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EFFECTS OF IRON SUPPLEMENTATION ON SERUM HEPCIDIN IN LOW BIRTH WEIGHT INFANTS

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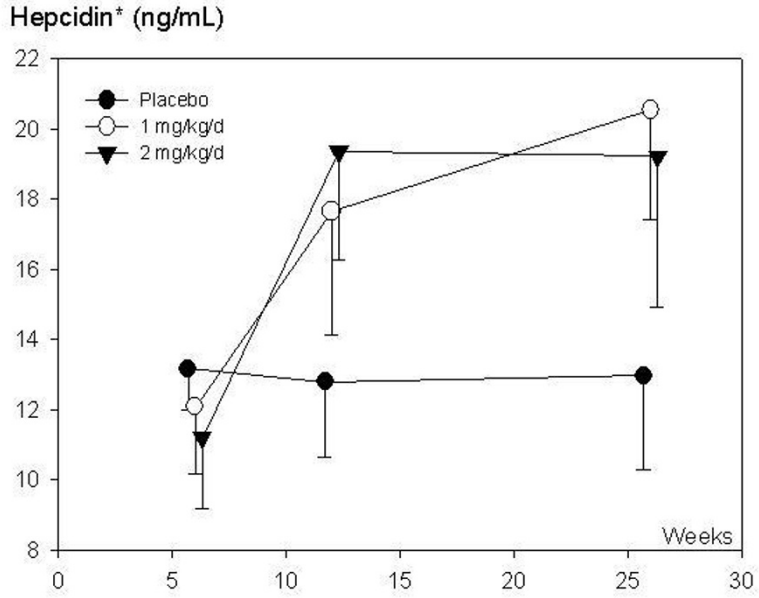
Background and aims: The iron regulatory hormone hepcidin has not been studied in infants, who experience large physiological changes in iron status. The objective was to study hepcidin and its correlation to iron status in iron-replete and iron-deficient low birth weight (LBW) infants, a group at particular risk of iron deficiency (ID).

Methods: We randomized 285 healthy LBW infants to receive three different levels of iron supplements; 0 (Placebo), 1, or 2 mg/kg/day, from 6 weeks to 6 months of age. Hepcidin, Hb, and six variables of iron status were analyzed.

Result: Serum hepcidin did not change over time in the placebo group, despite a rapid decrease in serum ferritin. In iron supplemented infants, hepcidin increased significantly, reaching a mean (SD) concentration of 19.2 (2.5) ng/mL in the 2 mg/kg/day-group vs 13.0 (2.6) ng/mL in the placebo group at 6 months ($p < .001$).



[Hepcidin responce to iron supplements]

The difference was even larger between iron-deficient infants and iron-replete infants at 6 mo (7.0 (2.9) ng/mL vs 21.6 (2.4) ng/mL). Hepcidin was independently correlated to ferritin and transferrin receptor concentration at 6 wk, ferritin alone at 12 wk, and to ferritin, transferrin, and Hb at 6 mo.

Conclusions: Hepcidin is closely associated with iron status and may be a useful indicator of iron stores in infants, possibly less age dependent than ferritin.