

Obese Hypogonadal Men Treated with Testosterone Undecanoate Injections up to Five Years Substantially and Progressively Lose Weight

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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 ± 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.

