

Upon normalization of serum testosterone improvements of features of the metabolic syndrome are continuous over 48 months. A study in three cohorts, in total 410 men.

Category 5: Male Sexual Health [Aging male, Hormones, Lifestyle Factors]

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Objectives: Hypogonadal men often have the metabolic syndrome. We studied the effects of normalization of testosterone over 48 months in three cohorts of men, following the same treatment protocol.

Design and Methods: Cohort MZ: 281 men (134 primary, 88 secondary hypogonadism) and 59 with late onset hypogonadism (LOH) (aged 40±13 years). 137 had received testosterone for 4 years. Cohort AH: 230 men, aged 62±8 yrs, 209 had LOH. 143 had received testosterone for 4 years. Cohort AY: 130 men, aged 61±9 yrs), 127 had LOH. Cut-off point was serum testosterone <12 nmol/L. Treatment with parenteral testosterone undecanoate for 48 months was the sole intervention.

Results: Plasma levels of testosterone rose from a range of 5.6-9.7 to a range of 15.4- 19.0 nmol/L. A remarkable progressive

and sustained decline of body weight and waist circumference occurred over the full study period, most outspoken over the first 24 months. Plasma cholesterol, triglyceride, and LDL-cholesterol decreased significantly over the study period. Plasma glucose declined over the first 12-18 months and then stabilized. In cohort MZ at baseline 240/281 men fulfilled the harmonized criteria of the metabolic syndrome, falling to 114/281 after two years. At baseline 88/143 men in cohort AH and 93/130 men in cohort AY met the criteria of the metabolic syndrome by the harmonized definition. After 48 months of testosterone treatment this number had declined to 48/143 in cohort AH and to 62/130 in cohort AY.

Conclusion: In men with hypogonadism testosterone treatment over 48 months led to an improvement of metabolic syndrome components with sustained declines of body weight and waist circumference and improvements of cholesterol, LDL and triglycerides. Improvements in younger men with 'classical' primary or secondary hypogonadism (cohort MZ) were of a similar magnitude as in men with LOH (cohorts AH and AY).