

Rewriting the Growth Trajectory: Innovations in Growth Hormone Therapy

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Abstract

Growth hormone (GH) therapy has evolved far beyond its original indication of isolated GH deficiency. Over the last decade, advances in molecular biology, long-acting GH formulations, and individualized dosing algorithms have redefined therapeutic goals from mere height augmentation to holistic metabolic benefits. Novel delivery systems—weekly depot preparations, sustained-release microspheres, and transdermal options—aim to improve adherence and patient quality of life while maintaining physiological insulin-like growth factor-1 (IGF-1) profiles. Real-world data highlight the importance of early diagnosis, precision dosing guided by pharmacogenomics, and comprehensive monitoring to maximize adult height and minimize adverse effects. This presentation reviews recent clinical trials, emerging biomarkers for treatment tailoring, and practical strategies for integrating these innovations into routine endocrine practice, with special focus on transitioning pediatric patients to adult care. These developments collectively “rewrite the growth trajectory,” offering new hope for children with growth disorders and adults with GH deficiency. [*J Assoc Clin Endocrinol Diabetol Bangladesh, 2025;4(Suppl 1): S12*]

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