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### **P4.19: AORTIC STIFFNESS, REFLEXION WAVE AND ARTERIAL HYPERTENSION UNDER ANTI-ANGIOGENIC DRUGS**

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Hemodynamic variables by tertiles of HOMA index*				
Variable	T1 (<0.94) (n=32)	T2 (0.94-1.90) (n=28)	T3 (>1.90) (n=30)	P value
Peripheral SBP (mmHg)	111.7 ± 2.0	114.3 ± 1.8	123.2 ± 2.0	<0.0001
Peripheral DBP (mmHg)	76.8 ± 1.4	79.8 ± 1.3	84.7 ± 1.5	0.001
Peripheral PP (mmHg)	33.5 ± 1.0	35.0 ± 0.9	38.4 ± 1.0	0.004
Central SBP (mmHg)	103.7 ± 1.7	106.7 ± 1.5	115.3 ± 1.6	0.001
Central DBP (mmHg)	77.8 ± 1.5	81.1 ± 1.3	86.1 ± 1.5	0.001
Central PP (mmHg)	25.5 ± 1.5	25.1 ± 1.3	29.2 ± 1.0	0.071
MBP (mmHg)	92.5 ± 1.5	95.7 ± 1.3	102.3 ± 1.5	<0.0001
HR (bpm)	61.3 ± 1.9	65.0 ± 1.7	66.0 ± 1.9	0.212
PWV (m/s)	5.64 ± 0.17	5.71 ± 0.10	6.34 ± 0.9	0.012
Augmentation Index (%)	6.7 ± 3.2	6.1 ± 3.8	6.9 ± 2.2	0.082

\*Values are expressed as means ± SEM

#### P4.17

##### INFLUENCE OF ESTIMATED WALL SHEAR RATE INDICES ON CAROTID ARTERY INTIMA-MEDIA THICKNESS AND INTIMA-MEDIA COMPLEX ECHOGENICITY

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**Introduction:** Grey scale median of the carotid artery intima-media complex (IM-GSM) is a recently introduced measurement to characterise the arterial wall. Wall shear stress is thought to influence intima-media thickness (IMT) and to play a major role in the development of atherosclerosis. However, the relationship between wall shear stress and IM-GSM is not well understood. This study examined the relationship between estimated wall shear rate (WSR) indices and IMT as well as estimated WSR indices and IM-GSM.

**Methods:** Data from 156 middle-aged and older individuals (66.1±9.5yrs, 58F) were included in this analysis. Common carotid artery diameter, IMT, and blood velocity data were obtained using a Doppler ultrasound machine. Three estimates of WSR were calculated: peak, mean and diastolic WSR. IMT and IM-GSM were analyzed using a semi-automated edge-detection programme.

**Results:** IMT was inversely associated with all WSR indices (peak:  $r=-0.16$ , mean:  $r=-0.22$ , diastolic:  $r=-0.25$ , all  $p<0.05$ ). IM-GSM was positively associated with mean ( $r=0.20$ ) and diastolic WSR ( $r=0.17$ , both  $p<0.05$ ). Peak and mean WSR were independent determinants of IMT, and mean and diastolic WSR were independent determinants of IM-GSM after adjustments for age, sex and traditional cardiovascular risk factors.

**Conclusion:** These results show that estimated WSR indices were associated with IMT and IM-GSM, suggesting that WSR may, in part, determine the extent of IMT and the composition of the arterial wall in our cohort.

#### P4.18

##### OSTEOPROTEGERIN AND ARTERIAL STIFFNESS IN POSTMENOPAUSAL WOMEN

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**Background:** Many recent data support the hypothesis that circulating osteoprotegerin (OPT) levels are associated with arterial calcification and may serve as a potential predictor of cardiovascular disease and mortality. Matrix Gla Protein (MGP) is considered an inhibitor of vascular calcification. However, the role of these molecules in the arterial wall is still unclear. Arterial stiffness increases in postmenopausal women. The aim of our study was to determine the relation between circulating OPT and MPG and vascular parameters of arterial stiffness in postmenopausal women.

**Materials and Methods:** One hundred forty-four postmenopausal women, aged (61.4±10.6 years) were included in the study. PWV was measured using an oscillometric device. OPT, MGP, C-reactive protein and parameters of lipid and glucose metabolism were also determined.

**Results:** OPT correlated with aortic PWV ( $r=0.32$ ,  $p=0.006$ ), and C-reactive protein ( $r=0.37$ ,  $p=0.02$ ). In multiple regression models, after adjustment for potential confounders, OPT was independently associated with aortic PWV. No correlation was found between MGP and aortic PWV. There were 61% hypertensives, 34% patients with diabetes, 35.4% with hyperlipemia and 41.6% with obesity or overweight, in this study.

**Conclusions:** These results support the relationship between serum OPT and arterial stiffness in postmenopausal women, independent of the traditional cardiovascular risk factors and inflammation. At the same time, MGP was not found to be a predictor of arterial stiffness.

#### P4.19

##### AORTIC STIFFNESS, REFLEXION WAVE AND ARTERIAL HYPERTENSION UNDER ANTI-ANGIOGENIC DRUGS

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**Objective:** Sorafenib and Sunitinib are anti-angiogenic drugs (AAD) used in an increasing number of cancers. The most common side effect is arterial hypertension. We hypothesize that AAD lead to an early damage of large arteries which can be translated by an increase of aortic stiffness determined by the pulse wave velocity measurement (PWV).

**Material and Method:** In a longitudinal study, 32 patients have been treated with Sorafenib or Sunitinib. Subjects have been explored during a visit before the introduction of the treatment and then every two weeks for 2 months. Measured parameters are blood pressure, PWV, central pressure, augmentation index (Alx).

**Results:** 38% of the subjects have developed an early arterial hypertension requiring anti-hypertensive treatment. The initial values of brachial SBP was predictive from SBP changes under AAD while PWV and Alx was not. Furthermore, in patients who developed hypertension and required treatment with 5 to 10 mg amlodipine has been effective at decreasing SBP and MBP by -13 [-21;-4] et -8 [-14;-1] mmHg ( $p<0.01$ ) respectively, and Alx, -10% [-16;-4] ( $p<0.001$ ).

**Conclusion:** This study suggests that blood pressure at inclusion increases the risk of developing acute hypertension with AAD. It also shows that effective vasodilatation could be achieved despite small vessels disruption by AAD.

#### P4.20

##### ASSOCIATION OF A SINGLE NUCLEOTIDE POLYMORPHISM IN CYP2C8 WITH MYOCARDIAL INFARCTION IN BULGARIAN POPULATION

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Cytochrome P450 2C8 is a polymorphic enzyme responsible for the biosynthesis of vasoactive substances from arachidonic acid. Inter-individual differences in the action of these substances might be important in the pathogenesis of cardiovascular diseases such as acute myocardial infarction (AMI).

In the present study we analyzed the association of a genetic variant in CYP2C8 and the morbidity of AMI in Bulgarian population.

The study included 99 AMI patients and 370 control subjects. To determine the genotypes of the samples real time PCR with predesigned TaqMan SNP Genotyping Assays (Applied Biosystem) was used.