P146: ANALYSIS OF RENAL ARTERY REVASCULARIZATION IN A TERTIARY CARE CENTRE

Pedro Marques, Luís Flores, André Carvalho, Joel Sousa, Patrícia Lourenço, Jorge Almeida

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(rcPWV = \(-0.163, \text{rcMAP} = -0.171\)). To clarify the relation between LVDD and arterial stiffness the conditional inference trees analysis was used. Only ctpPWV, MAP, heart rate and BMI were significant for presence of LVDD.

Conclusion: Carotid-to-femoral PWV, the biomarker of vascular damage, is significant determinant of LV diastolic dysfunction in MetS patients. Arterial stiffness is a possible causal link to development of LV diastolic dysfunction.

References

P146

ANALYSIS OF RENAL ARtery REvascularization in a TERTIARY CARE CENTRE

Pedro Marques 1, Flores Luís 2, André Carvalho 3, Joel Sousa 4, Patricia Lourenço 1, Jorge Almeida 2

1Internal Medicine Department - Centro Hospitalar de S.Jodo, Porto, Portugal
2Internal Medicine Department - Centro Hospitalar S. João, Porto, Portugal
3Radiology Department - Centro Hospitalar S. João, Porto, Portugal
4Vascular Surgery Department - Centro Hospitalar de S. João, Porto, Portugal

Renovascular hypertension is an uncommon cause of secondary hypertension. Percutaneous angioplasty is considered in selected patients. Retrospective study of patients undergoing renal artery revascularization, in a tertiary centre, in 2004–2017. Demographic, biometrical, radiological and clinical data were gathered. Sixty-one procedures were performed in 50 patients (42 adults). Most had Atherosclerotic Renal Artery Stenosis (ARAS) (n = 28, 56%), followed by Fibromuscular Dysplasia (FMD) (n = 14, 28%); 8 (16%) presented rare aetiologies. Patients were predominantly female (72%) irrespectively of aetiology. Compared to FMD, patients with ARAS were older (63 ± 11 vs 35 ± 21 years, p < 0.001), and more often had dyslipidaemia (89.3% vs 42.9%, p = 0.002) and diabetes mellitus (39.3% vs 7.1%, p = 0.04). Most ARAS patients had stent placement (96.4%). Resistant hypertension (53.6%) and deteriorating renal function (32.1%) were the main causes for intervention. Concomitant peripheral artery disease and carotid atherosclerosis were reported in 39.3% and 46.4%, respectively. FMD was predominantly treated with balloon angioplasty (71.4%). Renovascular disease was multifocal in 71.1%. Supra-aortic and other abdominal aortic branches involvement was reported in 14.3% and 21.4%, respectively. Nine early complications (0.0% in ARAS, 25.0% FMD and 33.0% other aetiologies, p = 0.008) and 14 late complications (10.0% in ARAS, 31.3% FMD and 40.0% other aetiologies, p = 0.05) were reported, mainly residual stenosis and restenosis. Cure/improvement of hypertension occurred in 99.2% patients revascularized (66.7% in ARAS, 42.9% FMD and 62.5% other aetiologies, p = 0.33).

Our cohort was predominantly female. ARAS patients were older and had higher cardiovascular risk burden. There was a trend to less success in hypertension control improvement in FMD patients.

P147

ASSOCIATIONS BETWEEN RESERVOIR PRESSURE PARAMETERS AND KIDNEY FUNCTION ARE DEPENDENT ON THE ARTERIAL MEASUREMENT SITE

Matthew Armstrong 1, Dean Picone 1, Martin Schultz 1, James Sharman 1, Nathan Dwyer 2, Philip Roberts-Thomson 1, Andrew Black 2

1Menzies Institute for Medical Research, University of Tasmania, Australia
2Royal Hobart Hospital, Australia

Introduction: Reservoir pressure parameters derived from pressure waveforms captured at various arterial sites predict adverse kidney function independently of conventional cuff blood pressure (BP). However, there has never been an analysis directly comparing if associations with kidney function may differ depending on arterial site of measurement, which was the aim of this study.

Methods: Intra-arterial BP waveforms were measured via fluid filled catheter at the ascending aorta, brachial and radial arteries in 172 people undergoing coronary angiography (aged 60 ± 13 years, 67% male). Customised Matlab software was used to derive reservoir pressure and associated parameters of excess pressure, diastolic and systolic rate constants at each arterial site. Kidney function was determined by estimated glomerular filtration rate (eGFR).

Results: Reservoir and excess pressure derived from BP waveforms measured at the aorta were associated with eGFR (r = -0.26, and r = -0.24, p < 0.01, respectively), but not from brachial or radial BP waveforms (r < -0.14, p > 0.07 all). However, diastolic rate constants from BP waveforms at all arterial sites were significantly associated with eGFR. These associations remained following adjustment for aortic systolic BP, heart rate, sex, and body mass index (β = -0.37, p = 0.001; β = -0.37, p = 0.003; β = -0.25, p = 0.02 respectively). Systolic rate constants were not significantly associated with eGFR at any arterial site.

Conclusion: Associations between reservoir pressure parameters and kidney function are dependent on site of waveform measurement, with exception of the diastolic rate constant, which independently relates to kidney function irrespective of location. This is of clinical relevance since this variable can be derived from non-invasively recorded peripheral BP waveforms.

References