Artery Research
Vol. **26**(**S1**); 2020, *p.* S88
DOI: https://doi.org/10.2991/artres.k.201209.073; ISSN 1872-9312; eISSN 1876-4401
https://www.atlantis-press.com/journals/artres

Conference Abstract

P.64 Active Vitamin D Treatment Does Not Improve Arterial Stiffness and Markers of Cardio-Renal Risk in Patients with Type 2 Diabetes and Stage 3 Chronic Kidney Disease: a Randomised Controlled Trial

Nikolaos Fountoulakis*, Salma Ayis, Anastasios Mangelis, Angeliki Panagiotou, Maria Flaquer, Stanimir Stoilov, Giuseppe Maltese, GianCarlo Viberti, Stephen Thomas, Luigi Gnudi, Janaka Karalliedde

King's College London

Keywords

Arterial stiffness
vitamin D
DKD

ABSTRACT

Background and Aims: Active vitamin D [1,25(OH)2D3] deficiency is a potential modifiable risk factor for cardiovascular (CVD) and renal disease in patients with type 2 diabetes (T2DM) and stage 3/4 chronic kidney disease (CKD). Exact mechanisms are unclear. Arterial stiffness is an independent predictor of CVD. There is limited data on the effect of active vitamin D treatment on arterial haemodynamics in this patient population.

Materials and Methods: We performed a 48 week duration single centre randomised double blind placebo controlled trial on the impact of calcitriol 0.25 mcg od in patients with T2DM and stage 3 CKD. Primary endpoint was change in Ao-PWV (index of arterial stiffness) measured by applanation tonometry (Sphygmocor system). Secondary endpoints included albuminuria (albumin excretion rate-AER) and changes in other indices of central haemodynamics.

Results: 127 (male 70%) patients were randomised to calcitriol (n = 64) or placebo (n = 63). Baseline, mean ± SD, values were: age 64.2 ± 7.7, eGFR 43.2 ± 20.2 ml/min, SBP 146.2 ± 19.9 mmHg, Ao-PWV 11.6 ± 3.3 m/s, and AER median (IQR) 50.51 (11.5 to 188.6) mcg/min. There was no significant mean (95% CI) change in Ao-PWV as compared to placebo of 0.05 m/s (−0.68 to 0.78) vs 0.23 m/s (−0.46 to 0.93) with a between treatment mean (95% CI) difference for Ao-PWV of 0.19 (−0.81 to 1.19) m/s (p = 0.71). No significant effect of calcitriol treatment observed on augmentation index or albuminuria.

Conclusion: In T2DM patients with stage 3 CKD, 48 week treatment with calcitriol as compared to placebo does not improve Ao-PWV, albuminuria or other indices of central haemodynamics.

REFERENCES

[1] Wolf M. J Am Soc Nephrol. 2008
[2] Mathew S. et al J Am Soc Nephrol. 2008
[3] Kovesdy CP et al Arch Intern Med 2008
[4] Karalliedde J et al Hypertension 2008
[5] Levin J et al Clin J Am Soc Nephrol 2017

*Corresponding author. Email: nikolaos.fountoulakis@kcl.ac.uk