P106: AORTIC STIFFNESS AND CENTRAL SYSTOLIC PRESSURE ARE ASSOCIATED WITH ORTHOSTATIC HYPOTENSION IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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as preterm birth, than hypertension which develops later in life. Surprisingly, no trials have investigated whether lifestyle advice developed for blood pressure control in older adults is effective in these young populations.

Methods: TEPHRA is a randomised control trial of a 16 week physical activity intervention including behaviour change and structured exercise in young adults with pre- and stage 1 hypertension. On-line recruitment is used with targeting to ensure inclusion of a proportion born preterm. Primary outcome is 24 hr ambulatory blood pressure at 4 months. Subjects undergo additional multimodal assessments including vascular stiffness, blood sampling, microvascular assessment, echocardiography, remote activity monitoring and multi-organ magnetic resonance imaging to identify potential predictors of blood pressure change.

Results: Recruitment started in April 2016 and currently (June 2017) 344 potential participants have been screened with 103 progressing to a baseline visit, of which 91 have been randomized. Two participants have completed their 12 month follow up. Recruitment is predicted to be completed by February 2018 with data reporting of four months outcomes in late 2018.

Conclusion: TEPHRA aims to deliver the most in-depth investigation to date on the effects of physical exercise on the cardiovascular system and health of young adults at risk of early hypertension and cardiovascular disease.

References

Poster Session II – Kidney P107

OSCCILLOMETRIC MEASUREMENT OF 24-HOUR PULSE VELOCITY PREDICTS ALL-CAUSE MORTALITY IN PATIENTS WITH END-STAGE RENAL DISEASE: THE ISAR-STUDY

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Objectives: Mortality rate in end-stage renal disease (ESRD) are still at a high level. Sarafidis et al. showed the predictive value of 48h PWV in patients undergoing hemodialysis [1], although recent studies using office measurement showed controversial predictive results. Aim of the present study was to confirm the predictive value of a novel oscillometric measurement of pulse wave velocity on mortality in an elderly cohort of patients with ESRD.

Methods: The ISAR study is a prospective and longitudinal study targeting patients with ESRD undergoing hemodialysis. Oscillometric measurement of 24-hour PWV was performed at baseline. Survival analysis included Kaplan-Meier analysis, logrank test and Cox regression.

Results: A total of 350 patients had a median age of 69.3 [55.8; 77.3] years. Mean PWV was 9.6 (2.2) m/s and 120 patients died during the mean follow-up of 45 months. PWV was significantly higher in the deceased (10.6 +/- 1.9 m/s) than in surviving patients (9.0 +/- 2.2 m/s). Kaplan-Meier analysis showed differences in dichotomized PWV (cut-off 10 m/s) [2]. Logrank test: p = 0.001. For results of univariate Cox regression, see Figure. Adjusted Cox regression analysis showed a significant risk prediction for all-cause mortality (HR 2.32; p = 0.011). Patients older than 50 years showed even higher predictive values (HR 2.442; p = 0.008) as well as patients with PWV values of at least 10 m/s (HR 3.30; p = 0.006).

Multivariate logistic regression showed SBP remained significantly associated with aortic stiffness (p = 0.002, OR = 1.45 95%CI = 1.15–1.77) and CSP (p = 0.026, OR = 1.031, 95%CI = 1.00–1.06), independent of age, eGFR, diabetes, smoking pack-years, cholesterol, height and weight. RAI (32.1% vs 28.9%, p = 0.093) and cr-PWV (11.0m/s vs 11.2m/s, p = 0.62) were not significantly different between groups.

Conclusion: Increased aortic stiffness and CSP are independently associated with OH. Stiff central arteries, rather than peripheral, contribute more to OH.

Figure. Univariate hazard-ratios and their 95% confidence intervals for continuous PWV and PWV quartiles (Q1) as reference; *** p = 0.002; ** p < 0.001; * p < 0.001). Q1: <7.92 m/s; Q2: 7.92—9.83 m/s; Q3: 9.83–11.23 m/s; Q4: >11.23 m/s.