

Reductions of weight and waist size in 362 hypogonadal men with obesity grades I to III under long-term treatment with testosterone undecanoate (TU): observational data from two registry studies

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Introduction: Inverse associations between testosterone and obesity are well established. Obesity has a greater impact on the decline of testosterone with advancing age than age itself.

Methods: From two prospective, cumulative registry studies of 561 hypogonadal men, 362 men with obesity grade I (BMI 30-34.9), grade II (BMI 35-39.9) and grade III (BMI ≥ 40 kg/m²) were selected. All men received TU injections for up to 6 years. Measures were taken at each three-monthly visit.

Results:

Grade I (n=185, mean age: 58.4 \pm 8.0 years): Weight (kg) decreased from 101.88 \pm 6.2 to 89.34 \pm 6.7. Changes were statistically significant for all six years vs. previous year. Change from baseline was -12.55 \pm 0.44 kg, percent change from baseline -12.28 \pm 0.44%. Waist circumference (WC; cm) decreased from 107.07 \pm 7.57 to 97.09 \pm 6.95. Changes were statistically significant for five years vs. previous year and approached significance at the end of six vs. five years. Mean change from baseline was -9.24 \pm 0.3 cm. BMI (kg/m²) decreased from 32.51 \pm 1.39 to 28.63 \pm 1.92, mean change from baseline -3.99 \pm 0.14 kg/m².

Grade II (n=131, mean age: 60.6 \pm 5.6 years): Weight (kg) decreased from 117.02 \pm 6.99 to 96.78 \pm 7.47. Changes were statistically significant for all six years vs. previous year. Change from baseline was -20.67 \pm 0.51 kg, percent change from baseline -17.66 \pm 0.43%. WC (cm) decreased from 114.23 \pm 7.51 to 102.52 \pm 6.5. Changes were statistically significant for all six years vs. previous year. Mean change from baseline was -12.29 \pm 0.33 cm. BMI (kg/m²) decreased from 37.39 \pm 1.46 to 31.05 \pm 2.02, mean change from baseline -6.58 \pm 0.16 kg/m².

Grade III (n=46, mean age: 60.3 \pm 5.4 years): Weight (kg) decreased from 129.02 \pm 5.67 to 103.33 \pm 4.17. Changes were statistically significant for all six years vs. previous year. Change from baseline -27.15 \pm 0.74 kg, percent change from baseline -20.83 \pm 0.54%. WC (cm) decreased from 118.41 \pm 5.69 to 106.48 \pm 4.91. Changes were statistically significant for all six years vs. previous year. Mean change from baseline was -12.44 \pm 0.36 cm. BMI (kg/m²) decreased from 41.93 \pm 1.5 to 33.62 \pm 1.58, mean change from baseline -8.79 \pm 0.23 kg/m².

Conclusions: All changes were more pronounced with increasing obesity grade. All changes were in a clinically meaningful magnitude and sustainable for the full observation period. TRT seems to be an effective approach to achieve sustained weight loss in obese hypogonadal men, thereby potentially reducing cardiometabolic risk.