P7.3: IMPACT OF KIDNEY TRANSPLANTATION ON AORTIC STIFFNESS: RESULTS FROM 2-YEAR FOLLOW-UP

D. Turgeon, C. Fortier, S. Ignace, S. De Serres, I. Côté, I. Houde, M. Agharazii


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to monitor response to therapy as well as pharmacologic support of the circulation.

P7.3
IMPACT OF KIDNEY TRANSPLANTATION ON AORTIC STIFFNESS: RESULTS FROM 2-YEAR FOLLOW-UP

D. Turgeon a,b, C. Fortier a,b, S. Ignace c, S. De Serres a,b, I. Côté a,b, I. Houde a,b, M. Agharazii a

Background: Kidney transplantation (KTx) may improve arterial stiffness. The purpose of the present study is to examine the effects of KTx on aortic stiffness after 2 years of follow-up.

Methods: In this prospective, longitudinal observational study, we studied hemodynamic parameters prior to KTx and 3, 6 and 24 months after a KTx in 59 dialysis patients. Aortic stiffness was measured by carotid-femoral pulse wave velocity (cf-PWV) and heart rate adjusted central augmentation index (AIx) was measured by arterial tonometry. A successful KTx was defined by an estimated eGFR of ≥45 mL/min/1.73 m². Linear mixed model was used to take into account the repeated measures of aortic stiffness and mean blood pressure. Values are reported as mean±SEM.

Results: The mean age was 48 years, with 70% male, 20% with cardiovascular disease and 25% diabetes. After adjusting for mean blood pressure, cf-PWV decreased significantly from 11.2±0.33 to 10.3±0.30 by 3 months (P=0.042), but cf-PWV gradually increased to 10.8±0.31 and 11.2±0.33 (m/s) by 6 and 24 months and was not statistically different from the baseline. In an analysis stratified by age, the early improvement of aortic stiffness was only statistically significant for patients older than 50 years of age. However, MAP-adjusted AIx did not change significantly after KTx.

Conclusion: This study shows that there is an early reduction in aortic stiffness after KTx with a gradual return in aortic stiffness to baseline values after 2 years of follow-up. This study suggests a reduction in the rate of progression of aortic stiffness after KTx.

P7.4
AORTIC STIFFNESS IS ASSOCIATED WITH FUNCTIONAL LIMITATION (OR SIX MINUTE WALK DISTANCE) IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE: THE ERICA STUDY

M. Fisk a, D. Mohan a, C. Bolton a, J. Cockcroft b, W. Macnee c, C. McCeney a, R. Tal-Singer a, M. Polkey a, I. Wilkinson a

aUniversity of Cambridge, Cambridge, UK
bRoyal Brompton & Harefield Foundation NHS Trust, London, UK
cUniversity of Nottingham, Nottingham, UK

Objective: To test Kario hypothesis (J Am 5 Hypertens 2010; 45(5):215-218) that predominant “arterial stiffness” (AS) and “volume-dependent” (V) types of arterial hypertension may exist and thus evaluation of arterial stiffness and volume-dependency status may help to identify choice between a calcium channel blocker (as “anti-stiffness” drug) and a diuretic (as “anti-volume” drug) to achieve blood pressure (BP) control.

Methods: Pulse wave velocity (PWV, SphygmoCor, AtCor, Australia) and plasma renin activity (PRA, radioimmune assay) were measured in 124 (48 men) untreated hypertensive patients aged 50-65 years (mean 59.6±5.1 years with GFR CKD-EPI >60 mL/min/1.73 m²). AS-typing was done by individual PWV interpretation (Boutouyrie P., Vermeersch S.J, Eur Heart J 2010;31:2338-2350). PRA <0.65 ng/ml/h was considered as V-type, PRA >0.65 ng/ml/h as renin (R) type.

Results: V-type was found in 57.3%, R-type in 42.7%, AS-type in 47.6% patients. Isolated (normal PWV) types were observed in 52.4%, isolated R-type was more prevalent (38.7%) than isolated V-type (13.7%). AS-V-type was found in 43.6%, AS-R-type + -4.0, p=0.001) and pulse pressure amplification (β=0.07, p<0.001) was found.

Conclusion: Significant over-lap in “arterial stiffness” and “volume” types of arterial hypertension aques against possibility of differential choice between a calcium channel blocker and a diuretic for BP lowering guided by evaluation of PWV and PRA.

P7.5
PHENOTYPING OF ARTERIAL HYPERTENSION BY PULSE WAVE VELOCITY AND PLASMA RENIN ACTIVITY MEASUREMENT

E. Pavlova, Y. Kotovskaya, Z. Kobalava

People's Friendship University of Russia, Moscow, Russia

Objective: To explore characteristics of BP and arterial properties. The aim of the study was to explore characteristics of central pulse wave and AIx on AM of brachial and central BP in age subgroups.

Methods: Successful AM of brachial and central BP was done with oscillometric (BPLab VASOTENS system) in 84 untreated hypertensive subjects (55.8±9.6 years, male 36.9%). Gender differences of isolated central BP and AIx were evaluated in patients -55 years (14 men, 23 women), 55-60 years (7 men, 16 women), 61-70 years (10 men, 14 women). Differences were considered significant if p<0.05.

Results: Brachial day/night SBP was similar in age subgroups: <55 years 140/155±31±18, 55-60 years 139/171±36±22, 61-70 years 137/192±13±23 mmHg. Increase in day- and night-time brachial PP was observed from younger to older patients due to the reduction of diastolic DBP: <55 years 55±12 mmHg, 55-60 years 57±11±12, 61-70 years 57±12/15±16 mmHg, <55 years DBP day/night 87±11/78±11, 55-60 years 84±9/79±12, 61-70 years 81±9/73±12 mmHg. Aortic day/night PP trend was similar: <55 years 42/9/43±10, 55-60 years 45/10/48±12, 61-70 years 47/15/50±14 mmHg. AIx/HR75 also increased with age, and this increase was observed both during day- and night-time: <55 years AIx day/night 24/18±31/17, 55-60 years 28±16/38/16, 61-70 years 33±15/42±12.

Conclusion: 24-h AM of central BP revealed age-related increase in aortic PP and AIx both for day- and night-time.