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# Hepcidin Levels and Erythropoietin Resistance Index Correlation Among Patients On Routine Hemodialysis

**Yenny Kandarini**, Gusde Janardhana, Gede Wira Mahadita, I Gde Raka Widiana
Department of Internal Medicine, Chronic Kidney Disease Research Group, Nephrology and Hypertension Division, Faculty of Medicine Udayana University, Prof. IGNG Ngoerah General Hospital, Denpasar-Bali, Indonesia

**Objectives :** Anemia occurs in 80-90% of patients with chronic kidney disease (CKD), especially those undergoing hemodialysis. Anemia in CKD, also known as renal anemia, is an essential complication of CKD because it contributes significantly to the symptoms, progression, and cardiovascular complications of CKD patients. Erythropoietin Stimulating Agent (ESA) therapy has revolutionized the management of CKD anemia and can effectively treat most CKD patients with anemia. Approximately 10-20% of patients report being hypo- or non-responsive to ESA. Resistance to ESA therapy is described as the Erythropoietin Resistance Index (ERI). Resistance to ESA is often associated with abnormalities of iron metabolism and inflammation. Iron metabolism abnormalities and chronic inflammatory conditions are frequently found in CKD patients.
**Methods :** This analytic cross-sectional design observational study with 70 regular hemodialysis patients was conducted in Prof. Dr. IGNG Ngoerah Denpasar Hospital. ELISA technique was used to measure the hepcidin serum. The ERI is calculated based on the weekly dose of ESA adjusted for the patient's body weight per week (IU/kgBW/week) divided by the Hemoglobin (Hb) level (gr/dl).
**Results :** Demographic description of 70 patients' median age is 53,5 years old (21- 75 years old), with 38 (54,3%) females and 32 (45,7%) males. The median value of hepcidin was 4,01±1,04 ng/ml, and the median ERI value was 12,37 IU/kg/week/g/dl (9,27-19,91 IU/kg/week/g/dl). The relationship of hepcidin serum to ERI was statistically significant (r:0,46, p<0,001). In multivariate analysis, there were statistically significant findings between ERI and variables such as transferrin saturation (β: -0,284, p= 0,01) and ferritin (β: 0,345, p= 0,003).
**Conclusions :** This study proved the correlation between hepcidin serum and the Erythropoietin Resistance Index (ERI).