

**Background:** Iron is an essential micronutrient that plays a significant role in critical cellular functions in all organ systems in all species. Iron is particularly vital for early brain growth and function in humans since it supports neuronal and glial energy metabolism, neurotransmitter synthesis and myelination.

**Methods:** 93 infants born through normal vaginal and cesarean delivery, enrolled in this study. According to maternal iron supplementation the sample divided in to two groups: iron supplemented group or a non-iron supplemented group. Women in the iron supplemented group consumed daily prenatal supplements. At the time of delivery, 5-ml of blood was obtained from the umbilical cord after early ligation of the cord, for each sample (Hb), (MCV), (RDW), (CBI) and (TIBC) was measured. Maternal age, Gestational age, parity birth weight, and baby sex were also recorded.

**Results:** The mean of neonatal birth weight was higher in iron supplemented group (2589.29±638.74gm) than that in non- iron supplemented group (2150.94±601.48), (P<0.01). The Cord Blood Markers of the newborns (Hb, MCV ,CBI, TIBC) shows higher values in iron-supplemented group than that in non-iron supplemented group, (P<0.05). The cord blood markers of SGA newborns (Hb, MCV, CBI, TICB) were more than that in AGA newborns (P<0.01).

**Conclusions:** Maternal iron supplementation during pregnancy significantly increases neonatal birth weight. Most the cord blood hematological markers of neonate have higher value in iron-supplemented mothers than that in non-iron supplemented mothers which indicated better iron status.