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ORIGINAL ARTICLE

A Comparative Study of the Prevalence of Hypertension and Electrocardiographic Left Ventricular Hypertrophy in Oil-and Gas-Polluted Communities in the Niger Delta Region

Étude Comparative de la Prévalence de l'Hypertension et de l'Hypertrophie Ventriculaire Gauche Électrocardiographique dans les Communautés Polluées par le Pétrole et le Gaz dans la Région du Delta du Niger

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ABSTRACT

BACKGROUND: Hypertension with its associated sequelae is the most important risk factor for cardiovascular disease and the leading cause of mortality worldwide. The multifactorial associations of environmental influence on blood pressure seem to play a key role in the etiopathogenesis of hypertension and should be more intently investigated.

OBJECTIVE: This study evaluated the prevalence of hypertension and electrocardiographic left ventricular hypertrophy of residents in three oil producing (exposed) communities in Rivers State (Mbodo-Aluu, K-Dere and Engeni) and a non-oil producing (control) community in Anambra State (Mgbeke-Uli).

METHODS: A total of 570 subjects were recruited for this study. Sociodemographic, anthropometric, electrocardiographic parameters, and blood pressure were obtained from the subjects in a standardized manner.

RESULTS: Showed that the mean value of the systolic and diastolic blood pressures of subjects in the exposed communities were higher ($p < 0.001$) than those of the controls. Furthermore, the prevalence of hypertension and left ventricular hypertrophy in exposed communities were higher ($p < 0.001$) when compared with the control.

CONCLUSION: In conclusion, the prevalence of hypertension and electrocardiographic left ventricular hypertrophy were higher in the exposed communities than control.

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KEYWORDS: Electrocardiography, Hypertension, Left ventricular hypertrophy, Oil/Gas exploration

RÉSUMÉ

CONTEXTE: L'hypertension et ses complications associées représentent le principal facteur de risque des maladies cardiovasculaires et la première cause de mortalité dans le monde. Les influences environnementales multiples sur la pression artérielle semblent jouer un rôle clé dans l'étiopathogénie de l'hypertension et méritent d'être explorées plus en profondeur.

OBJECTIF: Cette étude a évalué la prévalence de l'hypertension et de l'hypertrophie ventriculaire gauche électrocardiographique chez les résidents de trois communautés productrices de pétrole (exposées) dans l'État de Rivers (Mbodo-Aluu, K-Dere et Engeni), et une communauté non productrice (témoin) dans l'État d'Anambra (Mgbeke-Uli).

MÉTHODES: Un total de 570 sujets ont été recrutés pour cette étude. Les paramètres sociodémographiques, anthropométriques, électrocardiographiques et la pression artérielle ont été recueillis de manière standardisée.

RÉSULTATS: Les moyennes des pressions artérielles systolique et diastolique étaient significativement plus élevées ($p < 0.001$) chez les sujets des communautés exposées que chez ceux du groupe témoin. De plus, la prévalence de l'hypertension et de l'hypertrophie ventriculaire gauche était plus élevée ($p < 0.001$) dans les communautés exposées par rapport à la communauté témoin.

CONCLUSION: En conclusion, la prévalence de l'hypertension et de l'hypertrophie ventriculaire gauche électrocardiographique était plus élevée dans les communautés exposées que dans la communauté témoin. WAJM 2025; 42 (3): 190-201

MOTS CLÉS: Électrocardiographie, Hypertension, Hypertrophie ventriculaire gauche, Exploration pétrolière/gazière

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