

Recent Controversial Issues in Testosterone Replacement Therapy

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Abstract

Testosterone replacement therapy (TRT) remains controversial despite its established role in symptomatic hypogonadism. Cardiovascular (CV) safety is debated: while the TRAVERSE trial found no excess of major CV events, observational data remain conflicting. Glycemic outcomes add further complexity: real-world studies suggest HbA1c reductions in men with type 2 diabetes, but evidence is heterogeneous. In obesity-related metabolic hypogonadism, substantial weight loss from GLP-1/GIP receptor agonists such as Tirzepatide has been shown to restore testosterone levels, prompting discussion on whether metabolic therapy should precede TRT. Safety monitoring also remains critical-prostate health surveillance is essential despite no proven increase in cancer risk, and polycythemia continues to be a leading hematologic complication requiring vigilant hematocrit monitoring.

Testosterone replacement therapy sits at the intersection of endocrinology and metabolism, cardiology and urology. Recent data support careful, individualized use, but controversies persist, and novel metabolic agents may redefine treatment algorithms. [*J Assoc Clin Endocrinol Diabetol Bangladesh*, 2025;4(Suppl 1): S22]

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