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## Relationship between hepcidin, L-carnitine, anemia and inflammation in children of hemodialysis

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**Background:** The majority of studies on anemia, inflammation, and disturbances of iron metabolism have focused on patients in end-stage renal failure; this study aim was to investigate the relationship between Carnitine and Hepcidin levels among the children of hemodialysis end stage renal disease (ESRD) and iron metabolism in them.

**Method:** Thirty children with ESRD undergoing HD, and thirty healthy, age- and sex-matched children were included. Serum levels of iron, ferritin and total binding capacity (TIBC), hemoglobin, albumin (ALB). Total L-Carnitine (LC), high-sensitivity C-reactive protein (hs CRP), hepcidin were measured.

**Result:** Abnormal serum inflammatory changes iron status and LC, were exhibited in HD children compared with healthy controls, Pearson's correlation revealed a significant inverse correlation between hepcidin levels and ferritin, and positively with hs CRP and iron where serum albumin positively with hsCRP and ferritin, also a positive correlation found between LC and iron, ferritin. A multivariate regression analysis demonstrated a positive correlation between inflammatory risk marker hs CRP >3 mg/l) and hepcidin levels. Also a positive correlation was found between LC and iron levels.

**Conclusion:** In children under hemodialysis, oral L-carnitine can increase serum albumin level and prevent CRP rising, beneficial effects of L-carnitine on anemia and, its supplementation is recommended for these patients. Malnutrition-inflammation complex is an incremental predictor in hemodialysis patients. Further studies are needed to assess whether modulating inflammatory or nutritional processes can improve anemia management.

## Biography

Gamila S.M.El-Saeed has completed her M.D from Medical University in Basic Science and Biochemistry from Cairo College, Egypt. She has published more than 30 papers in international journals. She is a professor of Medical Biochemistry in National Research Centre, Egypt.

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