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EDITORIAL – IRON THERAPY IN NEWBORNS

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It is very important to prevent iron deficiency during early development of fetal anemia with appropriate maternal supplementation.

There is good bioavailability of iron and other minerals from human milk.

In cow's milk iron and zinc are less available.

Iron Deficiency in neonates

Anemia of prematurity results from, inadequate erythropoietin production and use of erythropoietin therapy.

Iron in Infants

Iron stored at birth is influenced by gestation birth weight and to extent placental transfusion at delivery.

VITAMIN E therapy

Increase intake of vitamin E is a powerful anti oxidant required to prevent hemolytic anemia in preterm infants, especially in those receiving a diet rich in PUFA or IRON.

In late preterm infants exhibit rapid post natal growth double birth weight after 2 months of age.

Iron deficiency anemia (IDA) and iron deficiency(ID) without anemia can have long lasting effect on neurodevelopment factors leading to ID in pre term population are maternal iron deficiency, poorly controlled diabetes (maternal), maternal smoking, IUGR, multiple

gestation, pre- term birth, acute and chronic fetal hemorrhage, uncompensated phlebotomy and inadequate iron supplementation.

Iron supplementation recommended at 1st post natal month for pre-term infants and at 4-6 post natal months for otherwise healthy term infants.[1]

Effects of Iron Deficiency

Consequences of iron deficiency are fatigue and tachyarrhythmia occur in severe anemia cases.

Concentration of iron in human milk is low 0.2-0.4mg/litre additional sources of iron are needed about 4-6 months, when neonatal iron stores have been depleted.

Fetal and neonatal erythrocytes are considerable larger than old children and adults.

Infants between 6 moths -2 years of age have low hemoglobin low MCV than adults.

LBW infants have low iron stores at birth and rapid post natal growth rate leading to depletion of iron stores within 2-3 months of age.

Iron drops at a dose of 1-2 mg/iron/kg/day have been recommended for infants.

Iron supplementation of least fed infants may saturate human milk lactoferin does diminishing its anti infective properties.

Parenteral iron therapy has been associated with exacerbation of malaria and neonatal sepsis.[2]

NEONATAL HAEMOCHROMTOSIS

Increased accumulation of iron stores results in neonatal haemochromatosis.

Neonatal iron storage disorder is rare often fatal disorder either death in utero or acute liver failure in neonatal period autosomal recessive mode of inheritance often pregnancies complicated by oligohydramnios or mega placenta. Other organs affected in pancreas heart thyroid gland salivary glands sparing reticulo endothelial system this iron storage disease in neonate may respond to iron chelation (Deferoxamine), prostaglandin E, and antioxidant.

Liver transplant remain the only therapeutic option in presence of liver failure.

Free iron is able to transfer electrons and catalyze free radical forming reactions.

Factors predispose to neonatal sepsis includes

1. Iron overload
2. G6PD deficiency

Term baby 10-33 mmol/l may be higher at birth.

Those babies weighing less than 1500g at birth require supplemental iron to prevent development late anemia due to developmental deficiency.

Iron supplements in VLBW should be started on 15th day of life in the follow up dose increment.

2mg/kg for 24 hours for 1500-2500 at birth

3mg/kg for 24 hours for infants (1000-1500g) at birth weight

4mg/kg for 24 hours for infants<1000 g birth weight.[3]

It is observed in all neonates, term or preterm we observe koilonychia (spoon shaped nails) seen in babies only in big toe nails of both the feet. If it is due to iron deficiency anemia, due to maternal or fetal deficiency of iron, koilonychia should occur in all finger or toe nails.

Hence I postulate that koilonychia is not only due to iron deficiency, it is mainly due to the movement of the babies in the amniotic sac where the baby is playing and piercing the sac and coming out of the sac on delivery. It is food for thought!.

REFERENCES

1. Hulya ozdemir etal iron deficiency anemia in late preterm infants. turk j paeditr, 2013; 55: 500-505.
2. Manusetil iron deficiency anaemia during first 2 years of life scandivian journal of nutrition, 2002; 46(1): 20-30.
3. Sumes MA. acorrent prespective on the pathogenesis of iron deficiency in small children. European journal of paediatrics, 1981; 137: 251-253.