Paediatrics Oral Presentation

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PREVALENCE OF GROWTH HORMONE DEFICIENCY (GHD) USING TWO DIAGNOSTIC CUT-OFFS IN UNIVERSITY MALAYA MEDICAL CENTRE (UMMC)

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INTRODUCTION

Growth hormone deficiency (GHD) in children is diagnosed in stunting and confirmed with two stimulation tests showing low growth hormone (GH) levels. Internationally, a peak GH level <7 ng/mL is used, while Malaysia's 2010 guideline defines GHD as <10 ng/mL. This study aims to determine the prevalence of GHD using both thresholds in children undergoing insulin tolerance test (ITT) or glucagon stimulation test (GST).

METHODOLOGY

This retrospective cross-sectional study was conducted over five years (2020–2024). Data on demographics and GH stimulation results were collected from children with stunting who underwent ITT or GST. The ITT dose was 0.1–0.15 U/kg based on pubertal status, while GST was administered at 0.3 mcg/kg (max 1 mg).

RESULT

In a cohort of 133 children undergone GH stimulation testing, 103 had ITT and 30 GST. The mean age at diagnosis was 10.4 ± 2.1 years (girls: 10.2 ± 2.0, boys: 10.6 ± 2.1). Mean height was 125.6 ± 14.3 cm for girls and 125.97 ± 11.63 cm for boys. The mean ITT dose was 0.11 U/kg. Using a GH cut-off of <7 ng/mL, 48% (n = 64) were diagnosed with GHD; this increased to 67% (n = 89) using a <10 ng/mL threshold. An additional 23.3% (n = 31) had GH levels between 10–20 ng/mL, while only 9.7% (n = 13) had GH response (>20 ng/mL). Most patients were not primed, as they either presented early (<9 years) or had already entered puberty.

CONCLUSION

There is an increase in the number of GHD cases when the cut-off point is made at 10 ng/ml. This finding highlights the diagnostic impact of threshold selection. While the lower cut-off identifies more severe cases, the higher threshold captures an additional 25 children, nearly one in five, who may otherwise be overlooked. This emphasizes that GH secretion exists on a continuum, and a single rigid cut-off may underestimate clinically relevant cases.