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Soluble CD36 as a determinant of disease severity among patients with sickle cell anaemia in Nigeria

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Background: This descriptive, cross-sectional study was aimed at determining the relationship between soluble CD36 (sCD36; a cell adhesion marker), levels of % Hb F, haematological parameters and disease severity in adults with SCA in Kano, Nigeria.

Methods: One hundred and forty subjects with SCA in steady state were purposively selected and compared with 70 apparently healthy controls. Ten milliliters of venous blood was obtained to determine CBC (using auto haematology analyzer), % Hb F (estimated by modified Betke's method) and sCD36, using Human Soluble CD36 Elisa Kit (ADIPO Bioscience Inc., USA). Severity was assessed by El-Hazmi's scoring system. Student t-test and Pearson's correlation were used as statistical test and P-value ≤ 0.05 was used to define statistical significance.

Results: The median sCD36 was significantly higher ($P < 0.01$) in subjects with SCA (22.3 ng/ml) than in the controls (14.8 ng/ml). A direct correlation was observed between sCD36 and WBC count ($\rho = 0.7410$; $P < 0.001$), an inverse correlation was observed between sCD36 and % Hb F ($\rho = -0.5406$; $P < 0.001$) and a direct correlation was observed between sCD36 and severity score ($\rho = 0.5808$; $P < 0.001$) in the subjects. No such relationship was observed among the parameters in the control group. Complications like ACS, stroke, retinopathy and AVN of the femoral head were observed to be associated with high sCD36 levels. A multiple logistic regression modeling revealed that WBC count predicted the most significant odds (OR=3.87; $P < 0.001$) for sCD36 positivity.

Conclusion: The level of sCD36 is a marker of disease severity and may predict the occurrence of vascular-related complications of adults with SCA; and WBC alone may be used as a surrogate marker of sCD36 level.

Biography

B Yusuf Jamoh has completed his MBBS programme from Bayero University, Kano, Nigeria and had MSc Cancer Biology, with commendation, from Kingston University, London. He is a Fellow of National Postgraduate Medical College of Nigeria and was appointed as Honorary Consultant Physician, Ahmadu Bello University Teaching Hospital (ABUTH), Zaria, Nigeria. He is the Head of Clinical Haematology Unit, ABUTH. He has published 12 papers in reputed journals and he is currently acting Postgraduate Coordinator, Department of Medicine, Ahmadu Bello University, Zaria, Nigeria.

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