

VOLUME 40, NUMBER 8  
August 2023

ISSN 0189 - 160X

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# WAJM

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**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



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## ORIGINAL ARTICLE

### Burden, Severity and Characteristic Pattern of Coronary Artery Disease using 160-Slice Computed Tomographic Angiography: Earliest Report from Northern Nigeria

*Charge, Gravité et Caractéristiques de la Maladie Coronarienne à l'Aide de l'Angiographie Tomodensitométrique en 160 Coupes : Rapport le Plus Ancien du Nord du Nigeria*

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#### ABSTRACT

**BACKGROUND:** Coronary computed tomography angiography (CCTA) allows for non-invasive visualization of the coronary arteries which is promising in diagnosing coronary artery disease.

**OBJECTIVES:** To determine the prevalence, morphology, anatomic distribution pattern and correlates of CAD in our environment.

**METHODS:** This cross-sectional study was conducted on the first cohort of patients referred for CCTA in our hospital. The patients were examined with 160-slice Toshiba® CT scanner. Their demographic data, relevant clinical information as well as the findings on CCTA were extracted and documented. The data were analysed using the R programming software version 4.0.4.

**RESULTS:** Out of a total of 153 patients who presented for CCTA within the study period, 133 (84.7%) were eligible for analysis. Their age ranged from 22–78 years with a mean  $\pm$  SD of 55.8  $\pm$  11.7 years. A total of 33 (24.8%) had normal CCTA, while 100 (75.2%) had either stenosis or total occlusion. There was a significantly higher ( $p$ -value of 0.00001) calcium score among those with stenosis compared to those with normal CCTA. The severity of the stenotic lesion was associated with the calcium score. The logistic regression analyses showed a statistically significant ( $P = 0.0415$ , OR = 1.0569, 97.5% CI = 1.078152–1.123240) association between age and the presence of coronary stenosis. In addition, most of the stenotic lesions were in the left anterior descending artery (LAD).

**CONCLUSION:** Majority of the patients had coronary artery disease of variable severity and the LAD was the most involved artery. There was no significant association between sex and severity of the disease; however, old age and higher number of lesions were associated with severe disease. **WAJM 2023; 40(8): 779–785.**

**Keywords:** Angiography, Computed tomography, Coronary arteries, Stenosis.

#### RÉSUMÉ

**CONTEXTE:** L'angiographie coronaire par tomodensitométrie (ATCC) permet une visualisation non invasive des artères coronaires, ce qui est prometteur pour le diagnostic de la maladie coronarienne.

**OBJECTIFS:** Déterminer la prévalence, la morphologie, le modèle de distribution anatomique et les corrélats de la maladie coronarienne dans notre environnement.

**MÉTHODES:** Cette étude transversale a été menée sur la première cohorte de patients envoyés pour un CCTA dans notre hôpital. Les patients ont été examinés à l'aide d'un tomodensitomètre Toshiba® à 160 coupes. Leurs données démographiques, les informations cliniques pertinentes ainsi que les résultats de l'ACTC ont été extraits et documentés. Les données ont été analysées à l'aide du logiciel de programmation R version 4.0.4.

**RÉSULTATS:** Sur un total de 153 patients qui se sont présentés pour une ACTC pendant la période de l'étude, 133 (84,7 %) étaient éligibles pour l'analyse. Leur âge était compris entre 22 et 78 ans, avec une moyenne  $\pm$  écart-type de 55,8  $\pm$  11,7 ans. Au total, 33 (24,8 %) avaient une CCTA normale, tandis que 100 (75,2 %) présentaient une sténose ou une occlusion totale. Le score calcique était significativement plus élevé (valeur  $p$  de 0,00001) chez les patients présentant une sténose que chez ceux dont l'ACTC était normale. La gravité de la lésion sténosée était associée au score calcique. Les analyses de régression logistique ont montré une association statistiquement significative ( $P=0,0415$ , OR= 1,0569, 97,5% CI=1,078152-1,123240) entre l'âge et la présence d'une sténose coronaire. En outre, la plupart des lésions sténosées se trouvaient dans l'artère descendante antérieure gauche (LAD).

**CONCLUSION:** La majorité des patients présentaient une maladie coronarienne de gravité variable et l'artère LAD était l'artère la plus touchée. Il n'y avait pas d'association significative entre le sexe et la sévérité de la maladie ; cependant, l'âge avancé et le nombre plus élevé de lésions étaient associés à la sévérité de la maladie. **WAJM 2023; 40(8): 779–785.**

**Mots-clés:** Angiographie, Tomodensitométrie, Artères Coronaires, Sténose.

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