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CLINICAL RESEARCH

Prevalence and factors associated with hyperuricaemia in newly diagnosed and untreated hypertensives in a sub-Saharan African setting

Prévalence et facteurs associés à l'hyperuricémie chez les sujets hypertendus nouvellement diagnostiqués et naïfs de tout traitement antihypertenseur en Afrique sub-saharienne

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KEYWORDS

Hypertension;
Hyperuricaemia;
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Cardiovascular risk
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Summary

Background. — Few studies have evaluated the link between hyperuricaemia and cardiovascular disease in sub-Saharan Africa.

Aims. — To assess the prevalence of and factors associated with hyperuricaemia among newly diagnosed treatment-naïve hypertensive patients in sub-Saharan Africa.

Methods. — We performed a community-based cross-sectional study from January to December 2012 in Douala, Cameroon (Central Africa). We enrolled newly diagnosed treatment-naïve hypertensive patients, and excluded those with gout or a history of gout. Serum uric acid concentrations were measured by enzymatic colourimetric methods, and hyperuricaemia was defined

Abbreviations: CI, confidence interval; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; OR, odds ratio; TC, total cholesterol; TG, triglycerides.

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as a serum uric acid concentration > 70 IU/mL. Fasting blood sugar concentrations, serum creatinine concentrations and lipid profiles were also measured. Logistic regression was used to study factors associated with hyperuricaemia.

Results. — We included 839 newly diagnosed treatment-naïve hypertensive patients (427 women and 412 men; mean age 51 ± 11 years; mean serum uric acid concentration 60.5 ± 16.5 IU/L). The prevalence of hyperuricaemia was 31.8% (95% confidence interval [CI] 28.7–34.9) and did not differ by sex (132 women vs. 135 men; $P=0.56$). Multivariable logistic regression identified age > 55 years (adjusted odds ratio [AOR] 1.65, 95% CI 1.12–2.29), family history of hypertension (AOR 1.65, 95% CI 1.01–2.67), waist circumference > 102 cm in men or > 88 cm in women (AOR 1.60, 95% CI 1.12–2.29), low-density lipoprotein cholesterol > 1 g/L (AOR 1.33, 95% CI 0.97–1.82) and triglycerides > 1.5 g/L (AOR 1.63, 95% CI 1.01–2.65) as independently associated with hyperuricaemia.

Conclusion. — Hyperuricaemia is common among newly diagnosed treatment-naïve hypertensive patients in sub-Saharan Africa and is associated with some components of the metabolic syndrome.

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MOTS CLÉS

Hypertension
artérielle ;
Hyperuricémie ;
Acide urique ;
Facteurs de risque
cardiovasculaires ;
Afrique
sub-saharienne

Résumé

Objectif. — Évaluer la prévalence et les facteurs associés à l'hyperuricémie chez les patients hypertendus nouvellement diagnostiqués et naïfs de tout traitement antihypertenseur en Afrique sub-saharienne.

Méthodes. — Nous avons réalisé une étude transversale de janvier à décembre 2012 en milieu communautaire à Douala, Cameroun. Nous avons inclus tout patient hypertendu nouvellement diagnostiqué et naïf de tout traitement antihypertenseur et exclus tous ceux qui avaient une histoire actuelle ou passée de la goutte et les hypertendus sous traitement. L'hyperuricémie était définie par un taux d'acide urique sérique supérieur à 70 UI/mL. La glycémie à jeun, la créatininémie et le profil lipidique ont également été mesurés. La régression logistique était utilisée pour étudier les facteurs associés à l'hyperuricémie.

Résultats. — Nous avons inclus 839 patients (427 femmes et 412 hommes) nouvellement diagnostiqués hypertendus et naïfs de tout traitement antihypertenseur. L'âge moyen était de 51 (SD : 11) ans, et le taux moyen d'acide urique sérique était de 60,5 (SD : 16,5) UI/L. La prévalence de l'hyperuricémie était de 31,8% [IC95% : 28,7%–34,9%], et ne diffère pas selon le sexe (femmes, $n=132$ vs hommes, $n=135$; $p=0,56$). En régression logistique multivariée, l'âge > 55 ans (AOR : 1,65 [1,12–2,29]), le tour de taille > 102 chez les hommes et 88 chez les femmes (AOR : 1,60 [1,12–2,29]), le cholestérol LDL > 1 g/L (AOR : 1,33 [0,97–1,82]), les antécédents familiaux d'hypertension (AOR : 1,65 [1,01–2,67]), et les triglycérides > 1,5 g/L (AOR : 1,63 [1,01–2,65]) étaient indépendamment associés à l'hyperuricémie.

Conclusion. — L'hyperuricémie est fréquente chez les patients hypertendus nouvellement diagnostiqués et naïfs de tout traitement antihypertenseur en Afrique sub-saharienne.

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Background

Hypertension affects about 1 billion people in the world, 10–21% of whom live in sub-Saharan Africa [1]. The prevalence of hypertension in Cameroon was 24% in 2010 [2]. Many traditional risk factors associated with hypertension have been identified. However, while hyperuricaemia is known to be a global marker in cardiovascular disease [3], its role as an independent cardiovascular risk factor is controversial. Hyperuricaemia is generally known to be associated with components of the metabolic syndrome, such as diabetes, dyslipidaemia, obesity and hypertension

[3–9]. For many years, hyperuricaemia has been associated with the risk of developing hypertension [4–6,8–10]. It has been experimentally proven that hyperuricaemia evolving for at least 5 years can cause renal abnormalities, which may lead to hypertension and cardiovascular complications [10]. The prevalence of hyperuricaemia has been estimated at 25% in hypertensive patients naïve to antihypertensive therapy [10]; nevertheless, hyperuricaemia itself is still not considered to be a classic cardiovascular risk factor. Most data have come from developed countries, with few studies having evaluated the link between hyperuricaemia and cardiovascular disease in sub-Saharan Africa [11–13];

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