HealthManagement
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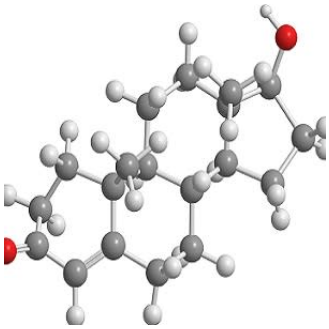
# Endogenous testosterone and thromboembolism, heart failure, myocardial infarction



Testosterone replacement therapy (TRT) prescriptions have shown a decline in the U.S. but still remain well above levels needed to treat pathological hypogonadism. Over the years, the use of anabolic steroids has expanded from athletes to the general population.

With respect to current clinical data, it is unclear whether testosterone has a negative impact on general health, although it is believed that it might be affected by some cardioprotective treatments. The Endocrine Society clinical practice guidelines do not recommend the use of TRT in men with stroke, myocardial infarction, or thrombophilia.

In order to gain clarity regarding the impact of TRT on cardiovascular health, a two-sample mendelian randomisation study was conducted. The goal was to determine whether endogenous testosterone had a causal role in thromboembolism, heart failure, and myocardial infarction.

The analysis was based on two studies - Reduction by Dutasteride of Prostate Cancer Events (REDUCE) randomised controlled trial, UK Biobank, and CARDIoGRAMplusC4D 1000 Genomes based genome-wide association study. The REDUCE study included 3225 men of European descent and within the age group of 50 to 75 years while the CARDIpGRAMplus C4D 1000 Genomes based study had 171,875 participants.

Findings showed that genetically predicted serum testosterone was associated with thromboembolism in the UK Biobank. Genetically associated serum testosterone was also associated with heart failure in men but not with myocardial infarction in the UK Biobank. However, it was nominally positively associated with myocardial infarction in the CARDIoGRAMplusC4D 1000 Genomes study. Overall, these findings confirm an association between endogenous testosterone and a higher risk of ischaemic heart disease and ischaemic stroke in men.

Study findings suggest that lifelong endogenous testosterone could have a role in thromboembolism, heart failure, and possibly myocardial infarction. The findings also reaffirm the cardiovascular warnings about TRT that have already been issued by regulators.

Source: BMJ
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