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Beyond Glycemic Control: The Role of Tirzepatide in MASLD and OSA Management

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Abstract

Tirzepatide, a dual GIP (glucose-dependent insulinotropic polypeptide) and GLP-1 (glucagon-like peptide-1) receptor agonist, represents a breakthrough in the treatment of metabolic disorders. While primarily developed for type 2 diabetes and weight management, its benefits extend beyond glycemic control to conditions like Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) and Obstructive Sleep Apnea (OSA). Tirzepatide, a dual GIP and GLP-1 receptor agonist, represents a breakthrough in the treatment of metabolic disorders. Similarly, OSA-a condition characterized by recurrent upper airway obstruction during sleep-is worsened by excess visceral fat and inflammation. Clinical studies, including the SURPASS and SURMOUNT trials, indicate that Tirzepatide leads to substantial weight loss and improved apnea-hypopnea index (AHI), suggesting a direct role in mitigating OSA severity. By targeting core mechanisms such as obesity, insulin resistance, and inflammation, Tirzepatide offers a comprehensive therapeutic strategy for patients with coexisting metabolic diseases. Ongoing research aims to determine whether its effects on MASLD and OSA are independent of weight loss. Tirzepatide is emerging as a multi-faceted agent capable of transforming the management of obesity-related complications, offering new hope for patients with MASLD and OSA. *[J Assoc Clin Endocrinol Diabetol Bangladesh, 2025;4(Suppl 1): S29]*

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