TESTOSTERONE TREATMENT PREVENTS PROGRESSION FROM PREDIABETES TO TYPE 2 DIABETES (T2DM) IN 303 HYPOGONADAL MEN: 14-YEAR REAL-LIFE DATA FROM A REGISTRY

Aksam Yassin[1,2,3] , Mohammed Mahdi* [1], Mustafa Alwani [4], Talib[1], Abdel Rahman Jaber [1], and Khalid Alrumaihi[1]

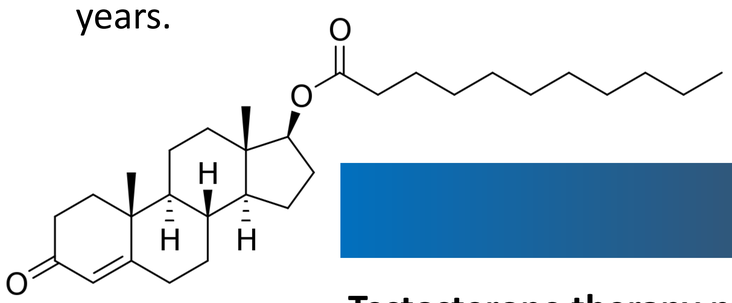
[1] *Department of Urology, Hamad General Hospital, HMC, Doha, Qatar*, [2] Institute for Urology and Andrology, Norderstedt, Germany, [3] Dresden International University, Dresden, Germany, [4] *University of science and technology , school of medicine, Irbid, Jordan*

Introduction & Objectives

- Type 2 diabetes (T2D) is a public health threat, with approximately 463 million adults were living with diabetes. Men with hypogonadism, also known as testosterone deficiency, are at increased risk for developing insulin resistance (IR), prediabetes and type 2 diabetes.
- Prediabetes represents a window of opportunity for intervention to prevent T2D.
- Since testosterone improves glycemic control in T2D, we investigated whether testosterone therapy (TTh) in men with hypogonadism and prediabetes prevents progression to T2D.

Methods

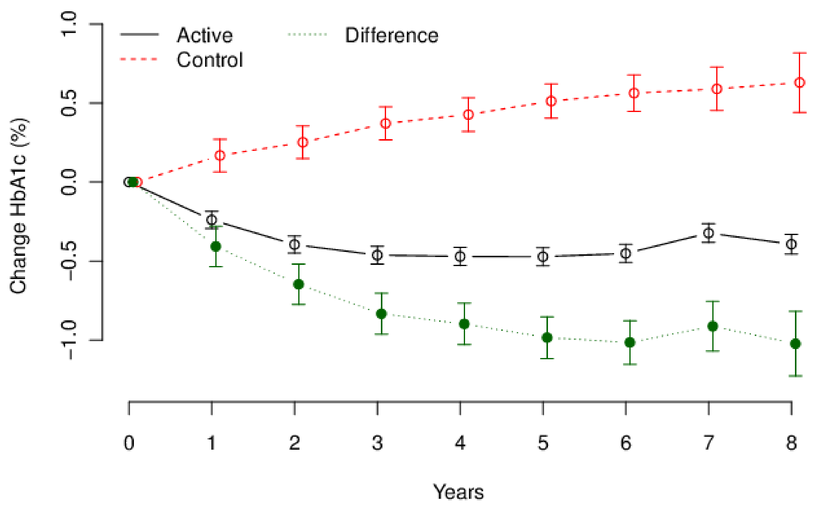
- Pooled data from 2 ongoing urological registries reviewed, 303 men with hypogonadism (total testosterone levels ≤12.1 nmol/L combined with symptoms of hypogonadism) had prediabetes defined by HbA $_{1c}$ 5.7-6.4% according to ADA.
- 220 of the patients received treatment with 3-monthly injections of testosterone undecanoate (TU; T-group),
- 83 patients who opted against TTh served as controls (CTRL). Anthropometric and metabolic parameters were measured over 14 years, with a mean follow up around 6 years.

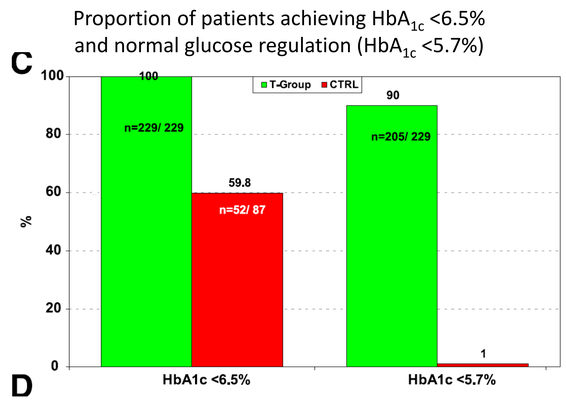


Results

- Mean follow-up: 6.6 years(T-group), 5.6 years(CTRL).Mean age: 60.6±9.6 years.
- *T-group:* HbA $_{1c}$ **decreased** from 5.9±0.2 to 5.5±0.3% (p<0.0001). CTRL: HbA $_{1c}$ **increased** from 5.9±0.2 to 6.1±0.6% (p<0.0005).
- **At the last observation, all patients in the T-group had an HbA $_{1c}$ <6.5%. In CTRL, 35 men (42.2%) had progressed to T2DM with HbA $_{1c}$ >6.5%** .
- The TyG index, surrogate parameter for insulin resistance, decreased in the T-group from 9.3±0.4 to 9.0±0.4 at 8 years. In CTRL, TyG index increased from 8.9±0.6 to 9.3±0.4 at 8 years.
- T-group: Weight decreased from 96.7±12.3 to 89.0±9.6 kg and increased from 92.9±10.4 to 98.2±6.3 kg in CTRL.
- T-group: Waist circumference decreased from 104.2±7.1 to 98.2±6.5 cm and increased from 102.5±9.7 to 106±3.2 cm in CTRL.

Figures & Graphs





Conclusion

Testosterone therapy prevented progression from prediabetes to T2DM in hypogonadal men while more than 40% of untreated hypogonadal men developed T2DM. This effect may have been mediated by weight loss and the invariable increase in lean mass achieved by testosterone.

Corresponding Speaker: Dr.Mohammed Mahdi
Hamad Medical Corporation, Doha, Qatar, PO 3050
Email: Mohamed_mahdi2002@Hotmail.com