P5.8: MISMATCH BETWEEN OFFICE BLOOD PRESSURE RESPONSE AND HEMODYNAMIC PARAMETERS IN ROUTINE TREATMENT OF HYPERTENSIVE PATIENTS

P. Forcada, C. Castellaro, S. Gonzalez, S. Obregon, J. Chiabaut, C. Kotliar

To cite this article: P. Forcada, C. Castellaro, S. Gonzalez, S. Obregon, J. Chiabaut, C. Kotliar (2014) P5.8: MISMATCH BETWEEN OFFICE BLOOD PRESSURE RESPONSE AND HEMODYNAMIC PARAMETERS IN ROUTINE TREATMENT OF HYPERTENSIVE PATIENTS, Artery Research 8:4, 144–144, DOI: https://doi.org/10.1016/j.artres.2014.09.145

To link to this article: https://doi.org/10.1016/j.artres.2014.09.145

Published online: 7 December 2019
ARTERIAL REMODELING AND ITS RELATIONSHIP WITH BLOOD PRESSURE CONTROL IN CHILDREN WITH NON-DIALYSIS CHRONIC KIDNEY DISEASE

M. Sinha a, L. Keehn b, L. Milne c, P. Chowienczyk b
aEvelina London Children’s Hospital, Guy’s and St. Thomas NHS Trust, London, UK
bSt Thomas’ Hospital, Kings College London, London, UK

Objectives: To investigate large artery viscoelastic properties in children with non-dialysis stages of CKD and compare this with healthy children with normal renal function and (ii) to evaluate the impact of blood pressure components following adjustment for level of renal dysfunction.

Methods: Prospective single centre study including 226 children [188 children with non-dialysis CKD (11.9 ± 3.7 years) and 38 controls (11.5 ± 3.3 years)] were recruited from tertiary out-patient clinics. Common carotid artery parameters were non-invasively determined using a high-definition echotrac system. Peripheral and central BP were also measured non-invasively.

Results: When compared to controls, in children with CKD with similar levels of peripheral and central BP, anatomical measures of arterial properties such as lumen diameter and carotid wall thickness remained comparable. In those with BP >75th percentile there were significant differences between elastic properties of the carotid artery when compared with controls: distensibility (92.3 ± 31 versus 114.3 ± 33 kPa x 10^-3, p = 0.03), compliance (2.1 ± 0.7 versus 2.6 ± 0.7 m 2 x 10^-6, p = 0.02), Young’s elastic modulus (0.151 ± 0.068 versus 0.109 ± 0.049 kPa x 10^3, p = 0.02) and wall stress (83.6 ± 23.5 versus 68.7 ± 14.9 kPa, p = 0.02). These differences were independent of glomerular filtration rate (GFR). Multivariate regression analysis displayed brachial mean arterial pressure (MAP), carotid systolic and carotid pulse pressure were all associated with carotid artery functional elasticity following adjustment for age, body mass index and GFR.

Conclusions: Changes in elasticity of the carotid artery is one of the earliest identifiable alterations in children with non-dialysis CKD but is primarily explained by level of blood pressure and not that of renal function.

LACK OF RECOVERY IN NOCTURNAL DECLINE OF HEART RATE AND BLOOD PRESSURE AFTER HEART TRANSPLANTATION

P. Meani a, b, M. Varrenti a, b, L. Giupponi a, b, L. Bonacchini a, b, V. Riva a, b, A. Maloberti b, F. Turazzi a, M. Frigerio b, G. Parati b, S. Wasertheurer c, C. Giannattasio a, b
aHospital Cà Grande Niguarda, Milan, Italy
bMilano Bicocca University, Milan, Italy

Background: The cardiac transplant (CTR) patient provides a unique model for the study of blood pressure (BP) and heart rate (HR) changing. The parasympathetic and sympathetic influences ordinarily regulate circadian rhythm. This lack is known as derangement and these nerves rarely grow back. The aim of our study is to investigate the circadian rhythm of BP and HR in relationship with PWV and AIx over 24 hours.

Methods: We collected anthropometric parameters, clinical history, blood test and echocardiogram in 24 HT patients (12 HT after CTR and HT controls). ABPM, PWV and AIx were recorded over 24 hours with Mobilograph device. The HT-CTR was compared with age/gender matched HT controls. Non-parametric statistic analysis was performed.

Results: The characteristics of CTR and controls had similar age (55 ± 14 yrs), gender (9M and 3F), BMI (25 ± 5.2 vs 27.9 ± 4.2 kg/m²) and serum creatinine levels (1.6 ± 0.4 vs 9 ± 0.2). The mean years after transplant were 10.4. 24h BP, MAP and HR were similar in two groups (BP: 128 ± 11.23/78.16 ± 8.23 vs 124.9 ± 14.95/79 ± 12.6; MAP: 100.9 ± 7.8 vs 100.1 ± 13 mmHg; HR: 74.5 ± 11 vs 69 ± 10). The same was for daily BP, PWV (8.1 ± 8.2 vs 8 ± 7.3 m/s) and AIx (23.6 ± 7.5 vs 22.8 ± 5.8) which however, had not had circadian pattern. On the contrary, MAP and HR were higher in CTR during nighttime (101 ± 10.4/94 ± 10 mmHg, p = 0.039, 70 ± 6.6 vs 62 ± 9 bpm, p = 0.05). Consequently, no dipper and inverse phenomenon were higher in CTR (chi-square, p < 0.05).

Conclusions: Our findings show that PWV and AIx haven't circadian variation. CTR haven't circadian rhythm of BP and HR also 10 years after transplant. Thus, cardiac innervation has a crucial role in dipping phenomenon. This does not recover over time.