The Lancet Regional Health - Americas 1 (2021) 100035

Contents lists available at ScienceDirect

The Lancet Regional Health - Americas

journal homepage: www.elsevier.com/locate/lana

Commentary

Belize population-based survey confirms the high prevalence of Chronic Kidney Disease and its risk factors in Central America

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ARTICLE INFO

Article history:
Received 25 July 2021
Accepted 30 July 2021
Available online 12 August 2021

Worldwide, there has been a substantial reduction in premature avertable mortality from non-communicable diseases between 1990 and 2017. For instance, cardiovascular diseases, cancers, and chronic respiratory diseases have been the main drivers of the reduction. In contrast, chronic kidney disease (CKD) is increasing worldwide and rapidly in low- and middle-income countries [1]. Indeed, CKD accounted for 697 million prevalent cases of all-stage CKD, 19.0 million new cases, 1.43 million deaths, and 41.5 million disability-adjusted life years (DALYs) in 2019, ranking it as the 11th cause of total deaths, 16th cause of premature mortality and 18th cause of DALYs for both sexes combined. Diabetes and hypertension equate to more than 50% of DALYs. CKD situation is dire in Central America and Mexico. Indeed, age-standardized DALY rates were 2.6 times higher in this region than globally (1,348.1 vs. 514.9 per 100,000) [2]. This situation imposes a heavy socioeconomic burden and an enormous challenge for the health systems to manage CKD, including the growing need for renal replacement therapies [3]. It is a fundamental threat to human development and to achieve UN SDG commitments (Available at: https://sustainabledevelopment.un.org/sdg3).

In *The Lancet Regional Health-Americas*, Lin, Morey, and colleagues [4] provide results of a large nationwide population-based cross-sectional study conducted in 2017 to address prevalence and risk factors for CKD in Belize, where there is a lack of relevant epidemiological research. CKD was defined as an estimated glomerular filtration rate (eGFR) < 60 mL/min/1.73 m^2 or the presence of proteinuria. Applying a standardized laboratory method and the calculation of eGFR using the 2009 CKD-EPI creatinine equation, which is accurate throughout the eGFR range, is a strength of this study. However, some limitations should be considered to interpret the results. For example, diagnosis of CKD usually requires abnormalities of eGFR or kidney damage for at least three months apart, and therefore a confirmatory test is always needed. Thus, a single measurement of serum creatinine and urine protein might result in some misclassification of the CKD status.

Authors reported an overall CKD prevalence of 13.7% in Belizeans aged 20-55 years (women: 14.8%; men: 12.5%), an alarming figure for this age group. Evenly worrisome, stage 3a CKD accounted for half of total CKD cases, and overall CKD awareness was less than 4% and around 10% among patients with stages 3b-5 CKD. Furthermore, analyses confirmed that CKD prevalence was higher in the Mestizo/Hispanic ethnic group. The association of CKD with traditional risk factors, such as diabetes, hypertension, dyslipidemia, and obesity, was apparent.

Noteworthy, this study found that 19% of CKD cases had no traditional risk factors for CKD and a higher prevalence of CKD among participants living in the northern districts of Orange Walk and Corozal. These findings deserve further attention. The high prevalence of CKD in this very young population and the fact that almost half of the population is engaged in agricultural activities, especially sugarcane cultivation, suggest that in these locations might be happening what has been reported in other countries of the region [5]. Certainly, Belize's neighbors and all Central American countries are affected by chronic interstitial nephritis (CINAC), a form of CKD non-related to traditional risk factors, which has epidemic proportions [6] and is devastating agricultural communities throughout the world [7]. Although this study passes over this severe health problem and does not report to what extent CINAC affects Belizeans, it offers new clues on this issue while providing relevant epidemiological information for Belize and Central America.

CKD, a largely preventable and treatable condition, deserves greater attention on global and regional agendas to halt and reverse a public health crisis that for decades has been impoverishing and causing enormous suffering in Central American countries.

DOI of original article: 10.1016/j.lana.2021.100013
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https://doi.org/10.1016/j.lana.2021.100035

Moreover, beyond the causal uncertainty surrounding the CKD epidemic in agricultural communities [8], urgent public health actions are needed not to delay what we know can now be done in prevention and access and quality of care [9]. In this regard, we echo the statement of Sir George Alleyne, Director Emeritus of the Pan American Health Organization, regarding the situation of CKD: *"I would like to urge you to adopt a more aggressive approach, not only to educate, but to stimulate and animate, motivate and agitate, and change the docility of the NCD community. Provoke outrage at the inequity in how society is dealing with NCD and CKD"* [10].

Contributors

Both authors PO and RM contributed equally.

Funding

None

Declaration of Interest

We declare no competing interests. PO and RM are staff members of the Pan American Health Organization. However, the authors alone are responsible for the views expressed in this publication, and they do not necessarily represent those of the Pan American Health Organization.

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