

VOLUME 38, NUMBER 4

ISSN 0189 - 160X

APRIL 2021

WAJM

WEST AFRICAN JOURNAL OF MEDICINE

ORIGINALITY AND EXCELLENCE IN MEDICINE AND SURGERY



OFFICIAL PUBLICATION OF
THE WEST AFRICAN COLLEGE OF PHYSICIANS *AND*
WEST AFRICAN COLLEGE OF SURGEONS



www.wajmed.org



TABLE OF CONTENTS

GENERAL INFORMATION	IC
INFORMATION FOR AUTHORS	1F
EDITORIAL NOTES	299
ORIGINAL ARTICLES	
HIV-Associated Nephropathy among Children with Renal Disease in Port Harcourt, Nigeria	307
T. A. Uchenwa, I. C. Anochie	
Dental Trauma in Adult and Elderly Nigerians: A National Survey	313
E. C. Otoh, O. O. Taiwo, O. A. Adeleke, O. J. Majekodunmi, S. O. Ajike	
Knowledge, Attitude and Practice on Covid-19 among Clinical Healthcare Workers in Bingham University Teaching Hospital (BHUTH) Jos, Plateau State, Nigeria	321
M. Shehu, H. Shehu, O. Momodu, O. Abraham, E. E. Esegbe	
Comparison of the Diagnostic Relevance of Albumin Creatinine Ratio Versus Cystatin C in Assessment of Cardiovascular Complication in Type 2 Diabetics	328
B. K. Myke-Mbata, S. C. Meludu, D. O. Ochalefu, B. C. Basil	
Self-perceived Burden on Caregivers, Anxiety and Depression among Chronic Kidney Disease Patients in Southern Nigeria	335
O. A. Adejumo, E. I. Okaka, A. A. Akinbodewa, O. I. Iyawe, I. R. Edeki, O. S. Abolarin	
Frequency of Osteoporosis in Black Nigerian Women Aged 50 and above with Degenerative Musculoskeletal Diseases and Fractures	342
O. A. Adewole, S. O. Idowu, M. O. Shoga, M. O. Kayode, O. O. Adelowo	
Knowledge, Attitudes, and Practices towards COVID-19 Transmission and Preventive Measures among Residents of Nigeria: A Population-Based Survey through Social Media	347
A. T. Akafa, A. Amos, A. Okeke and A. C. Oreh	
School Health Instructions in Primary Schools - A Study of Gwagwalada Area Council, Federal Capital Territory Nigeria	359
U. A. Sanni, U. M. Offiong, E. A. Anigilaje, K. I. Airede	
Plasma L-Arginine in Sickle Cell Anaemia Patients in Crises and its Correlation with Markers of Severity of Disease	366
O. W. Aworanti, T. S. Akingbola, A. Adeomi, A. E. Alagbe, A. O. Salako	
Meniscus Sign: A Test for the Confirmation of Correct Placement of Epidural Catheter	374
H. O. Idehen, G. Agbonkhese	
Clinicopathological Pattern and Management of Primary Lung Cancer in Ilorin, Nigeria	380
P. O. Adeoye, O. O. Desalu, C. K. P. Ofoegbu, A. E. Fawibe, A. K. Salami, R. O. Akanbi, C. M. Opeyemi, O. O. K. Ibrahim, O. B. Ojuawo, A. O. Aladesanmi, I. Olaoye	
CASE REPORTS	
Protein C Deficiency in a Patient with Anomalous Hemiazzygous Vein and Portal Vein Thrombosis	387
F. A. Fasola, A. Akere, C. U. Akunwata, C. Onyejelam, M. A. Osundina	
Aplasia Cutis Congenita: A Case Report	391
O. J. Ugowe, S. A. Balogun and E. A. Adejuyigbe	
Favourable Outcome of Severe Lassa Fever Following Early Diagnosis and Treatment: A Case Report	395
J. A. Onuh, A. E. Uloko	
CLINICAL ARTICLE	
Comparison of Short Course Versus Long Course Antibiotic Prophylaxis for Caesarean Section: A Randomised Controlled Trial	398
A. C. Ezeike, C. O. Agboghroma, E. R. Eftie, K. W. Durojaiye	
INDEX TO VOLUME 38, NO. 4, 2021	
Author Index	405
Subject Index	406



Plasma L-Arginine in Sickle Cell Anaemia Patients in Crises and its Correlation with Markers of Severity of Disease

L-Arginine Plasmatique Dans La Drépanocytose Patients En Crise Et Sa Corrélation Avec Les Marqueurs De Gravité De La Maladie

¹O. W. Aworanti, ^{1,2}T. S. Akingbola*, ³A. Adeomi, ⁴A. E. Alagbe, ⁵A. O. Salako

ABSTRACT

Introduction/Objectives: Sickle Cell Anaemia (SCA) is a chronic haemolytic and inflammatory disorder characterized by repeated vaso-occlusive (VOC) and hyperhaemolytic crises (HC). These crises determine the quality of life of SCA patients. This study estimated the plasma L-arginine levels in SCA patients during crises (HC and VOC), and correlated these levels with the markers of inflammation in the patients.

Methods: A cross-sectional study comprising of 120 consenting adults (60 SCA patients and 60 HbAA controls). The SCA were grouped as SCA patients in VOC or SCA patients in HC and HbAA controls. All SCA patients presented at the emergency room or the daycare unit of Haematology Department, University College Hospital, Ibadan, Nigeria. Blood samples were collected and haematological parameters and plasma L-arginine levels were determined.

Results: There were 30 SCA patients in VOC, 30 SCA patients in HC, and 60 HbAA controls with age ranging from 18 to 58 years. The controls had a higher haematocrit than the SCA patients (HbAA>SCA VOC> SCA HC, $p<0.001$) in each pair wise analysis. The VOC and the HC groups had higher mean White Blood Cell (WBC), platelet count, Absolute Neutrophil Count (ANC), Absolute Lymphocyte Count (ALC), Absolute Monocyte Count (AMC), and reticulocytes count than the HbAA controls. Similarly, the HC group had higher mean WBC, platelet count, ANC, ALC, AMC, and reticulocytes count, and a lower mean percentage irreversible sickle cell than the VOC group. The mean plasma L-arginine was significantly higher in the HbAA control group than those of SCA patients in crises (HbAA controls>SCA VOC>SCA HC, $p<0.001$), and higher in the SCA VOC group than in the HC group. There was no significant correlation between plasma L-arginine levels, reticulocyte count, markers of VOC severity and markers of inflammations.

Conclusion: The plasma L-arginine levels of SCA patients in VOC and HC were lower than those of the HbAA controls. The degree of reduction was however marked in patients in hyperhaemolytic crisis. There was no significant association between the plasma L-arginine levels and the markers of inflammation in the studied patients. The findings in this study buttress the need for consideration of L-arginine supplementation in patients with SCA especially during acute hemolytic crises. *WAJM 2021; 38 (4): 366-373*

Keywords: Sickle cell anaemia, L-arginine, Vaso-occlusive crisis, Hyperhaemolytic crisis

ABSTRAIT

Introduction / Objectifs: La SCA est un mal hémolytique et inflammatoire chronique caractérisé par des crises vaso-occlusives (COV) et hyperhémolytiques (HC) répétées, qui déterminent la qualité de vie des patients atteints de SCA. L'étude a estimé les taux plasmatiques de L-arginine chez les patients atteints de SCA pendant les crises (HC et COV), et a mis en corrélation ces taux avec les marqueurs de l'inflammation chez les patients.

Méthodes: Une étude transversale comprenant 120 adultes consentants (60 patients SCA et 60 contrôles HbAA) regroupés en patients SCA en COV; Patients SCA à HC (tous les patients SCA présentés à la salle d'urgence ou à l'unité de garde du département d'hématologie, University College Hospital, Ibadan, Nigéria); et contrôles HbAA. Des échantillons de sang ont été prélevés et les paramètres hématologiques et les taux de L-arginine ont été déterminés.

Résultats: Il y avait 30 patients SCA en COV, 30 patients SCA en HC et 60 contrôles HbAA avec un âge allant de 18 à 58 ans. Les témoins avaient un hémocrite plus élevé que les patients SCA (HbAA> SCA VOC> SCA HC, $p<0,001$) dans chaque analyse par paire. Les groupes VOC et HC avaient des taux moyens de globules blancs, de plaquettes, d'ANC, d'ALC, d'AMC et de réticulocytes plus élevés que les témoins HbAA. De même, le groupe HC avait un nombre moyen de globules blancs, de plaquettes, d'ANC, d'ALC, d'AMC et de réticulocytes plus élevés, et un pourcentage moyen de drépanocytose irréversible plus faible que le groupe COV. La L-arginine plasmatique moyenne était significativement plus élevée dans le groupe témoin HbAA que chez les patients SCA en crise (contrôles HbAA> SCA VOC> SCA HC, $p<0,001$), et plus élevée dans le groupe SCA VOC que dans le groupe HC, $p<0,001$. Il n'y avait pas de corrélation significative entre les taux de L-arginine, le nombre de réticulocytes, les marqueurs de gravité des COV et les marqueurs d'inflammations.

Conclusion: Les taux plasmatiques de L-arginine chez les patients SCA en COV et HC étaient inférieurs à ceux des contrôles HbAA, et le degré de réduction est cependant marqué chez les patients en crise hyperhémolytique. Il n'y avait pas d'association significative entre les taux plasmatiques de L-arginine et les marqueurs de l'inflammation chez les patients étudiés. Les résultats de cette étude renforcent la nécessité d'envisager une supplémentation en L-arginine chez les patients atteints de SCA, en particulier pendant les crises hémolytiques aiguës. *WAJM 2021; 38 (4): 366-373*

Mots clés: anémie falciforme, L-arginine, crise vaso-occlusive, crise hyperhémolytique

¹Department of Haematology, University College Hospital, Ibadan, Nigeria. ²Department of Haematology, College of Medicine, University of Ibadan, Ibadan, Nigeria. ³Department of Community Medicine, College of Health Sciences, Obafemi Awolowo, University, Ile-ife, Nigeria.

⁴Department of Clinical Pathology, School of Medical Sciences, State University of Campinas, Brazil. ⁵Clinical Science Department, Nigerian Institute of Medical Research, Yaba, Lagos

*Correspondence: Dr Titilola Stella Akingbola. E-mail: titiakingbola@yahoo.com