

Obese hypogonadal men treated with testosterone undecanoate injections up to five years substantially and progressively lose weight

F Saad, A Haider, G Doros, A Traish

Word count 299: Maximum 300 words

Introduction: Abdominal adipose tissue suppresses testosterone production by various mechanisms affecting the hypothalamic-pituitary-gonadal axis. Hypogonadism leads to further accumulation of fat mass thus creating a vicious circle. This study analysed the effects of restoring testosterone in obese hypogonadal men.

Methods: Cumulative, prospective, registry study of 181 men (mean age: 59.11 ± 6.06 years) with testosterone levels below 12.1 nmol/L and a body mass index (BMI) of ≥ 30 kg/m². All men received parenteral testosterone undecanoate 1000 mg/12 weeks following an initial 6-week interval. 89 men were treated five years, 114 four years, 133 three years, 159 two years, 181 one year. The changing numbers do not reflect drop-out rates but are a result of the design as new patients are added once they have received at least one year of treatment.

Results: At the end of the observation period, mean weight (kg) decreased from 114.71 ± 11.59 (minimum 87.0, maximum 139.00) to 93.24 ± 8.49 (min 80.0; max 115.0). This decrease was statistically significant vs baseline ($p < 0.0001$) and each year compared to previous year ($p < 0.0001$). Mean change from baseline was $-16.41 \pm 0.3\%$. After five years, all men had lost any weight, 99% had lost ≥ 5 kg, 90% ≥ 10 kg, 70% ≥ 15 kg, and 40% ≥ 20 kg.

Waist circumference (cm) as a measure of abdominal fat decreased from 111.2 ± 7.54 (min 89.00; max 129.00) to 100.47 ± 7.11 (min 84.00; max 117.00), BMI from 36.72 ± 3.72 (min 30.10; max 46.51) to 30.22 ± 2.6 (min 25.66; max 36.71).

Fasting glucose decreased from 5.84 ± 0.84 to 5.41 ± 0.12 mmol/L, total cholesterol from 7.63 ± 0.95 to 4.9 ± 0.28 , LDL from 4.47 ± 1.03 to 2.94 ± 0.93 , triglycerides from 3.31 ± 0.56 to 2.17 ± 0.13 mmol/L. Systolic blood pressure decreased from 159.17 ± 15.9 to 139.08 ± 10.99 mmHg, diastolic blood pressure from 96.5 ± 11.01 to 80.39 ± 7.51 mmHg ($p < 0.0001$ for all).

Conclusions: Normalising testosterone produced loss of weight / waist circumference and improved metabolic profile. These improvements were progressive over five years.