

## **Reticulocyte Hemoglobin Equivalent: An Indicator of Reduced Iron Availability in Chronic Kidney Diseases during Erythropoietin Therapy.**

**Garzia M, Di Mario A, Ferraro E, Tazza L, Rossi E, Luciani G, Zini G.**

Institute of Hematology, Department of Surgery, Catholic University of Sacred Heart, Rome, Italy

Anemia is a common complication of chronic kidney disease (CKD), particularly in dialysis patients. Correction of anemia in CKD patients includes the administration of both recombinant human erythropoietin and intravenous iron. An optimization of iron treatment requires obtaining a target hemoglobin level and avoiding an excessive body iron overload. The reticulocyte hemoglobin content (CHr) has been shown to be an early indicator of iron-restricted erythropoiesis. The recent European guidelines for anemia treatment in CKD assessed the value for CHr >29 pg/cell as the reticulocyte parameter to evaluate a patient's iron needs. The reticulocyte hemoglobin equivalent (RET-He), recently introduced to determine the forward scatter of fluorescence-labeled reticulocytes, seems to be a sensitive indicator of iron-deficiency anemia. This study evaluates the concordance between the CHr parameter, used as a reference, and the new RET-He in a cohort of 57 dialysis patients referred to the Nephrology Unit of our hospital. All patients received erythropoietin, and iron was administered intravenously to maintain the hemoglobin level between 10 and 12 mg/dL. A total of 285 determinations were performed with both instruments. In the dialysis population, the 95% central range for CHr of 24.8 to 36.3 pg corresponds to a range for RET-He of 23.3 to 40.1 pg, with a mean bias of 1.12 pg between the 2 parameters. In comparison with CHr, the value of 30.5 pg for RET-He appeared to be the best cut-off point with a very good sensitivity and specificity to determine patients needing iron supplementation. Our study showed an excellent diagnostic efficiency of RET-He to evaluate patients needing iron support and demonstrated a strict correspondence between the classic CHr and the new Ret-He. This correspondence was independent of clinical changes, frequently occurring in dialysis patients. Both parameters could be used soon to guide and monitor iron treatment in dialysis patients.

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