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Overview of Male hypogonadism - its prevalence, diagnosis and treatment

Male hypogonadism is defined as insufficient production or release of testosterone. It is classified as primary due to testicular failure or secondary due to dysfunction of hypothalamic-pituitary axis. The common symptoms include loss of libido, erectile dysfunction (ED), tiredness, depression, decrease in cognitive abilities, irritability, loss of energy, loss of bone and muscle mass with high risk of osteoporosis, testicular dysfunction associated with impaired sperm production and male infertility. Hypogonadism mainly affects older men. More than 60% of men over age 65 have free testosterone levels below the normal values in men of 30 to 40 years. Testosterone is needed to maintain testosterone-dependent functions/systems. Since both ED and lower libido reflect hypogonadism, such patients should undergo evaluation of total testosterone in a morning serum sample (due to diurnal pattern with highest level observed in early morning). Morning testosterone values <300 ng/dL (10.4 nmol/L) suggest hypogonadism and should be confirmed by a second evaluation. If a repeat assay confirms low testosterone, luteinizing hormone (LH) should be measured to determine whether the cause is primary or secondary. LH levels <2 ng/mL suggest a hypothalamic lesion (pituitary adenoma, trauma, etc), whereas LH levels >10 ng/mL indicate primary testicular failure. Serum prolactin should also be measured to rule out the presence of a pituitary tumor. In addition to laboratory tests and a careful physical examination, a brief screening instrument (e.g., ADAM Questionnaire) has also been developed to aid in the diagnosis of hypogonadism. Once testosterone deficiency is confirmed, testosterone replacement therapy is considered. Several treatment options exist including oral testosterone derivatives; intramuscular injections of long-acting testosterone esters; transdermal patches applied to the scrotum or other areas of the body (e.g., upper arms, legs, abdomen, or back); and a recently approved testosterone gels. Each method possesses a unique profile. Treatments to normalize testosterone usually improve libido, energy level and the potential to have normal erections. In addition, such treatment can also improve the response to oral PDE5 inhibitors (e.g., Sildenafil, Levitra, Avanafil, Cialis), if any of these is deemed appropriate. In spite of these, sale of "over the counter testosterone boosters" is currently increasing and has become a billion dollar industry.

Biography

Suresh C. Sikka PhD, HCLD/CC (ABB) is a Professor & Research Director of Urology; Andrology Research & Clinical Labs Director, Adjunct Professor of Pharmacology, Biochemistry and Human Genetics at Tulane University in New Orleans. He has over 35 years of experience in male reproductive toxicology, infertility, and sexual dysfunction. Dr. Sikka is a Certified Clinical Consultant and Clinical Laboratory Specialist. He directs a CLIA/HCFCA-certified Andrology laboratory at Tulane. He started a standardized semen analysis training program at Tulane and has trained and certified more than 160 techs to carry out Food and Drug Administration (FDA) recommended multi-center clinical trials for male reproductive toxicology studies. Over the span of his career, he has authored nearly 200 peer-reviewed publications, more than 450 abstracts, many book chapters and edited a book on reproductive toxicology. He regularly makes presentations at various national and international scientific and professional meetings. He has taught and trained numerous research fellows, urology residents, medical students, and PhD graduates, the reviewer of several medical publications, grants, and serves on editorial boards.

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