

VOLUME 42, NUMBER 7
July 2025

ISSN 0189 - 160X

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.com



TABLE OF CONTENTS

GENERAL INFORMATION	IC
INFORMATION FOR AUTHORS	1F
EDITORIAL NOTE:	
Antioxidant Depletion in Asphyxiated Neonates, Neuropsychiatric Burden in Parkinson's Disease, and Public Health	519
Vulnerabilities: The Need for Proactive Healthcare Delivery – G. E. Erhabor	
LETTER TO THE EDITOR	
Remarks on the Correlation between the EU-TIRADS Score and the Definitive Histology of Thyroid	521
Nodules Operated on in Lomé	
I. Sengul, D. Sengul	
ORIGINAL ARTICLES	
Assessing the Correlation of Protein C and Protein S Levels with Stroke Severity and Functional Outcomes in Adults with Ischaemic Stroke	523
A. O. Idowu, M. B. Fawale, R. A. Bolarinwa, A. A. Sanusi, A. Ogunmodede, S. O. Lawal, O. A. Asifat, A. A. Adebawale, M. A. Komolafe	
Assessment of the Initial Acquisition of <i>Streptococcus mutans</i> in Infants Born to Pregnant Women Attending the Lagos University Teaching Hospital	531
O. Ashaolu, O. O. Orenuga, F. A. Oredugba, F. O. Nwaokorie	
Knowledge, Risk Perception and Prevention against Diphtheria among Caregivers of Children under-fives in Chikun Local Government Area, Kaduna State, Nigeria	542
T. U. Okwute, I. A. Joshua, S. Kabir	
Enzymatic and Non-enzymatic Antioxidants as Related to Immediate Hospital Outcomes in Term Nigerian Babies with Perinatal Asphyxia	552
D. K. Kuti, T. Ogundele, B. P. Kuti, A. O. Oyelami, E.A Adejuyigbe	
Evaluation of Microalbuminuria Level to Determine Diabetic Nephropathy Among Type 2 Diabetic Patients in Zaria, Nigeria	559
A. B. Dogara, I. S. Aliyu, D. S. Mshelia, H. M. Suleiman, F. A. Mahmud, M. G. Abubakar	
Prevalence and Risk Factors of Contrast Induced Nephropathy in Maiduguri, Northeastern Nigeria	566
U. Loskurima, M. M. Sulaiman, M. Lawan, A. Farate, J. Shettima, A. Mamza, A. O. Amali, A. G. Habibu, M. M. Dungus, B. Bunu, A. I. Galtimari, I. K. Chiroma, A. D. Dayar, M. M. Dungus, I. Ummate	
Prevalence of Psychosis Spectrum Symptoms, Association with Quality of Life and Caregiver Burden in Yoruba Nigerians with Parkinson's Disease: A Matched Case Control Study	571
A. Ojagbemi, O. Adediran, H. Oyedapo-Ishola, T. Olojugba, O. Elugbadebo, U. Imo, A. K. Bakare, F. Taiwo	
Rubella IgG Immunity: Spatial Distribution, Euclidean Distance Analysis, Correlates and Predictors among Women of Reproductive Age, Southwest Nigeria	581
K. A. Durowade, O. I. Musa, M. A. Adeniyi, R. B. Mudashiru, T. A. Sanni, A. G. Salaudeen, S. T. Suleiman, O. R. Ilori, D. B. Parakoyi	
RETROSPECTIVE CROSS-SECTIONAL STUDY	
Spectrum of Rheumatic and Musculoskeletal Diseases in a Rheumatology Clinic in Nigeria: A Report of the First 5000 Patients	590
O. O. Adelowo, A. Ibrahim, E. Airenakho, O. Ojo, H. Ahmad, O. Onwualu, H. Aliyu, H. B. Olaosebikan, A. Yerima	
INDEX TO VOLUME 41, NO. 11, 2024	
Author Index	597
Subject Index	598



Assessment of the Initial Acquisition of *Streptococcus mutans* in Infants Born to Pregnant Women Attending the Lagos University Teaching Hospital

Évaluation de l'Acquisition Initiale de Streptococcus mutans chez les Nourrissons Nés de Femmes Enceintes Suivies au Centre Hospitalier Universitaire de Lagos

¹O. Ashaolu, ^{1,2*}O. O. Orenuga, ^{1,2}F. A. Oredugba, ³F. O. Nwaokorie

ABSTRACT

AIM: *Streptococcus mutans* has been strongly associated with dental caries. The mother, the primary caregiver in the first year of life is the most significant source of the bacteria. The presence of *S. mutans* in infants from birth to 6 weeks of life was assessed.

METHODOLOGY: Prospective study of 24 women, enrolled during their third trimester. Socio-demographic characteristics, oral hygiene, dietary practices and obstetric characteristics obtained using investigator-administered questionnaire. Saliva samples collection from neonates at birth and six weeks, investigated by cultural microbial analysis and polymerase chain reaction to detect *S. mutans* specific species genes.

RESULTS: Total of 24 mother-child pairs assessed. Mothers mean age; 31.29 (+/- 4.6) years. Neonates' mean gestational age; 38.79 (+/-1.4) weeks, with 14 (58.3%) females and 10 (41.7) males.

Microbiological culture analysis of the saliva sample of the neonates showed that 25% of the neonates had *S. mutans* at birth and 25% had it at 6 weeks post-delivery.

Approximately 25% of salivary samples from the neonates showed *S. mutans* upon cultural analysis and correlated with the presence of the bacteria in 41.7% of the samples using Polymerase chain reaction. *Streptococcus mutans* detected at birth in 60% of neonates were identical to that of the mothers.

CONCLUSION: Maternal transmission is the primary source of *S. mutans* acquisition. Culture analysis of oral fluid revealed presence of viable and cultivable *S. mutans* in neonates asserting the acquisition of these species at birth and their presence before tooth eruption.

WAJM 2025; 42 (7): 531-541

KEYWORDS: *Streptococcus mutans*, Saliva, Initial acquisition, Mothers, Infants

RÉSUMÉ

OBJECTIF: *Streptococcus mutans* est fortement associé aux caries dentaires. La mère, en tant que principale personne en charge durant la première année de vie, constitue la source la plus significative de cette bactérie. Cette étude a évalué la présence de *S. mutans* chez les nourrissons, de la naissance jusqu'à six semaines de vie.

MÉTHODOLOGIE: Étude prospective menée auprès de 24 femmes, recrutés au cours du troisième trimestre de grossesse. Les caractéristiques sociodémographiques, l'hygiène bucco-dentaire, les habitudes alimentaires et les antécédents obstétricaux ont été recueillis via un questionnaire administré par l'enquêteur. Des échantillons de salive ont été prélevés chez les nouveau-nés à la naissance et à six semaines, puis analysés par culture microbienne et réaction en chaîne par polymérase (PCR) pour détecter les gènes spécifiques de *S. mutans*.

RÉSULTATS: Un total de 24 paires mère-enfant ont été évaluées. L'âge moyen des mères était de 31,29 ans (+/- 4,6). L'âge gestationnel moyen des nouveau-nés était de 38,79 semaines (+/- 1,4), avec 14 filles (58,3 %) et 10 garçons (41,7 %). L'analyse microbiologique des échantillons de salive a révélé que 25 % des nouveau-nés présentaient *Streptococcus mutans* à la naissance, et 25 % à six semaines après l'accouchement. Environ 25 % des échantillons salivaires ont montré la présence de *S. mutans* par culture, et cette présence était confirmée dans 41,7 % des échantillons par PCR. Chez 60 % des nouveau-nés ayant *Streptococcus mutans* à la naissance, les souches étaient identiques à celles de leurs mères.

CONCLUSION: La transmission maternelle constitue la principale source d'acquisition de *Streptococcus mutans*. L'analyse de la salive a révélé la présence de *S. mutans* viable et cultivable chez les nouveau-nés, confirmant une acquisition dès la naissance, avant même l'apparition des dents. WAJM 2025; 42 (7): 531-541

MOTS-CLÉS: *Streptococcus mutans*, Salive, Acquisition initiale, Mères, Nourrissons

¹Department of Child Dental Health, Lagos University Teaching Hospital, Lagos

²Department of Child Dental Health, Faculty of Dental Sciences, College of Medicine University of Lagos, Lagos

³Department of Medical Laboratory Science, Faculty of Basic Medical Sciences, College of Medicine, University of Lagos, Lagos

Corresponding Author: Prof. Omolola O. Orenuga, Department of Child Dental Health, Faculty of Dental Sciences, College of Medicine University of Lagos/Lagos University Teaching Hospital, PMB 12003 Lagos, Nigeria. E-mail: lollyreagan@yahoo.com

Abbreviations

AAPD: American Academy of Paediatric Dentistry; **AP-PCR:** Arbitrarily primed-Polymerase Chain Reaction; **bp:** Base pair; **DMFT:** Decayed Missing Filled permanent teeth; **dmf/deft:** Decayed Missing Filled extracted primary teeth; **DNA:** Deoxyribonucleic acid; **DDE:** Developmental defects of enamel; **ECC:** Early Childhood Caries; **EHP:** Enamel hypoplasia; **FAA:** Fastidious anaerobic agar; **FDI:** Federation Dentaire Internationale; **GSTB:** Glucose-sucrose-potassium tellurite-bacitracin; **GTF:** Glucosyltransferase; **MS-Agar:** Mitis-salivarius agar; **MSB-Agar:** Mitis-salivarius Bacitracin agar; **MSBB:** Mitis-Salivarius Bacitracin Broth; **LUTH:** Lagos University Teaching Hospital; **PBS:** Phosphate Buffered Saline; **PCR:** Polymerase Chain Reaction; **PFGE:** Pulse field gel electrophoresis; **RAPD:** Random amplified polymorphic DNA; **REA:** Restriction endonuclease analysis; **RNA:** Ribonucleic acid; **rRNA:** Ribosomal RNA; **rpm(-x g):** Revolutions per minute; **SB-20 agar plate:** Sucrose bacitracin 20 agar plate; **SD:** Standard deviation; **Strep Mutans:** Streptococcus Mutans; **TSA:** Trypticase soy agar; **TSB:** Trypticase soy broth; **TYCSB:** Trypticase yeast-extract-cysteine-sucrose-bacitracin; **UV:** ultraviolet; **WHO:** World Health Organisation