P4.30: ALCOHOL EXERTS A SHIFTED U-SHAPED EFFECT ON CENTRAL AND PERIPHERAL BLOOD PRESSURE IN YOUNG ADULTS

A. Yu, P. Scheffler, R.J. Doonan, G. Egiziano, A.D. Protogerou, S.S. Daskalopoulou


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ejection time (298.9 ± 4.9 ms vs. 316.8 ± 4.5 ms) (t-test, p < 0.05). In addition, the normotensives with a family history of hypertension have decreased latency of the baroreflex response (7.0 ± 0.5 s) compared to the control group (10.5 ± 0.9 s) (p < 0.001).

Conclusions: Our results indicate that even normotensives with a family history of hypertension exhibit changes of some cardiovascular parameters at early age. The changes in Valsalva manoeuvre response also show alteration of the autonomic nervous system reactivity.

P4.28
IMPACT OF WEIGHT CHANGE ON INTIMA MEDIA THICKNESS OF CAROTID ARTERIES AND ENDOTHELIAL FUNCTION IN FUNCTIONAL OBESITY AND OVERWEIGHT HYPERTENSIVE SUBJECTS
K. R. Chagunava, G. V. Lomtatidze
National Centre of Therapy, Tbilisi, Georgia

Objectives: Taking into consideration that obesity and AH are the most important related risk-factors of CVD we examined differences in carotid artery intima-media thickness (IMT) and endothelial function between obese and overweight hypertensive individuals.

Methods: We studied 102 patients with mild to moderate AH (67males/ 35females, mean age 51.3±2.4 years, BMI 30.9±1.1 kg/m², duration of AH 4.6±1.4 years). Examination included: color triplex carotid artery scanning; assessment of endothelial function of brachial artery; 24-hour BP monitoring. 49 overweight patients (25.8±0.9 kg/m²) were assigned to group 1 and 53 obese patients (BMI>30 kg/m²) to group 2.

Results: The groups were comparable by the age, duration of AH, daily mean BP values. Mean values of IMT (gr1:1.02±0.03mm; gr2: 1.08±0.04mm) were certainly increased in obese patients compared with overweight ones (p<0.01). Prevalence of carotid atherosclerosis was higher in gr2 (79% vs 67%). Endothelium - dependent vasodilatation (EDVD) (gr1:7.6, gr2:4.7, p<0.001). Prevalence of carotid atherosclerosis was higher in obese patients (21,1ml, p<0.048). Linear regression analysis revealed significant associations with arterial stiffness parameters were noted. Light drinkers had significantly lower central and peripheral systolic, and mean arterial BP when compared to non- and moderate drinkers (P<0.05). No significant associations with arterial stiffness parameters were noted. A U-shaped effect of alcohol consumption on both central and peripheral BP was found in FH and controls (197±31, 170±26 mmHg, p<0.01, respectively), but ANG did not affect CAT (peak or ETP). Baseline Light drinkers had significantly lower central and peripheral systolic, and mean arterial BPs when compared to non- and moderate drinkers (P<0.05).

Conclusions: Thus, in obese hypertensive subjects we detected more pronounced and frequent carotid artery affection and endothelial dysfunction comparing with overweight ones. Data of our study demonstrate importance more profound examination of cardiovascular system in obese hypertensive patients with subsequent more aggressive blood pressure and weight reduction.

P4.29
LEFT ATRIAL REMODELLING IS AN EARLY CARDIAC STRUCTURAL CHANGE IN HYPERTEENSION
B. C. Cielcerzyńska 1, J. J. Jaroch 1, E. K. Kruszynska 1, Z. B. Bocigia 1, M. L. R. Leboz-Rudnicka 1, W. R. Rychard 2, J. P. Polanski 1, K. D. Dudek 1, K. L. G. Loboz-Grundzi 1
1Department of Cardiology, T. Marciniak, Wroclaw, Poland
2Health Science Faculty, Medical University, Wroclaw, Poland
3Institute of Machine Design and Operation, Technical University, Wroclaw, Poland
4Outpatient Clinic “Biskupin”, Wroclaw, Poland

Background: The interest in left atrial remodelling (LAR) as a TDC in hypertension (H) has been growing recently. Little is known on the role of atrial stiffness (a.s) in the pathophysiology of AH in H. We hypothesized that LAR precedes LVH and diastolic dysfunction (d.d.) in H and is associated with carotid a.s. independently of other possible confounders.

Methods: 85 patients—45 with H, 31 male and 34 female, mean age 55.9±10.7 years and 20 control matched subjects(C). From echocardiography: left atrial volume normalized to BSA (LA vol/BSA),ellipsoid method, LVMi, RWT, e′/a′ ratio, E/e′ratio were calculated. From carotid arteries ultrasound—IMT and high-resolution echo-tracking method a.s. parameters were evaluated: stiffness index, Ep-elastic modulus, AC-arterial compliance, PWV—peak one pulse wave velocity.

Results: LAVi/BSA was the highest in H with LAVi(24.9±1.6 l) and in H with d.d.(23.5±1.6 l). However, already in H without LVH, LA vol/BSA was significantly higher than in C (21.1±4.9 l, 19±3.4 l, p=0.05) and also in H without d.d. LA vol/BSA was significantly higher than in C (20.5±5.5, 18±3 l, p=0.048). Linear regression analysis revealed the following significant correlations between LA vol/BSA and age (r=0.3, BMI (r=0.38), mean BP (r=0.25), preload (r=0.27), afterload (r=0.24), LVMi (r=0.59), RWT (r=0.23), IVS (r=0.5), PWV (r=0.42), e′ (r=−0.3), E/e′ (r=−0.46), BNP (r=0.73), Ep(r=0.25) and PWVi(r=0.25);p for all <0.05). However in multiple regression analysis the independent determinants were: age, BMI, mean BP, LVMI, LVMi, E/e′ and PWVii.

Conclusion: LAR is one of the earliest cardiac structural changes in H that precedes LVH and d.d. Local PWVii is an independent determinant of LAR beyond:BP components, LVH, d.d. indices. It supports the hypothesis on the contribution of arterial stiffness to LAR.

P4.30
ALCOHOL EXERTS A SHIFTED U-SHAPED EFFECT ON CENTRAL AND PERIPHERAL BLOOD PRESSURE IN YOUNG ADULTS
A. Yu 1, P. Scheffler 1, R. J. Donnan 1, G. Egiziano 1, A. D. Protagorou 2, S. S. Daskalopoulou 1
1McGill University, Montreal, Canada
2National and Kapodistrian University of Athens, Athens, Greece

Consumption of 1-2 alcoholic beverages daily has been associated with a lower risk of cardiovascular disease and all-cause mortality in middle-aged and older adults. Recent studies suggest that central blood pressure (BP) is a better predictor of cardiovascular risk than peripheral BP. However, potential effects of habitual alcohol consumption on central BP particularly in young adults, the primary consumers of alcohol in North America, have yet to be investigated. Therefore, we aimed to study the effect of alcohol consumption on central and peripheral BP, pulse pressure amplification, and arterial stiffness specifically in young adults.

We recruited 130 healthy, non-smoking, non-obese individuals. Using a standardized questionnaire, alcohol consumption (drinks/week) was used to classify participants into non- (.<2), light (2-6), moderate (7-9, men: 7-14), and heavy drinkers (women: >9, men: >14). Central BP and arterial stiffness measurements were obtained using applanation tonometry. We found a U-shaped effect of alcohol consumption on both central and peripheral BP. Light drinkers had significantly lower central and peripheral systolic, and mean arterial BPs when compared to non- and moderate drinkers (P<0.05). No significant associations with arterial stiffness parameters were noted. A U-shaped relationship was found between alcohol consumption and both central and peripheral BP in young individuals, which importantly, was shifted towards lower levels of alcohol consumption than currently suggested. This is the first study, to our knowledge, that examines the effect of alcohol consumption on central BP and arterial stiffness exclusively in young individuals.

Prospective studies are needed to confirm the relationships observed herein.

P4.31
ALTERED THROMBIN GENERATION IN SUBJECTS WITH FAMILIAL HYPERCHOLESTEROLEMIA
M. Ekholm 1, N. H. Wallén 1, G. Jøreskog 2, J. Brinck 3, T. Kahan 1
1Karolinska Institutet, Department of Clinical Sciences, Danderyd Hospital, Division of Cardiovascular Medicine, Stockholm, Sweden
2Karolinska Institutet, Department of Clinical Sciences, Danderyd Hospital, Division of Medicine, Stockholm, Sweden
3Karolinska Institutet, Department of Medicine, Karolinska University Hospital, Huddinge, Stockholm, Sweden

Purpose: The effects of angiotensin II (ANG) on inflammation and haemostasis were examined in 16 otherwise healthy patients with familial hypercholesterolaemia (FH) and in 16 healthy controls.

Methods: Plasma markers of inflammation (CRP, IL-6, fibrinogen, leukocyte counts [Lct]), coagulation (thrombin generation: F1+2, Activated Protein C [APC] resistance), and fibrinolysis (PAI-1 activity) were assessed in conjunction to iv ANG infusion (10 ng/kg/min for 3 h). Means ± SD; repeated measures ANOVA when appropriate.

Results: Baseline systolic blood pressure was higher in FH than in controls (127±14 vs 115±12 mm Hg, p<0.05), while responses to ANG were similar (+24±10 and +21±7 mm Hg). Baseline hs-CRP, IL-6, Lct, and fibrinogen were similar in FH and controls, and all increased similarly in both groups (p<0.05) during ANG. Baseline CAT (peak and ETP) was higher in FH (367±47 vs 317±60 nM, p<0.01, and 2418±391 vs 2042±358 nM/min, p<0.01, respectively), but ANG did not affect CAT (peak or ETP). Baseline Light drinking was similar in FH and controls (191±41 vs 186±81 μM) and unchanged by ANG. Baseline plasmin-antiplasmin complexes were similar in FH and controls (96±16 vs 93±27 μg/L) and increased (p<0.001) similarly by ANG in both groups. PAI-1 activity was similar in both groups at baseline (1.3±1.3 vs 1.1±1.2 ng/L) and decreased (p<0.001) similarly in both groups, confirming the diurnal variation in fibrinolysis.