

Male Menopause: Concern Needs Attention

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ABSTRACT

Andropause, also known as Late-Onset Hypogonadism, is a prevalent occurrence that more men experience as they age. Based on the prevalence of symptoms in the community suggestive of low testosterone, Late-Onset Hypogonadism is diagnosed. The typical sexual symptoms associated with aging include erectile dysfunction, loss of libido, morning erections and decreased testosterone levels. In 1944, the phrase "male menopause" was 1st used to refer to a range of complaints about aging in men that, at least in part, correlated with the climacteric symptoms in women. A number of pathophysiological factors have been identified, including age-related increases in serum Sex Hormone-Binding Globulin Levels, aging of the gonads (accompanied by an increase in luteinizing hormone), the role of visceral adipose tissue in the aromatization of androgen to estrogen and decreased sensitivity of testosterone receptors. This review presents the most recent findings on the benefits and drawbacks of testosterone therapy together with opinions on the predictive relevance of Late-Onset Hypogonadism in evaluating male health.

Keywords: Andropause, Late-onset hypogonadism, Sex hormone-binding globulin levels, Testosterone.

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INTRODUCTION

The disease known as "andropause" causes older men's testosterone levels to diminish and is associated with a decline in general well-being or sexual satisfaction. The Greek word "andras" refer to the male human and "pause" means cessation, respectively. Hot flashes, tiredness, anxiety, lowered libido, anger, fatigue and depression are the symptoms of "the male climacteric." Several labels are used to characterize this process, including male menopause, male climacteric, aging male syndrome, ADAM (Androgen Decline in Aging Males) and LOH. In 1944, Hellers and Meyers 1st recognized the deteriorating overall and sexual condition in men and connected it to decreased amounts of testosterone, thereby creating the term "male menopause".¹ According to the Vermeulen group, the only difference in "climacteric symptoms" between the sexes is in their incidence rates. According to Heinemann and Saad² there is no gender difference in rapid and excessive sweating.³ These presumptions supported the term "male menopause," often known as "andropause." Even with time and effort, emotional issues brought on by low testosterone are frequently diagnosed as signs of bipolar disorder or depression and society as a whole still pays little attention to the fact that men's well-being is at risk.⁴

Only men who have lost their ability to testify owing to illnesses, injuries, or advanced prostate cancer who have undergone surgical or medicinal castration are considered to be in true andropause.⁵ A person's level of testosterone declines by 1% every year as they become older. The reduction is most apparent in free testosterone levels because of modifications to the SHBG protein.⁶ Individual differences exist in the rate at which testosterone levels decline and factors such as medicines, obesity and chronic illnesses can all have an impact. By controlling factors related to health and lifestyle, this decrease can be slowed down.⁷

The males from an andrology clinic conducted research in 2007 and discovered that 42% of their patients had depressive disorders. This finding highlights the importance of screening males for mood problems linked to menopause.⁸ Labour-related factors like sleep difficulties, psychological stress and physical effort revealed a substantial link with andropause manifestations, while factors like high job strain, pesticide exposure and repetitive labour increased both the age of menopause and the severity of menopausal symptoms. Since most men and women spend their entire lives at work, it's imperative to identify and stay away from danger factors that could impact the health of reproduction.⁹

LOH is a biochemical and clinical illness that is frequently associated with aging. It is characterized by low serum testosterone levels that are below the normal range for young, healthy adult males. Despite its prevalence, LOH is frequently misdiagnosed and goes untreated. The frequency of symptomatic androgen deficiency in males is 5.6% between the ages of 30 and 79 and it climbs dramatically with age. The stated frequency of



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hypogonadism in men was 3.1-6.0% in those aged 30-69 and 18.4% in those over 70.¹⁰

DIAGNOSIS OF LOH

For LOH to be diagnosed at this time, symptoms and indicators of a testosterone deficit are necessary. Before diagnosing LOH, conditions such as depression, hypothyroidism, persistent drinking and use of drugs including digoxin, spironolactone, corticosteroids, cimetidine, antifungal agents, opioid analgesics and antidepressants ought to be ruled out. In a similar vein, diagnosing LOH while suffering from an acute sickness that momentarily lowers testosterone levels is not advisable.¹¹ The risk factors for LOH include diabetic mellitus, metabolic syndrome, hemochromatosis, inflammatory arthritic disease, chronic obstructive pulmonary disease, renal disease and diseases connected to the Human Immunodeficiency Virus (HIV).¹²

The testosterone levels of normal adult males and hypogonadism can be distinguished using the immunometric techniques used today. Sulfate precipitation and equilibrium dialysis are the golden benchmark methods for determining accessible and free testosterone. Because computed values are chosen because both gold standard approaches are not regularly available.⁵ Elevated levels of LH and FSH reflect primary hypogonadism, whereas low or below-normal levels of both hormones suggest secondary hypogonadism. When low testosterone levels are present, normal

LH and FSH indicate a fundamental pituitary or hypothalamic abnormality. Estimating LH on its own is sufficient unless fertility is a problem.^{13,14}

TREATMENT OF LATE-ONSET HYPOGONADISM

Emphasizing is vital because, according to information from the European Menopause and Andropause Society (EMAS), it is almost certain that a man does not have LOH if he does not experience sexual symptoms.¹⁵ According to recent EMAS research, there is a definite inverse relationship between circulating testosterone and weight gain or decrease. Testosterone therapy has had little effect on body weight, but it has drastically altered the body composition by reducing fat content and boosting lean body mass.^{16,17}

The symptoms of hypogonadism and LOH in young men are comparable, which has led to an increasing prevalence of Testosterone Replacement Therapy as a treatment option. It is important to evaluate symptom improvement after a few months of medication. Treatment should be stopped and alternative explanations of symptoms looked into if patients report no benefits. In the event that the treatment is successful, the patients should be closely watched. Routine tests for hemoglobin, hematocrit and Prostate-Specific Antigen (PSA) ought to be performed every 3-6 month period, along with digital rectal examinations.¹⁸ When treating patients with late-onset prostate

Table 1: Available formulations for TRT.²²

Administration route	Available formulations	Dose	Advantages	Limitations
Injectables	Testosterone aqueous Testosterone enanthate Testosterone cypionate Testosterone propionate Testosterone undecanoate.	25-50 mg every 1-2 weeks. 250 mg every 2-3 weeks. 200 mg every 2-3 weeks. 100 mg every 2 weeks. 1000 mg every 10-14 weeks.	Less painful Cost-effective Cost-effective Cost-effective Longer effects Convenience.	Frequent injections. -Pain at the injection site. -Risk of venous thromboembolism.
Oral	Testosterone undecanoate.	40-80 mg BID/TID with meals.	Ease of oral administration.	Variable absorption
Buccal	Buccal, bio-adhesive, testosterone tablets.	30 mg-controlled release, Bio-adhesive tablets BID.	Mimics diurnal variation Quick reversal.	Gum-related adverse events in 16% of treated men.
Topical	Testosterone gel (Available in "sachets, tubes and pumps). Transdermal testosterone patch.	40-50 mg on shoulders, upper arms, abdomen once daily in the morning. 1 or 2 patches, designed to nominally deliver 5-10 mg T over 24 hr applied every day on non-pressure areas.	Easy application "Mimics circadian rhythm, easy administration.	-Skin irritation at the application site -Cannot use for more than seven days.
Subcutaneous	Surgical implants	2-6 (150-450 mg) pellets implanted SC; every 3-6 months. Dose and regimen vary with formulation.	Dosing frequency Improved compliance.	-Requires surgical incision for insertions -Pellets may extrude spontaneously.

cancer initially, short-acting depot preparations may be more advantageous than long-acting depot preparations because a prompt cessation of testosterone substitution is required in the event of a negative treatment-related incident (e.g., increased hematocrit or cancer of the prostate).

TESTOSTERONE THERAPY

The act of replenishing lost testosterone as a result of an injury, a congenital defect, or a disease that results in low testosterone levels is known as Testosterone Replacement Therapy. Additionally, it can be used to raise testosterone levels that have decreased following an orchiectomy, which is the removal of one or both testicles. Testosterone Replacement Therapy is commonly administered to men who exhibit signs of hypogonadism and low testosterone levels. When a person receives Testosterone Replacement Therapy (TRT), their low testosterone production can be corrected, perhaps giving them back their lost masculinity. It has been demonstrated that using TRT for hypogonadism is typically safe and effective, although more clinical study data is required.

TRT seeks to return serum testosterone levels to the normal eugonadal range in order to treat LOH. Increasing lean body mass and decreasing fat mass are two of the well-established advantages of TRT for body composition.^{19,20} Men with erectile dysfunction, low libido, or a confirmed testosterone deficiency should be considered for testosterone therapy. Reevaluating the causative processes underlying erectile dysfunction is necessary if there is an insufficient response to testosterone treatment.⁵

There shouldn't be any serious side effects or safety issues because Testosterone Replacement Therapy produces and maintains normal serum concentrations of the hormone and its active metabolites. The ultimate objectives are to prolong life, lessen impairment, keep serious illnesses within a small age range and preserve or raise the greatest possible standard of living.²¹ Table 1 lists the commonly available preparations in the market, their properties, advantages and limitations.

CONCLUSION

LOH is a common problem that is extremely important to both individual and public health because of its correlation with numerous age-related disorders that cause significant morbidity and mortality among older men. Testosterone therapy makes sense and shows promise because low androgen levels are linked to the risks of osteoporosis, aging, metabolic issues and sexual dysfunction. However varying results from clinical trials point to an insufficient understanding of the intricate relationship between androgen insufficiency and aging. As a result, the existence of symptoms and consistently low serum testosterone levels are used to diagnose late-onset testosterone deficiency. Before

starting treatment, the dangers and advantages of testosterone therapy must be fully disclosed to the patient. Additionally, the patient's prostate and other risk factors need to be assessed. Treatment with testosterone should be discontinued if a patient's symptoms and indicators do not improve after an assessment of their response to the drug. Crucially, for senior men, the patient will also have secondary causes of the clinical manifestations examined. Therefore, beginning testosterone therapy does not depend on one's age.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

LOH: Late-Onset Hypogonadism; **SHBG:** Sex Hormone-Binding Globulin; **TRT:** Testosterone Replacement Therapy.

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