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Erythrocyte/ Reticulocyte Parameters Cutoff Values of Egyptian Adults in Fayoum University Hospital, Egypt

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A thesis submitted for partial fulfillment of master degree in internal medicine

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2024

Reticulocytes are the youngest erythrocytes released from the bone marrow into circulating blood. Under normal conditions, they mature for 1-3 days within the bone marrow and circulate for 1-2 days before becoming mature erythrocytes. The reticulocyte hemoglobin content (CHr or Ret-He) provides an indirect measure of the functional iron available for new red blood cell production over the previous 3-4 days, as the most recent Hb synthesis state is immediately reflected in CHr.

The study aimed to estimate the cutoff value of Erythrocyte / reticulocyte parameters of adult patients with latent iron deficiency and iron deficiency anemia in Fayoum University Hospital.

The study participants were evaluated by full medical history, detailed physical examination and laboratory investigations including complete blood count, s. ferritin, s iron, S. ferritin, TIBC.

Our study confirmed that Among IDA cases the Sensitivity and specificity test for Reticulocyte HB illustrated a significant sensitivity of (91.7%) and a specificity of (64.8%) at cutoff value (23.05 pg) with p-value 0.002.

Our study demonstrated that among IDA cases as regards cause of anemia 57% of them were for gynecological loss, 42% of them were GIT loss, and only 1% of them because of deficient intake.

Our study confirmed that there were a statistical significant lower levels of HB, MCV, MCH, MCHC, RBCS, s.ferritin, reticulocyte HB, and LFR with p-value <0.05 among IDA cases in addition higher significant levels of retics count, IRF, MFR, HFR, RDW-SD, and RDW-CV.

CHr can be used to identify iron deficiency more precisely in situations that are thought to be challenging to diagnose using traditional iron indices. Furthermore, CHr can be used to identify iron insufficiency early in diagnosis.