OMICS Group Conferences
Accelerating Scientific Discovery

International Conference on
Hematology & Blood Disorders
September 23-25, 2013 DoubleTree by Hilton Hotel Raleigh-Durham Airport at RTP, NC, USA

Foetal haemoglobin levels in Sickle Cell Disease (SCD) patients in Sokoto, Nigeria

Erhabor Osaro
Usmanu Danfodio University, Nigeria

Background: Sickle-cell disease (SCD) is a global public health problem occurring more commonly among people in the tropical and sub-tropical sub-Saharan regions where malaria is endemic. In this present study, we have investigated the haemoglobin F level (HBF) of 69 sickle cell disease subjects and 30 age and gender-matched apparently healthy controls.

Methods: This case–control study was conducted among homozygous sickle cell patients attending the sickle cell clinics of Specialist Hospital Sokoto. About 3 milliliters of venous blood sample was collected from each participant into EDTA anticoagulated tubes. Estimation of haemoglobin F levels was carried out using Betke's method. The Packed Cell Volume (haematocrit) was determined using the Hawksley Haematospin 1300 micro haematocrit centrifuge.

Results: The foetal haemoglobin level of 69 sickle cell disease patients (subjects) and 30 apparently healthy individual with genotype AA (control) was determined. The mean HbF and packed cell volume was significantly higher among the 69 sickle cell disease subjects (2.99±5.16) compared to controls (0.733±0.700) (p=0.01). The packed cell volume was significantly higher among control participants (29.267±6.175) compared to the sickle cell disease subjects (24.57±6.99). Haemoglobin F level was compared based on the gender of the sickle cell disease subjects. The haemoglobin F level although higher among male subjects (3.0469±5.06510) compared to females (2.8836±5.52), the difference however was not statistically significant (p=0.626). The haemoglobin F level was compared based of the age groups of the sickle cell disease subjects. The Haemoglobin F level appear to declining as age advances from 0.6-5yrs (3.26±4.92) through 6-10yrs (3.01±5.58) and 11-16yrs (2.34±4.70).We observed a significant negative correlation between age and haemoglobin F levels among sickle cell disease subjects (r=-7.52, 0.001).

Conclusion: In conclusion, we have observed that the HbF level is higher in sickle cell disease subjects compared to control participants with haemoglobin AA, that the haemoglobin F level is higher among male subjects compared to females, that the haemoglobin F level appears to decline as age advances and that a significant negative correlation exist between age and haemoglobin F levels among sickle cell disease subjects. We recommend that estimation of HbF level be carried out in conjunction with haemoglobin electrophoresis in the diagnosis, clinical management and in the determination of the clinical course of sickle cell disease. There is need to build the capacity in resource poor countries to optimize the diagnosis of sickle cell disease and other haemoglobinopathies. A national neonatal screen program should be set up by the Nigerian Government to facilitate the early diagnosis and effective management of children with sickle cell disease.

Biography

Erhabor Osaro is a Chartered Scientist and Fellow of the Institute of Biomedical Science of London. He holds a Ph.D. degree in immunohaematology. He completed the University of Greenwich specialist courses in blood transfusion and laboratory quality management system. His teaching experience spans both Nigeria and the United Kingdom. His work experience includes working as a Specialist Biomedical Scientist at the Royal Bolton Hospital-a continuous improvement conscious and a centre of excellence in the implementation of lean principles in the health sector in Europe. He is the recipient of several awards, including the famous British Blood Transfusion Society Young Scientist Award and the Margaret Kenwright Young Scientist Award. He is a registration portfolio verifier/examiner for the Institute of Biomedical Science of London. He is a member of the editorial board as well as an article reviewer for several scientific journals. A well-published contributor in the field of infectious diseases, immunohaematology, and transfusion medicine, he is chairman of the board of directors of Nelson Biomedical Limited, UK and Nigeria.

n_osaro@yahoo.com