

Oyih A.A., Amarasekera M.

MODERN METHODS OF TREATING HYPOGONADISM

Tutor: professor Yushko E.I.

*Department of Urology and Nephrology with Postgraduate and Retraining Certificates Course
Belarusian State Medical University, Minsk*

Male hypogonadism, characterized by clinical symptoms and persistently low testosterone levels, is becoming increasingly prevalent due to the rise of comorbidities such as obesity and type 2 diabetes mellitus. Traditional testosterone replacement therapy (TRT) is effective for alleviating symptoms but has limitations, including suppression of spermatogenesis, risk of polycythemia, and potential cardiovascular risks. This drives the search for and optimization of alternative treatment methods.

Therefore, to systematize and analyze modern methods of treating male hypogonadism, including traditional TRT and alternative approaches, with an assessment of their efficacy, safety, and indications.

Systematic reviews and meta-analyses published in the PubMed and Google Scholar databases over the past 10 years. Special attention was paid to treatment methods alternative to standard TRT and their use in specific clinical situations.

The analysis showed that in addition to traditional TRT (injectable forms, gels), effective alternatives include: 1) gonadotropins (hCG and FSH) to stimulate endogenous testosterone production and spermatogenesis, especially in patients planning fatherhood; 2) SERMs (e.g., clomiphene citrate), which increase endogenous testosterone while preserving fertility, though further study is needed; 3) aromatase inhibitors, which may be considered in obesity but are limited by negative effects on bone mineral density. Oral testosterone undecanoate offers a convenient alternative with a lower risk of polycythemia. Lifestyle modification (weight loss, physical activity) is also important, particularly in functional hypogonadism.

Testis transplantation has been explored historically but is not currently feasible due to several barriers. Biologically, autotransplantation fails to achieve complete spermatogenesis in humans. Ethically and legally, allogeneic transplantation raises complex questions regarding offspring and parenthood. Clinically, it would require lifelong immunosuppression with significant risks of infection and malignancy. Additionally, the legacy of discredited historical treatments has contributed to skepticism, and experimental approaches remain preclinical.

Management of male hypogonadism should be individualised and evidence based, extending beyond conventional testosterone replacement therapy (TRT). While TRT effectively alleviates symptoms, its limitations warrant alternative or adjunctive options, especially for men seeking to preserve fertility. Lifestyle modification remains essential, particularly in obesity related cases, and emerging experimental therapies, though currently impractical, show potential for restoring natural testicular function.