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A Scoping Review of Fibroblast Growth Factor 23 and Vascular Calcification Progression in Lagos Dialysis Patients: An African Perspective

O, l, u, w, a, s, e, u, n, B, a, l, o, g, u, n, ,, N, g, o, z, i, E, z, e, ,, A, d, e, b, a, y, o, A, d, e, y, e, m, i, ,, C, h, i, n, w, e, O, k, o, n, k, w, o

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Abstract

Vascular calcification is a major contributor to cardiovascular morbidity and mortality in patients with end-stage kidney disease on dialysis. Fibroblast growth factor 23 (FGF23), a phosphaturic hormone markedly elevated in these patients, has been implicated in cardiovascular pathology. Its specific role in driving vascular calcification progression within African dialysis populations remains poorly characterised. This scoping review aimed to map and synthesise existing evidence on the correlation between serum FGF23 levels and the progression of vascular calcification in adult patients receiving dialysis in Lagos, Nigeria. It sought to identify key concepts, evidence gaps, and the scope of available literature on this topic from an African perspective. A systematic scoping review was conducted, guided by the Joanna Briggs Institute framework. A comprehensive search was performed across multiple electronic databases and grey literature sources. Studies of any design focusing on adult dialysis patients in Lagos, measuring serum FGF23 and assessing vascular calcification progression, were considered for inclusion. Data were charted and analysed thematically. The search yielded a limited number of relevant studies. The available evidence, though scant, consistently suggested a positive association between elevated serum FGF23 levels and the presence or progression of vascular calcification in this population. A recurring theme was the potential modifying effect of traditional

cardiovascular risk factors, such as hypertension, on this relationship. No empirical results from interventional studies were identified. Preliminary evidence indicates a plausible link between higher FGF23 levels and vascular calcification in Lagos dialysis patients. However, the evidence base is underdeveloped, consisting primarily of observational data with small sample sizes. This highlights a significant gap in research on this clinical issue within the region. Further robust, longitudinal studies are urgently needed to establish causality and quantify the strength of the association. Research should also investigate the interplay between FGF23 and other local risk factors. This will inform future clinical management strategies and the potential development of targeted therapies for this population. Fibroblast growth factor 23, vascular calcification, dialysis, chronic kidney disease, Nigeria, Africa. This review consolidates the limited available evidence on FGF23 and vascular calcification from a Nigerian dialysis cohort, clearly delineates the current research gaps, and provides a foundation for prioritising future investigative efforts in this field.