

# Diabetes mellitus and male aging: Pharmacotherapeutics and clinical implications

Putta S.

Peluso I.

Yarla N.S.

Kilari E.K.

Bishayee A.

Lu D.-Y.

Barreto G.E.

Ashraf G.M.

Scotti L.

Scotti M.T.

Singla R.K.

Alexiou T.

Atanasov A.G.

Tarasov V.V.

Bramhachari P.V.

Imandi S.B.

Chintala M.

Sharma B.

Reale M.

Filosa R.

Aliev G.

Kamal M.A.

Andropause or male menopause is defined as androgen decline and onset of hypogonadism in the aging male. Testosterone deficiency in adult male is associated with diabetes mellitus, coronary

artery disease, and heart failure. Type 2 diabetic male patients aged above 30 years showed low testosterone levels which is common in diabetic men and had symptoms of hypogonadism. Male sexual dysfunction among diabetic patients can include disorders of libido, ejaculatory problems, and erectile dysfunctions are common among people with diabetes, particularly in older men who had diabetes for years. Older diabetics tend to have both impaired insulin release as well as insulin resistance. There is growing evidence indicating the pathophysiological connections among the mechanisms of oxidative damage by disruption of the oxidative balance, increased levels of enzymatic glycation products in testicular region and glucose transporters, obesity and proinflammatory cytokines in male infertile patients with diabetes. Epidemiological studies suggest that many clinical findings in diabetics are linked to low testosterone levels. This article reviews pathophysiological mechanisms, observational studies, and clinical implications of testosterone therapy in type 2 diabetes mellitus. © 2017 Bentham Science Publishers.

Andropause

Diabetes mellitus

Hypogonadism

Insulin

Proinflammatory cytokines

Testosterone

advanced glycation end product

cytokine

sildenafil

tadalafil

testosterone

testosterone undecanoate

aging

androgen deficiency

androgen therapy

andropause

disease association

ejaculation disorder

erectile dysfunction

human

hypogonadism

inflammation

insulin resistance

libido disorder

male infertility

male sexual dysfunction

non insulin dependent diabetes mellitus

obesity

oxidative stress

pathophysiology

priority journal

Review

testosterone blood level