

Hypogonadal men with cardiovascular diseases (CVD) benefit from long-term treatment with testosterone undecanoate (TU): observational data from a registry study

F Saad, A Haider, G Doros, A Traish

Background: Hypogonadism is associated with cardiometabolic risk. Studies suggest that hypogonadism increases the risk of all-cause and cardiovascular mortality. While some short-term studies have been performed in men with CVD, there are no data on long-term effects of testosterone replacement therapy (TRT) in men with CVD.

Methods: In a prospective, cumulative, observational registry study from a single urologist's office, 300 men with testosterone ≤ 12.1 nmol/L received TU injections for up to 6 years. In this subgroup analysis, 68 men with a previous diagnosis of coronary artery disease (CAD; n=40) and/or a history of myocardial infarction (MI; n=40) were analyzed.

Results: Mean age was 60.76 ± 4.94 years. 68 men were included for 2 years, 59 for 3 years, 54 for 4 years, 44 for 5 years, and 28 for 6 years. Declining numbers reflect the nature of the registry but not drop-out rates.

Weight (kg) decreased from 115.07 ± 13.71 to 92.5 ± 9.64 . Waist circumference (cm) decreased from 112.07 ± 7.97 to 99.89 ± 6.86 . BMI decreased from 37.27 ± 4.45 to 30.14 ± 3.21 ($p < 0.0001$ for all). Mean weight loss was $17.05 \pm 0.57\%$.

Fasting glucose decreased from 108.74 ± 17.08 to 96.0 ± 1.92 mg/dl, HbA_{1c} from 7.81 ± 1.17 to $6.2 \pm 0.62\%$ ($p < 0.0001$ for both).

Total cholesterol decreased from 304.66 ± 34.09 to 189.32 ± 9.68 , LDL from 184.28 ± 37.51 to 134 ± 27.91 , triglycerides from 308.38 ± 56.3 to 187.71 ± 8.67 mg/dl ($p < 0.0001$ for all). HDL increased slightly. The total cholesterol:HDL ratio declined from 5.16 ± 1.55 to 3.15 ± 0.87 ($p < 0.0001$).

Systolic BP decreased from 167.82 ± 11.01 to 142.36 ± 10.62 , diastolic BP from 102.28 ± 8.23 to 81.25 ± 8.07 mmHg ($p < 0.0001$ for both). Pulse pressure declined from 65.54 ± 5.24 to 61.11 ± 4.66 ($p < 0.0001$).

The minimum number of injections was 9, maximum 26. In no patient TRT was discontinued or interrupted. There were no major cardiovascular events during the observation time.

Conclusion: TRT in hypogonadal men with CVD was well tolerated and resulted in significant and sustained improvements of cardiometabolic risk factors. Adherence to TRT was excellent.

