



Artery Research

ISSN (Online): 1876-4401

ISSN (Print): 1872-9312

Journal Home Page: <https://www.atlantis-press.com/journals/artres>

P1.26: MICROVASCULAR REACTIVITY PARAMETERS FAIL TO PREDICT CARDIOVASCULAR EVENTS IN PATIENTS WITH CHRONIC KIDNEY DISEASE

J. Nemcsik, O. Csepreakal, J. Egresits, Z. Járai, K. Farkas, E. Fodor, L. Kerkovits, L. Babos, Németh Zs, A. Marton, G. Godina, L. Sallai, I. Kiss, A. Tislér

To cite this article: J. Nemcsik, O. Csepreakal, J. Egresits, Z. Járai, K. Farkas, E. Fodor, L. Kerkovits, L. Babos, Németh Zs, A. Marton, G. Godina, L. Sallai, I. Kiss, A. Tislér (2013) P1.26: MICROVASCULAR REACTIVITY PARAMETERS FAIL TO PREDICT CARDIOVASCULAR EVENTS IN PATIENTS WITH CHRONIC KIDNEY DISEASE, Artery Research 7:3_4, 117–117, DOI: <https://doi.org/10.1016/j.artres.2013.10.056>

To link to this article: <https://doi.org/10.1016/j.artres.2013.10.056>

Published online: 14 December 2019

OM 40 mg (n=42), or OM 80 mg (n=47) once a day according to a force-titration design during a 1 year period. Office blood pressure (BP), 24hABPM, aortic stiffness (carotid-femoral pulse wave velocity-PWV) and carotid parameters (diameter, intima-media thickness, and stiffness) were measured at baseline, 24 weeks (W24) and 52 weeks (W52). A mixed-model was used for statistical analysis.

Results: PWV significantly decreased ($P<0.001$) with time in each group, with no significant time-dose interaction, despite a tendency for a smaller effect of 20 mg, compared to 40 and 80 mg at W52. When the 40 and 80 mg doses were combined (40/80 mg vs 20 mg), there was a tendency ($p=0.0685$) for a time-dose interaction in PWV reduction. After adjustment to changes in MBP, a significant BP-independent reduction in PWV was observed: PWV decreased by -0.61 m/s at W52 ($p=0.0066$) after 40/80 mg, whereas the non-adjusted reduction was -1.33 m/s ($p<0.0001$). Most carotid parameters were improved along with BP reduction, and at W52 significant reductions were observed for carotid PP (-7.15 mmHg) and internal diameter (-0.217 mm), indicating a chronic inward arterial remodeling. Patients receiving the highest dose of OM (40 and 80 mg) were shifted towards both a low elastic modulus and a low wall stress, indicating an improvement in the intrinsic elastic properties of the arterial wall material.

Conclusion: These data suggest that 40 and 80 mg Olmesartan are able to significantly remodel and destiffen the arterial wall during long-term treatment, partly independently of MBP, compared to 20 mg

P1.25

SEVERITY OF ERECTILE DYSFUNCTION PREDICTS FUTURE EVENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF PROSPECTIVE STUDIES

D. Terentes-Printzios, C. Vlachopoulos, N. Ioakeimidis, K. Aznaouridis, C. Stefanadis

Peripheral Vessels Unit, 1st Cardiology Department, Hippokraton Hospital, Athens Medical School, Athens, Greece

Objectives: Evidence points towards a grading effect of the severity of ED in the predictive ability of this condition for CV events and all-cause mortality. We conducted a meta-analysis of all longitudinal studies for investigating the role of severity of ED in predicting risk of clinical events.

Methods: A comprehensive search of electronic databases was conducted through January 2013. Longitudinal studies that reported relative risk (RR) estimates with 95% confidence intervals (CI) of ED severity were included. Of the 5 studies included (101,147 participants, mean follow-up 6.4 years), all reported results on total CV events and 3 on all-cause mortality (98,212 individuals). Participants were grouped according to their ED severity in 3 different groups.

Results: The pooled relative risks (RRs) for total CV events were 1.32 (95% CI: 1.20 to 1.45, $p<0.001$) for men with moderate ED and 1.92 (95% CI: 1.37 to 2.68, $p<0.001$) for men with severe ED compared with men with no/mild ED ($p=0.036$ for comparison between men with moderate ED vs. severe ED). The pooled RRs for all-cause-mortality were 1.29 (95% CI: 1.01 to 1.65, $p=0.043$) for men with moderate ED and 1.83 (95% CI: 1.26 to 2.66, $p=0.002$) for men with severe ED compared with men with no/mild ED ($p=0.127$ for comparison between men with moderate ED vs. severe ED).

Conclusions: RR for CV events is higher at men with severe ED compared to men with moderate ED, implying a grading effect of ED severity and augmenting the pathophysiological link between ED and CV disease.

P1.26

MICROVASCULAR REACTIVITY PARAMETERS FAIL TO PREDICT CARDIOVASCULAR EVENTS IN PATIENTS WITH CHRONIC KIDNEY DISEASE

J. Nemcsik¹, O. Csepregal⁵, J. Egresits⁵, Z. Járjai², K. Farkas³, E. Fodor⁶, L. Kerkovits⁴, L. Babos¹, Németh Zs⁷, A. Marton⁷, G. Godina², L. Sallai², I. Kiss^{4,6}, A. Tislér⁵

¹Department of Family Medicine, Semmelweis University, Budapest, Hungary

²St. Imre Teaching Hospital, Division of Cardiology, Budapest, Hungary

³St. Imre Teaching Hospital, Division of Angiology, Budapest, Hungary

⁴St. Imre Teaching Hospital, Division of Nephrology, Budapest, Hungary

⁵1st Department of Internal Medicine, Semmelweis University, Budapest, Hungary

⁶B Braun Avitum Nephrological Network, Budapest, Hungary

⁷Uzsoki Hospital, Division of Nephrology, Budapest, Hungary

Endothelial dysfunction, as assessed by laser-Doppler flowmetry (LDF) is an accepted method to measure microvascular reactivity, which correlates with

cardiovascular risk factors in several patient populations. The aim of our prospective cohort study was to assess determinants of LDF parameters and to evaluate their prognostic values in patients with chronic kidney disease (CKD).

Ninety four hypertensive, stage 1-5 non-dialysis CKD patients had LDF measurements (iontophoresis of acetylcholine and sodium nitroprusside in different doses and postocclusive reactive hyperaemia (PORH)). Baseline associations of these parameters with clinical, hemodynamic and laboratory characteristics were determined by linear regression models. Patients were followed for a median of 43 (37-55) months and the prognostic value of LDF parameters for cardiovascular (CV) events were evaluated by log-rank tests and Cox proportional hazard models.

The different LDF parameters did show strong correlation with each other. All iontophoresis parameters were strongly and negatively related to the presence of diabetes or antidiabetic treatment. All PORH parameters were strongly and negatively associated to central pulse pressure and the use of calcium channel blockers. During follow-up 26 CV events occurred. In multivariate analysis, only the presence of diabetes was found to be an independent predictor of CV events (RR: 3.85 (1.66-8.89), $p=0.0012$). None of the LDF parameters predicted CV outcome.

According to our results only the presence of diabetes, but not parameters of microvascular reactivity measured by iontophoresis or PORH have prognostic value for CV events in patients with CKD on conservative therapy. (Supported by Hungarian Kidney Foundation and Hungarian Society of Hypertension).

P1.27

ARTERIAL RESISTANCE IS REDUCED IN PATIENTS WITH TYPE 2 DIABETES AND RESISTANT HYPERTENSION AFTER A MEDIAN PERIOD OF 6 MONTHS INTENSIFIED ANTIHYPERTENSIVE TREATMENT

T. K. Soender, T. de Backer, L. van Bortel
Ghent University, Ghent, Belgium

Objectives: To examine vascular characteristics in patients with type-2-diabetes (T2D) and resistant hypertension (RH) after a median period of 6 months intensified antihypertensive treatment.

Methods: Patients were characterized as having RH based on ambulatory blood pressure measurements (ABPMs, Kivex[®] and Spacelabs[®]). ABPMs were performed at baseline and at 6 months follow up. Pulse wave velocity was measured using the Sphygmocor[®] device. Central arterial pressure waves were obtained using radial applanation tonometry and a generalized transfer function. Central flow waves were measured just below the aortic annulus using echocardiography. Pressure and flow waves were analysed in customized software written in Matlab.

Results: Data are presented as medians and [interquartile ranges]. Follow-up time was 6 [5;8] months. 34 Patients with RH were included for analysis. The intensified antihypertensive treatment resulted in increased use of RAS blockers with no change in use of other antihypertensive agents (diuretics, calcium channel blockers or aldosterone antagonists).

Clinic blood pressure was reduced from 154 [143;164] / 89 [81;94] mmHg to 140 [126;160] / 85 [78;93] mmHg ($P<0.04$), whereas there was no significant reduction in ABPMs (139 [132;145] / 75 [70;79] to 138 [129;148] / 76 [69;82] mmHg).

After statistical adjustment PWV and characteristic impedance did not change. Arterial resistance was significantly decreased even after adjustment including pulse pressure (See table).

Characteristic	Baseline	Follow up
Pulse wave velocity (m/s)	10.8 [8.8;12.2]	9.9 [8.4;13.1]
Characteristic impedance (mmHg/mL)	0.1 [0.07;0.13]	0.08 [0.07;0.12]
Total arterial resistance (mmHg/(mL/s))	1.53 [1.34;1.87]	1.46 [1.19;1.79]*

Table legend: Vascular characteristics in patients with T2D and RH. "*" Statistical significant change from baseline after adjustment for changes in heart rate, mean arterial pressure or pulse pressure if appropriate.

Conclusion: We conclude that arterial resistance, not arterial stiffness, is reduced in patients with T2D and RH after a median period of 6 months antihypertensive treatment.