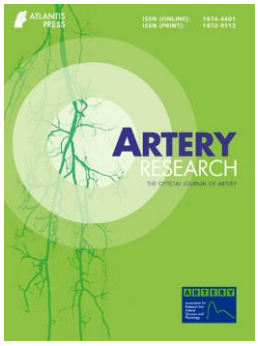

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PO-09: CENTRAL HEMODYNAMICS AND ARTERIAL STIFFNESS IN YOUNG OBESE ADULTS: THE PRELIMINARY FINDING

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1A). For recipient group, mean SBP, DBP, and BMI trended down after transplantation. However, these values increased to almost the same levels of pre-transplantation at 3-month post-transplant, and only DBP and BMI trended up beyond pre-transplant values at 6-month post-transplant (Figure 1B). Among 24 donors, 13 and 11 patients were living-related (LRD) and living unrelated donors (LUD), respectively. SBP, but not DBP continuously decreased in both LRD and LUD. Conversely, BMI was up trending in LRD, but decreased at 2-week post-donation, and then rebounded at 6-month (Figure 2A and 2B). Of all 24 recipients, 13 and 11 patients were living-related (LRR) and living unrelated renal transplant recipients (LUR), respectively. SBP, DBP, and BMI in LRR decreased until 1-month post-transplant and increased to above pre-transplant levels at 6-month post-transplant without statistical significance (Figure 2C). LUR group had the same patterns of SBP, DBP, and BMI, but SBP and DBP at 1-week and 1-month post-transplantation almost significantly decreased from the pre-transplant levels (Figure 2D).

Conclusion: BP and BMI in both donors and recipients seem to be positively correlated, and BMI rebounded beyond the pre-donation and pre-transplant levels. Early post-transplant SBP and DBP appear to be better improved in LUR than LRR group.

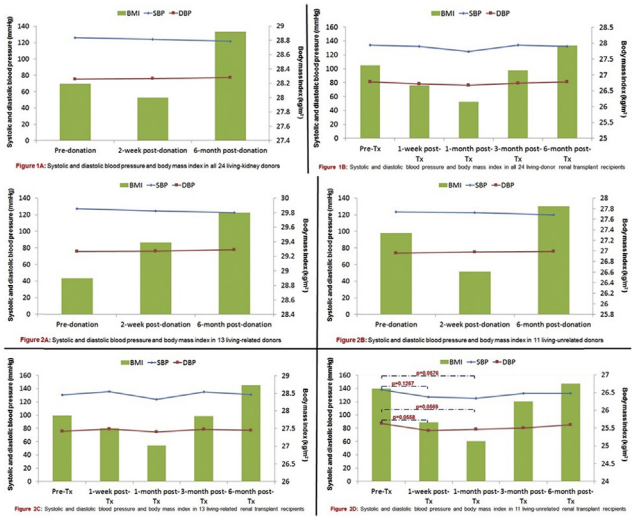

Figure 1A: Systolic and diastolic blood pressure and body mass index in all 24 living-kidney donors

Figure 1B: Systolic and diastolic blood pressure and body mass index in all 24 living-donor renal transplant recipients

Figure 2A: Systolic and diastolic blood pressure and body mass index in 13 living-related donors

Figure 2B: Systolic and diastolic blood pressure and body mass index in 11 living-unrelated donors

Figure 2C: Systolic and diastolic blood pressure and body mass index in 13 living-related renal transplant recipients

Figure 2D: Systolic and diastolic blood pressure and body mass index in 11 living-unrelated renal transplant recipients

young obese adults with normal metabolic profile still exhibited comparable central hemodynamics and arterial stiffness as normal-weight adults, suggesting preserved vascular health despite initial carotid vascular remodeling.

Table 1 Comparisons of central hemodynamics and arterial stiffness in normal-weight and obese adults.

	Normal-Weight (n=11)	Obese (n=13)
Percent body fat (%) *	31.1±1.7	41.9±1.7
Total cholesterol	180±14	176±11
High density lipoprotein (mg/dL)	62±3	51±5
Low density lipoprotein (mg/dL)	103±14	110±12
Triglycerides (mg/dL)	100±19	85±11
Glucose (mg/dL)	96±4	98±5
Brachial SBP (mmHg)	109±1	109±3
Brachial DBP (mmHg)	70±2	73±2
Aortic SBP (mmHg)	93 ±3	96±3
Aortic DBP (mmHg)	65±2	69±2
HR (bpm)	62±2	58±3
cIMT (mm) *	0.37±0.01	0.44±0.02
CAVI	6.0±0.2	6.0±0.2
β-Stiffness	5.5±0.4	5.2±0.4
Ep (kPA)	66.3±5.3	62.8±5.3
AC (%)	1.02±0.07	1.20±0.09
AIx (%)	7±4	6±3
AIx@75 (%)	0±3	-2±3
AP (mmHg)	2±1	2±1
FPH (mmHg)	25±1	25±1
RPH (mmHg)	38±6	34±6
RI (%)	19±4	24±9

Data are mean±SE. BMI, body mass index; cIMT, carotid intima-media thickness; CAVI, cardio-ankle vascular index; β-stiffness, beta stiffness; Ep, elastic modulas; AC, arterial compliance; SBP, systolic blood pressure; DBP, diastolic blood pressure; MAP, mean arterial pressure; HR, heart rate; AIx, augmentation index; AIx@75, augmentation index normalized to heart rate of 75 bpm; FPH, forward pulse height; RPH, reflected pulse height; RI, reflection index. *significant group difference based on an independent *t*-test ($P<0.05$).

PO-09
CENTRAL HEMODYNAMICS AND ARTERIAL STIFFNESS IN YOUNG OBESE ADULTS: THE PRELIMINARY FINDING

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Changes in central hemodynamics and arterial stiffness are associated with augmented cardiovascular risks and have been reported in obese adults with metabolic syndrome. It is unclear whether this observation may also be present in young healthy obese adults with normal metabolic profile.

Objectives: To compare measures of central hemodynamics and arterial stiffness in young normal-weight vs. obese adults.

Methods: There were 11 normal-weight (female=6; age 25±2 yrs; BMI 22.4±0.6 kg/m^2) and 13 obese adults (female=6; age 27±1 yrs; BMI 32.7±0.6 kg/m^2). Central hemodynamics were measured using SphygmoCor and wave separation analysis. Ultrasonography was used to measure carotid intima-media thickness (cIMT) and arterial stiffness (beta stiffness (β), elastic modulus (Ep), arterial compliance (AC)). Cardio-ankle vascular index (CAVI) was measured using VaSera and is another index reflecting the stiffness of the artery from the heart to ankles. Percent fat was determined using DEXA.

Results: Obese adults exhibited higher percent body fat and cIMT than normal-weight adults ($P<0.05$), with no group differences in metabolic profile. No group differences were observed for brachial and aortic blood pressures, heart rate, arterial stiffness, and wave separation variables.

Conclusion: The larger carotid intima-media thickness in young obese adults suggest early remodeling of the vasculature as a result of obesity. However,

PO-10
VASCULAR FUNCTION IN INDIVIDUALS WITH DOWN SYNDROME

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Individuals with Down syndrome (DS) experience premature aging. Arterial stiffness increases with advancing biological age and predicts cardiovascular disease. However, only limited studies investigated arterial function in individuals with DS. Thus, the impact of DS on vascular function still remains poorly understood.

Purpose: To compare vascular function between individuals with and without DS (control).

Methods: Twenty-seven volunteers (DS=13, Control=14) participated in this study. Central arterial stiffness indices (β-stiffness, Ep and circumferential strain) were measured by carotid ultrasonography and analyzed with B-mode, echo tracking and strain analysis. Cardio-ankle Vascular Index (CAVI) and carotid blood pressure (carBP) were measured using a limb cuff system and applanation tonometry (SphygmoCor), respectively. In addition, heart rate (HR) was recorded by finger photoplethymography.

Results: There were significant differences in CAVI (lower) and circumferential strain (higher) in individuals with DS compared to individuals without DS ($p<0.05$). No group differences were observed for β-stiffness and Ep.

Conclusions: Our results suggest that individuals with DS have lower arterial stiffness than that of individuals without DS. Interestingly, circumferential carotid strain was greater in persons with DS, with no differences in β-stiffness, suggesting the greater strain may have been a function of greater pulse pressure in individuals with DS.