother.

9-Mothers who were exclusively breastfeeding had a shorter duration of post partum bleeding with decreased incidence of reappearance of bleeding .This could account for their higher Hb levels but were not statistically significant .

10-Independent practices including early eye-to-eye and skin-to-skin contact, higher frequency and duration of breastfeeding and rooming-in, no use of pacifier or bottles offered to babies from birth and no prelacteal feeds or supplements given at birth were all associated with increased serum ferritin levels.

11-Nutritional educational support of mothers played an important role in pregnancy outcome.

CONCLUSIONS

The effect of iron deficiency in the early period of growth, morbidity and neurological development can be detrimental to the infant and have been shown to impair cognitive development. Hence practices and interventions that can prevent developmental delay and reduce morbidity and mortality among children and improve health and fertility among women have been given highest priority by global interventions for health promotion development.

Hence the support and encouragement of exclusive breastfeeding and practices associated with the Ten Steps supplemented and augmented by the educational support both antenatally and postnatal i.e. in continuum of the perinatal period can

play a significant role in preventing maternal and infant micronutrient malnutrition particularly pertaining to iron deficiency anemia.

RECOMMENDATIONS

●Routine iron supplementation during pregnancy seems to be a safe strategy to prevent maternal anemia in developing countries, where traditional diets provide inadequate iron and where malaria and other infections causing increased losses are endemic.

●In some situations well-designed nutrition education programs can improve dietary quality and pregnancy outcome.

●A need for educational campaigns aimed at supporting breast-feeding mothers, especially those who perceive their milk supply to be inadequate.

●All mothers of infants need to be supported and receive information about exclusive breastfeeding, especially in the first six months of life, as exclusive breastfeeding will decrease the incidence of iron deficiency anemia during the first few months of life.

●Reactivation of baby friendly hospital initiative in Egypt that involves setting hospital polices that support exclusive breastfeeding and training all staff to implement and intensify the ten steps of successful breastfeeding.

●Intensification of education programs and media campaigns for exclusive breastfeeding for the first six months of life with introduction of complementary foods immediately after six months with continued breastfeeding for two years or more in line with the WHA resolution 2002: Global strategy for infant young, child feeding.