

Weight loss and improvements of metabolic syndrome in 300 hypogonadal men treated with testosterone undecanoate injections up to 72 months: an observational registry study

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

Methods: Cumulative, prospective, observational registry study of 300 men with T levels ≤ 12.1 nmol/L received parenteral T undecanoate 1000 mg/12 weeks following an initial 6-week interval for up to 72 months. Anthropometric measures and blood samples were taken at every three-monthly visit.

Results: Weight decreased from 104.71 to 88.41 kg ($p < 0.0001$). Mean change from baseline was -16.8 kg, mean per cent weight loss 15.18%. Waist circumference decreased from 106.46 to 97.31 cm ($p < 0.0001$). Mean change from baseline was -8.94 cm. BMI decreased from 33.42 to 28.68 kg/m² ($p < 0.0001$).

Fasting glucose declined from 102.93 to 95.98 mg/dl, total cholesterol (TC) from 279.72 to 189.61 mg/dl, LDL from 163.22 to 126.02 mg/dl, triglycerides from 272.94 to 188 mg/dl. HDL increased from 56.47 to 61.06 mg/dl. The TC:HDL ratio dropped from 5.37 to 3.39 ($p < 0.0001$ for all). Systolic blood pressure decreased from 153.06 to 137.07, diastolic from 92.58 to 78.59 mmHg ($p < 0.0001$ for both).

Conclusions: Normalising T resulted in progressive, sustained reductions of weight and waist circumference. Improvement of all elements of the metabolic syndrome was observed. T treatment may reduce cardiometabolic risk in hypogonadal men.