

Long-term Testosterone Treatment with Injectable Testosterone Undecanoate in Hypogonadal Men with Inflammatory Bowel Diseases (M. Crohn and Colitis ulcerosa)

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Objective: Testosterone (T) has anti-inflammatory effects. T treatment has been found to be beneficial in rheumatoid arthritis and chronic obstructive pulmonary disease. We had reported effects of two years of T treatment in a small group of hypogonadal men with Crohn's disease (Haider A et al., *Horm Mol Biol Clin Invest* 2010; 2(3): 287–292).

Methods and Design: 48 men with Crohn's disease and 2 men with Colitis ulcerosa with T \leq 12 nmol/L from 2 centers in Bremerhaven, Germany and Aleppo, Syria received treatment with parenteral testosterone undecanoate on day 1, after 6 weeks and thereafter every 12 weeks for up to 60 months. 12 hypogonadal men of similar age with Crohn's disease who did not receive T served as a control group. The Crohn's Disease Activity Index (CADI) was assessed as an indicator of the severity of the disease every 3 months. In addition, highly sensitive C-reactive protein (hsCRP) and leukocyte count as markers of inflammatory activity were measured.

Results: T levels at baseline were 2.83 ± 0.34 ng/mL in the T group and 3.1 ± 0.11 in the control group. During treatment, T increased to 5.27 ± 0.46 and remained stable at 3.01 ± 0.1 in the control group. hsCRP (mg/dL) levels at baseline were 16.45 ± 9.97 in the T-treated group vs 7.43 ± 0.92 in the control group. They decreased to 3.82 ± 2.46 after 60 months in the T-treated group and increased to 9.25 ± 1.61 in the control group. The CADI decreased from 220.61 ± 49.1 to 72.78 ± 2.64 in the treated group and increased from 196.82 ± 7.17 to 213.18 ± 14.19 in the control group. Leukocyte count decreased from 13.17 ± 2.7 to 5.94 ± 0.73 in the treated group and remained unchanged in the control group (from 11.43 ± 1.34 to 11.08 ± 1.46).

Conclusion: Normalization of T in hypogonadal men with Crohn's disease led to improvements of the CADI, hsCRP and a reduction of leukocytes. The mechanism of this improvement may be through anti-inflammatory and immunosuppressive effects of testosterone, reducing chronic inflammation of the intestinal wall in CD.