

Improvement of lower urinary tract symptoms, as measured by the International Prostate Symptom Score, in elderly obese hypogonadal men upon long-term treatment with testosterone

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Introduction: A recent meta-analysis indicated that lower urinary tract symptoms (LUTS) are associated with body mass index (BMI)(1). Another study suggested that waist circumference (WC) is the best prognosticator of LUTS (2). The etiological association of LUTS with obesity might well be the inflammatory process associated with visceral obesity (3). This study assessed the effects of treating hypogonadal elderly men with testosterone on BMI, WC, International Prostate Symptom Score (IPSS) and C-reactive protein (CRP) levels.

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. They received parenteral testosterone undecanoate 1000 mg/12 weeks following an initial 6-week interval for up to five years. After one year, 181 men were included in the registry, after two years, 159 men, after three years, 133 men, after four years, 114 men, after five years, 89 men. The declining numbers do not reflect drop-out rates but are a result of the registry design. New patients are consecutively entered once they have completed one year of treatment.

Results: At the end of the observation period, mean weight (kg) had decreased from 114.71 ± 11.59 to 93.24 ± 8.49 ($p < 0.0001$) progressively each year compared to the previous year ($p < 0.0001$).

Waist circumference (cm) as a measure of abdominal fat had decreased from 111.2 ± 7.54 to 100.47 ± 7.11 , BMI from 36.72 ± 3.72 to 30.22 ± 2.6 . These changes were also statistically significant vs baseline ($p < 0.0001$) and each year compared to the previous year ($p < 0.0001$).

After 24 -30 months of treatment, the IPSS started to improve correlated with changes in weight and WC. This was maintained over the five year study period. CRP levels declined in correlation with the declines of WC and weight but the decline of the IPSS did not correlate with the decline of CRP.

Conclusions: Normalizing testosterone in obese hypogonadal men produced weight loss and improved the IPSS, in correlation with declines in weight and WC which, again, were correlated with the decline in CRP. The decline in IPSS was

not directly correlated with the decline in CRP. These improvements were progressive over the full 5 years of the study.

1. Wang, S., et al., *Body mass index and risk of BPH: a meta-analysis*. Prostate Cancer Prostatic Dis, 2012. **15**(3): p. 265-72.
2. Lee, R.K., et al., *Central obesity as measured by waist circumference is predictive of severity of lower urinary tract symptoms*. BJU Int, 2012. **110**(4): p. 540-5.
3. Kupelian, V., et al., *Association of overactive bladder and C-reactive protein levels. Results from the Boston Area Community Health (BACH) Survey*. BJU Int, 2012. **110**(3): p. 401-7.