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Some iron parameters among transfusion-dependent subjects in Maiduguri, Nigeria: The case for provision of chelating agents in developing countries

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Conditions associated with refractory anemia require repeated blood transfusion. Despite the benefits of red cell transfusion, it is associated with complications including iron overload. The aim of this study was to determine some serum iron parameters, antioxidant vitamins and micronutrients levels among transfusion-dependent subjects. The study included 101 transfusion-dependent subjects and 50 apparently healthy controls that had no history of blood transfusion. Some iron parameters such as ferritin, serum iron and percentage transferrin saturation were significantly higher among the transfusion-dependent subjects ($p=0.000$) compared to controls. There was no correlation observed between ferritin and C-reactive protein ($r=0.059$, $p=0.558$). This study showed a significant decrease in HB, PCV, RBC, MCV, MCH and increase in platelet and white cell count among the subjects compared to the control ($p<0.05$). Vitamin A, B5, E and copper were significantly lower among the subjects compared to the control participants ($p<0.05$). There was no correlation between ferritin and vitamin A, B5, E and copper among the study subjects ($p>0.05$). Similarly, there was no significant correlation between the ferritin and zinc levels among the study subjects ($p>0.014$). There was a significant elevation in the serum iron parameters and simultaneous decrease in the antioxidant vitamins and micronutrients levels among the transfusion-dependent subjects. There may be need to routinely provide iron chelating treatment and supplementation of vitamin A, B5 and E for transfusion-dependent subjects in the area to obviate the possible negative effect of iron overload among the subjects.

Biography

Osaro Erhabor is a Professor of Hematology, Transfusion Medicine and Laboratory of Total Quality Management. He is an Alumni of Rivers State University of Science and Technology, Nigeria, University of Greenwich in the United Kingdom and Francis Tuttle College of Technology in Oklahoma, USA. He is the Author of five scientific books. He has published more than 190 scientific papers in the field of Infectious Diseases, Hematology, Blood Transfusion Science and Total Quality Management. He is a member of the editorial board as well as an article Reviewer of several international scientific journals.

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