

Metabolic syndrome improves upon normalization of serum testosterone in hypogonadal men. Follow-up up to 5 years

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Objectives: Hypogonadal men tend to increase body weight, fat mass and develop features of the metabolic syndrome. Long-term effects of testosterone replacement with testosterone undecanoate in hypogonadal men on metabolic syndrome were studied.

Methods: A cumulative registry study of 255 men (mean age: 60.6 years), with testosterone levels below 12 nmol/L with late onset hypogonadism (LOH).

Results: A remarkable progressive and sustained decline of body weight and waist circumference over 5 years was observed. Fasting glucose decreased from 103.38 to 97.54 mg/dl ($p < 0.0001$). The proportion of patients who had glucose levels ≥ 100 mg/dl decreased from 45% at baseline to 16% at 60 months. HbA_{1c} was measured in 125 patients and decreased from 6.94 to 6.01%. Total cholesterol decreased from 281.58 to 188.12 mg/dl ($p < 0.0001$), LDL from 163.79 to 109.84 mg/dl ($p < 0.0001$), triglycerides from 276.16 to 189.78 mg/dl ($p < 0.0001$). HDL was stable over the first 2 years (62 mg/dL at baseline and 63.26 at 24 months) and then declined to 52.45 at 60 months ($p < 0.0001$ vs baseline). Mean systolic blood pressure declined from 153.55 to 137.74 mmHg ($p < 0.0001$), diastolic blood pressure from 93.49 to 79.61 mmHg at 60 months ($p < 0.0001$). At baseline, 91% of men had a systolic blood pressure of ≥ 130 mm Hg which declined to 80% after 60 months. At baseline, 75% of men had a diastolic blood pressure of ≥ 85 mm Hg declining to 22% at 5 years.

Conclusions: Normalization of serum testosterone leads to sustained improvement of all components of the metabolic syndrome.