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Navigating GIP/ GLP-1 Pathophysiology and Compounding Impacts on T2DM Care

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Abstract

Incretin hormones-glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1)-are central to glucose regulation and insulin secretion. Their discovery and characterization revolutionized type 2 diabetes mellitus (T2DM) and obesity management, inspiring novel therapies such as the dual GIP/GLP-1 receptor agonist tirzepatide, which demonstrates superior glycemic, weight, and cardiovascular outcomes.

However, growing use of compounded GLP-1 receptor agonists raises serious safety and regulatory concerns. These formulations, often produced from unapproved bulk substances, may contain impurities, lack bioequivalence, and pose risks of immunogenicity and adverse events, including hospitalizations and deaths. Regulatory authorities and professional bodies such as the ADA and EASD strongly discourage their use.

Approved agents like Trulicity® (dulaglutide)-an FDA-regulated GLP-1 receptor agonist-remain the standard of care, offering proven benefits in glycemic control, weight reduction, cardiovascular protection, renal safety, and hepatic improvement in NAFLD. Understanding incretin biology thus continues to guide safe, evidence-based innovation in T2DM and obesity treatment. *[J Assoc Clin Endocrinol Diabetol Bangladesh, 2025;4(Suppl 1): S28]*

Keywords: Glucose-dependent insulinotropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1), T2DM, Obesity, Dulaglutide

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