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### Hypertension and its Clinical Correlates in a Rural Community in South Western Nigeria

*L'Hypertension Et Ses Corrélations Cliniques Dans Une Communauté Rurale Du Sud-Ouest Du Nigéria*

O. O. Oni<sup>\*†</sup>, P. O. Akinwusi<sup>‡</sup>, A. O. Odeyemi<sup>†</sup>, G. M. Israel<sup>†</sup>, O. Ala<sup>†</sup>, J. O. Akande<sup>§</sup>, E. O. Oke<sup>§</sup>, A. Durodola<sup>¶</sup>, A. Idowu<sup>††</sup>, O. K. Israel<sup>††</sup>, A. O. Aremu<sup>††</sup>

#### ABSTRACT

**BACKGROUND:** Hypertension is the commonest cardiovascular risk factor globally and is a cause of untold morbidity and mortality. However, its clinical correlates at the community level have not been well elucidated.

**METHODS:** History taking, anthropometric measurements, electrocardiograms and laboratory investigations were done for all the study subjects. Ethical approval was obtained from the institution's ethical body. Analysis was done using SPSS version 20. Two hundred people were recruited for the study. The prevalence of hypertension in the community was 58.5% with 31 (15.5%) being newly diagnosed. The Body Mass Index [BMI] ( $28.2 \pm 6$  vs  $25.6 \pm 5.3$ ;  $P=0.003$ ), Waist-Hip ratio ( $0.9 \pm 0.08$  vs  $0.86 \pm 0.06$ ;  $p=0.001$ ), total cholesterol ( $5.675 \pm 1.8$  vs  $4.6 \pm 1.7$ ,  $P=0.000$ ), triglycerides ( $1.19 \pm 0.85$  vs  $0.91 \pm 0.59$ ;  $p=0.019$ ), LDL cholesterol ( $3.38 \pm 1.6$  vs  $2.66 \pm 1.5$ ;  $p=0.002$ ), heart rate ( $82.4 \pm 15.8$  vs  $76.8 \pm 11.2$ ;  $p=0.018$ ) QRS duration ( $84.8 \pm 13.4$  vs  $80.5 \pm 11.2$ ;  $p=0.040$ ), and QTc ( $0.423 \pm 0.041$  vs  $0.402 \pm 0.035$ ;  $p=0.001$ ) were higher in those with hypertension. NYHA functional class was worse in hypertensives ( $p=0.041$ ). Prevalence of left ventricular hypertrophy (LVH) in hypertensives ranged from 2.6 to 48.2%, depending on the criteria used. Systolic blood pressure, pulse pressures, HDL levels and hip circumferences were higher in those with electrocardiographic LVH. Systolic blood pressure (OR: 1.045,  $P=0.006$ ; CI: 1.013–1.079) and a normal BMI (OR: 0.159,  $p=0.004$ ; CI: 0.045–0.559) were the independent predictors of LVH in this study.

**CONCLUSION:** The prevalence of hypertension is rising, even in rural populations, with accompanying LVH, higher QTc and florid cardiovascular risk factors. It is therefore imperative to tighten the reins of control of blood pressure and other cardiovascular risk factors before the cardiovascular morbidity and mortality explode in the rural communities. *WAJM 2021; 38(3): 233–240.*

**Keywords:** Hypertension, left ventricular hypertrophy, Body mass index, HDL.

#### ABSTRACT

**CONTEXTE:** L'hypertension est le facteur de risque cardiovasculaire le plus courant dans le monde et est une cause de morbidité et de mortalité indicibles. Cependant, ses corrélats cliniques au niveau communautaire n'ont pas été bien élucidés.

**MÉTHODES:** Des antécédents, des mesures anthropométriques, des électrocardiogrammes et des examens de laboratoire ont été effectués pour tous les sujets de l'étude. L'approbation éthique a été obtenue de l'organe déontologique de l'institution. L'analyse a été effectuée à l'aide de la version 20 de SPSS. Deux cents personnes ont été recrutées pour l'étude. La prévalence de l'hypertension dans la communauté était de 58,5%, 31 (15,5%) nouvellement diagnostiqués. L'indice de masse corporelle [IMC] ( $28,2 \pm 6$  vs  $25,6 \pm 5,3$ ;  $P = 0,003$ ), le rapport taille-hanches ( $0,9 \pm 0,08$  vs  $0,86 \pm 0,06$ ;  $p = 0,001$ ), le cholestérol total ( $5,675 \pm 1,8$  vs  $4,6 \pm 1,7$ ,  $P = 0,000$ ), triglycérides ( $1,19 \pm 0,85$  vs  $0,91 \pm 0,59$ ;  $p = 0,019$ ), cholestérol LDL ( $3,38 \pm 1,6$  vs  $2,66 \pm 1,5$ ;  $p = 0,002$ ), fréquence cardiaque ( $82,4 \pm 15,8$  vs  $76,8 \pm 11,2$ ;  $p = 0,018$ ) Durée du QRS ( $84,8 \pm 13,4$  vs  $80,5 \pm 11,2$ ;  $p = 0,040$ ) et l'intervalle QTc ( $0,423 \pm 0,041$  vs  $0,402 \pm 0,035$ ;  $p = 0,001$ ) étaient plus élevés chez les personnes souffrant d'hypertension. La classe fonctionnelle NYHA était pire chez les hypertendus ( $p = 0,041$ ). La prévalence de l'hypertrophie ventriculaire gauche (LVH) chez les hypertendus variait de 2,6 à 48,2%, selon la critères utilisés. La pression artérielle systolique, les pressions de pouls, les taux de HDL et la circonférence de la hanche étaient plus élevés chez les personnes atteintes de LVH électrocardiographique. La pression artérielle systolique (OR: 1,045,  $P = 0,006$ ; IC: 1,013–1,079) et un IMC normal (OR: 0,159,  $p = 0,004$ ; IC: 0,045–0,559) étaient les prédicteurs indépendants de l'HGV dans cette étude.

**CONCLUSION:** La prévalence de l'hypertension est en hausse, même dans les populations rurales, accompagnée de LVH, d'un QTc plus élevé et de facteurs de risque cardiovasculaires florissants. Il est donc impératif de resserrer les rênes du contrôle de la pression artérielle et des autres facteurs de risque cardiovasculaire avant que la morbidité et la mortalité cardiovasculaires n'exploient dans les communautés rurales. *WAJM 2021; 38(2): 233–240.*

**Mots clés:** Hypertension, hypertrophie ventriculaire gauche, indice de masse corporelle, HDL.

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Abbreviations: BMI, Body Mass Index; LVH, Left Ventricular Hypertrophy