Anthropometric and Metabolic Parameters in 46 Hypogonadal Men with Obesity Grade III Improve upon Long-Term Treatment with Testosterone Undecanoate (TU) Injections: Observational Data from Two Registry Studies

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Introduction
Numerous studies have reported inverse associations between testosterone and obesity as well as other components of the metabolic syndrome.

Methods
From two registry studies of 561 hypogonadal men, 46 men with obesity grade III (BMI ≥ 40 kg/m²) were selected. All patients received TU injections for up to 6 years. 46 men were followed for two years, 43 for three years, 37 for four years, 31 for five years, and 24 for six years. Declining numbers are a result of the registry design.

Results

- Weight: Mean change from baseline -27.15 kg, mean change from baseline -20.99 ± 8.68 kg, percent change from baseline -3.16 ± 0.74 kg, percent change from baseline -20.99 ± 3.16%. Waist circumference (cm) decreased from 118.41 ± 10.69 to 106.48 ± 4.91, mean change from baseline -2.57 ± 2.75 cm. BMI (kg/m²) decreased from 41.93 ± 1.5 to 33.62 ± 1.58, mean change from baseline -8.79 ± 0.43 kg/m².
- Mean fasting glucose (mg/dl) decreased from 115.48 ± 23.85 to 96.34 ± 2.9 (p <0.0001), mean change from baseline -18.48 ± 2.96 mg/dl, HbA₁c (%) from 7.57 ± 1.38 to 6.08 ± 0.36, mean change from baseline -1.61 ± 0.07%.
- Total cholesterol (TC, mg/dl) decreased from 306.76 ± 43.03 to 292.23 ± 9.17 (p <0.0001), LDL (mg/dl) from 190.57 ± 36.6 to 166.24 ± 28.07 (p <0.0001), triglycerides (mg/dl) from 326.87 ± 60.21 to 294.4 ± 12.59 (p <0.0001). HDL (mg/dl) increased from 62.76 ± 18.7 to 72.55 ± 13.34 (p <0.0001). The TC/HDL ratio declined from 5.47 ± 2.57 to 2.75 ± 0.59 (p <0.0001).
- Systolic blood pressure (mmHg) decreased from 161.04 ± 14.3 to 142.65 ± 9.57, diastolic blood pressure from 97.07 ± 10.91 to 80.89 ± 6.76.
- Liver enzymes AST and ALT (U/L) decreased from 42.39 ± 17.84 to 20.33 ± 1.9 and from 43.52 ± 20.68 to 20.43 ± 2.75, respectively (p <0.0001 for both), suggesting a reduction in liver fat content.

Conclusions
All changes were in a clinically meaningful magnitude and sustainable for the full observation period. TRI seems to be an effective approach to achieve sustained weight loss in excessively obese hypogonadal men.