

207 obese hypogonadal men treated with testosterone undecanoate up to 72 months progressively lose weight: an observational registry study

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Background: Obesity may induce male hypogonadism at all ages by various mechanisms affecting the hypothalamic-pituitary-gonadal axis. Low testosterone promotes further accumulation of fat mass thus creating a vicious circle. We analysed the effects of normalising testosterone in obese hypogonadal men.

Methods: In this cumulative, prospective, observational registry study, 207 obese men with testosterone levels ≤ 12.1 nmol/L and a body mass index (BMI) of ≥ 30 kg/m² received parenteral testosterone undecanoate 1000 mg/12 weeks following an initial 6-week interval for up to six years.

Results: 81 men (39%) had previously diagnosed type 2 diabetes.

Mean weight (kg) decreased from 113.33 ± 11.63 to 91.59 ± 8.14 . This decrease was statistically significant vs baseline ($p < 0.0001$) and each year compared to previous year. The mean change from baseline was -20.68 ± 0.4 kg.

Mean waist circumference (cm) as a measure of abdominal fat decreased from 110.57 ± 7.3 to 99.35 ± 7.11 . This decline was statistically significant vs baseline ($p < 0.0001$) and each year compared to the previous year except the last year where statistical significance was approached ($p = 0.0564$). The mean change from baseline was -10.48 ± 0.28 cm.

BMI (kg/m²) decreased from 36.3 ± 3.69 to 29.69 ± 2.6 . This change was statistically significant vs baseline ($p < 0.0001$) and each year compared to previous year.

The mean per cent weight loss (%) was 18.15 ± 0.33 after 6 years.

Fasting glucose improved from 105.07 ± 14.37 to 96.01 ± 2.4 mg/dl ($p < 0.0001$), HbA1c from 7.27 ± 1.44 to $6.13 \pm 0.6\%$ ($p < 0.0001$). While changes in glucose reached a plateau after two years, HbA1c continued to decline significantly compared to the previous year for five years before stabilizing.

Conclusions: Raising serum testosterone to normal resulted in loss of weight and waist circumference. Improvement in weight was progressive over the full 6 years, improvement in waist circumference was progressive over 5 years and still approached significance at 6 compared to 5 years. Fasting glucose and HbA1c improved in a sustained manner.