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A Research Protocol to Investigate the Prevalence of Acromegaly and Associated Comorbidities in Patients with Dysmorphic Features at a National Neurosurgical Centre in Sudan, 2018

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| Abstract

Acromegaly is a rare endocrine disorder caused by excessive growth hormone, typically from a pituitary adenoma. It leads to characteristic dysmorphic features and is associated with significant systemic comorbidities. In Sudan, data on the prevalence of acromegaly among patients presenting with dysmorphic features to neurosurgical services are lacking. This impedes the development of effective local screening and management strategies. The primary objective is to determine the prevalence of acromegaly in patients presenting with dysmorphic features to the national neurosurgical centre in Khartoum. Secondary objectives are to characterise the associated comorbidities, describe the demographic and clinical profile of identified cases, and evaluate the diagnostic pathways employed. This will be a hospital-based, cross-sectional study. Consecutive adult patients presenting with dysmorphic features suggestive of acromegaly will be recruited. Diagnosis will be confirmed using serum insulin-like growth factor-1 and an oral glucose tolerance test with growth hormone measurement. Comorbidities will be assessed through clinical evaluation, imaging, and standard laboratory tests. Data will be analysed using descriptive statistics and logistic regression. As this is a research protocol, no empirical findings are presented. The study is designed to generate a prevalence proportion and detail the spectrum and frequency of comorbidities, such as hypertension, diabetes mellitus, and

cardiac dysfunction, within the cohort. This study will provide foundational epidemiological data on acromegaly in this specific patient population in Sudan. It is anticipated to clarify the burden of the disease and its complications within a national neurosurgical referral setting. The findings will inform recommendations for systematic screening protocols for acromegaly in patients with suggestive dysmorphic features. They may also guide the development of integrated, multidisciplinary care pathways for identified cases. Acromegaly, prevalence, comorbidities, dysmorphic features, Sudan, neurosurgery. This protocol describes a study designed to address a critical knowledge gap in the epidemiology of acromegaly within the Sudanese context. Its findings are intended to inform local clinical practice and health policy.
