P142 Androgen Receptor Reduced Sensitivity is Associated with Cardiovascular Mortality in Men with Type 2 Diabetes - A 14-year Follow up Study

Adrian Heald¹,², Ghasem Yadegarfar³, Mark Livingston⁴, Helene Fachim¹,², Ram Prakash Narayanan⁵, Mark Lunt⁶, Kirk Siddals⁶, Gabriela Cortes⁷, Martin Gibson¹,², Rachelle Donn², Simon Anderson⁸, Geoff Hackett¹,², Hugh Jones¹⁰

¹Salford Royal Hospital, Salford, UK
²University of Manchester, UK
³Isfahan University of Medical Sciences, Isfahan, Iran
⁴Walsall Manor Hospital, Walsall, UK
⁵University of Liverpool, UK
⁶University of Manchester
⁷High Speciality Regional Hospital of Ixtapaluca, Mexico City, Mexico
⁸University of the West Indies, Barbados
⁹Heartlands Hospital, Birmingham, UK
¹⁰University of Sheffield, Sheffield, UK

ABSTRACT

Background: Hypogonadism associates with increased cardiovascular morbidity/mortality in type 2 diabetes mellitus (T2DM) [1]. Increasing CAG repeat number within exon 1 of the androgen receptor gene associates with increased androgen receptor resistance/insulin resistance [2]. We here investigated the link between CAG repeat number and metabolic/cardiovascular outcomes in T2DM men.

Methods: We determined in a 14-year follow-up cohort of 274 T2DM Caucasian men in Salford UK, the association between baseline androgen status/CAG repeat number (determined by PCR followed by Sequenom sequencing) and metabolic trajectory plus mortality.

Results: Lower baseline testosterone was associated with higher Body Mass Index (BMI) (kg/m²) at 14-year follow-up: regression coefficient −0.30 (95% CI: −0.445 to −0.157), p = 0.0001 (total testosterone data) and higher HbA1c 2016. Higher baseline CAG repeat number associated with higher follow-up BMI in 2016 - each unit increase in CAG repeat associated with 0.43 increment in BMI 2016. At an average 14 year follow-up 55.8% of hypogonadal men had died vs 36.1% of eugonadal men (p = 0.001). 72% of deaths were from cardiovascular causes. There was a ‘u’ shaped relation between the number of CAG repeats and mortality such that 21–23 CAG repeats was associated with an up to 58% lower mortality rate than <21 CAG repeats and >23 CAG repeats (Figure 1). This was independent of baseline testosterone.

Conclusion: A higher number of CAG repeats at the testosterone receptor gene associates with higher future BMI/increased HbA1c. There was a ‘u’ shaped relation between CAG repeat number and mortality rate. CAG repeat number may become part of cardiovascular risk assessment in T2DM men.

Corresponding author. Email: adrian.heald@manchester.ac.uk

Figure 1
<table>
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<td>&gt;23</td>
<td>34</td>
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REFERENCES


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