

Metabolic syndrome parameters in hypogonadal men on long-term treatment with testosterone undecanoate (TU) injections improve independently from age: observational data from two registry studies

A Yassin, A Haider, G Doros, A Traish, F Saad

Maximum 2500 characters

Introduction: Improvements of metabolic parameters on long-term testosterone replacement therapy (TRT) from our registry studies have been reported in 2013 (Traish, Int J Clin Pract).

Methods: 561 hypogonadal men from both registry studies were divided into age groups ≤ 65 (Group A, n=450) and >65 years (Group B, n=111). All men were treated with three-monthly TU injections for up to 6 years.

Results: Total cholesterol (TC, mg/dl) decreased from 268.92 ± 45.95 to 193.56 ± 16.58 in Group A and from 268.44 ± 52.69 to 191.69 ± 21.8 in Group B, LDL (mg/dl) from 159.87 ± 36.7 to 119.81 ± 34.87 in Group A and from 162.48 ± 31.63 to 120.86 ± 33.56 in Group B, triglycerides (mg/dl) from 262.35 ± 73.16 to 192.1 ± 34.4 in Group A and from 266.9 ± 84.37 to 192.27 ± 32.16 in Group B. HDL (mg/dl) increased from 48.91 ± 17.33 to 59.55 ± 17.66 in Group A and from 51.64 ± 16.56 to 61.99 ± 16.87 in Group B.

TC:HDL ratio improved from 6.15 ± 2.42 to 3.54 ± 1.04 in Group A and from 5.67 ± 2.09 to 3.32 ± 0.91 in Group B ($p < 0.0001$ for all).

Fasting glucose (mg/dl) decreased from 104.18 ± 22.17 to 96.44 ± 8.44 in Group A and from 119.07 ± 40.01 to 101.74 ± 19.37 in Group B. HbA1c (%) decreased from 6.64 ± 1.32 to 5.66 ± 0.65 in Group A and from 7.0 ± 1.38 to 5.94 ± 0.82 in Group B with mean changes from baseline of -1.15 ± 0.04 and $-1.37 \pm 0.09\%$, resp. ($p < 0.0001$ for all).

Systolic blood pressure (mmHg) decreased from 145.51 ± 17.73 to 132.39 ± 10.41 in Group A and from 147.01 ± 15.78 to 132.13 ± 10.53 in Group B. Diastolic blood pressure decreased from 87.33 ± 11.69 to 78.47 ± 5.36 in Group A and from 89.36 ± 10.54 to 78.7 ± 6.22 in Group B ($p < 0.0001$ for all).

Liver enzymes: AST (U/L) decreased from 35.8 ± 16.04 to 22.83 ± 6.43 in Group A and from 31.33 ± 14.71 to 22.39 ± 6.47 in Group B. ALT (U/L) decreased from 38.17 ± 18.92 to 24.64 ± 10.66 in Group A and from 37.5 ± 22.77 to 24.73 ± 9.52 in Group B ($p < 0.0001$ for both).

C-reactive protein (CRP, mg/L) declined from 4.04 ± 6.34 to 0.75 ± 1.06 in Group A and from 2.65 ± 3.75 to 0.71 ± 0.51 in Group B ($p < 0.0001$ for all).

Conclusions: TRT in hypogonadal men resulted in sustained improvements of all metabolic syndrome parameters independent of age. Reductions in liver enzymes suggest reductions in liver fat content, as observed by Hoyos et al. (Eur J Endocrinol 2012; 167: 531-541). Reductions in CRP confirm the anti-inflammatory properties of testosterone.