Design and method: Myocardial tissue probes derive from the right auricle of patients undergoing cardiac surgery. A small part of the right auricle is removed when the heart is put on extra-corporal circulation. This sample is then be placed in cooled Tyrode solution and hypoxia is brought about by switching 100% oxygen to 100% nitrogen (hypoxia) in one of the two chambers. By doing so, we are able to compare ischemic and non-ischemic tissue of the same patient. Snap frozen samples are stored at –70°C until RNA isolation. Quality of isolated RNA is analysed by Agilent's Bioanalyzer 2100 system. Arrays are scanned with the AB1700 Chemiluminescence Array Reader and images, data are processed by PANTHER software.

Results: After 30 minutes of myocardial hypoxia we find that gene expression related to T-cell immunity is more than two-fold up-regulated compared to normoxic controls (25 of 185, 10,4 expected; $P < 0.00008$). In contrast, when 22,47 mmol nebivolol has been added to the solution, gene expression related to T-cell mediated immunity is significantly down-regulated (21 down of 249, 7.3 expected; $P < 0.0001$). Conversely, 15 of 21 genes down-regulated by nebivolol during experimental hypoxia have been neither up- nor down-regulated in the presence of an equipotent dose of atenolol during experimental hypoxia. Our observations are in accordance with published data indicating that nebivolol reduced the expression of pro-inflammatory genes in endothelial and vascular smooth muscle cells.

Conclusions: Nebivolol, not atenolol inhibits the expression of T-cell immunity related genes during experimental hypoxia. In the light of recent publications on modulating inflammation by pleiotropic effects of cardiovascular drugs, the specific property of T-cell modulation by the antihypertensive drug nebivolol in myocardial ischemia may warrant further attention.

PP.20.05 THE EFFECT OF PROSTAGLANDIN E1 ANALOGUE TREATMENT ON MORTALITY AND AMPUTATION RATE IN PATIENTS WITH CRITICAL LIMB ISCHEMIA

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Objective: Peripheral arterial disease in advanced stages has severe disabling complications. Major amputations and high-mortality rates are common in patients with critical limb ischemia (CLI). The main option of CLI treatment is revascularization (endovascular, open surgery or hybrid). Patients with CLI and lacking option for revascularization have worse prognosis. The purpose of this retrospective study was to investigate the impact of including prostaglandins in the treatment of patients with CLI lacking the possibility of revascularization.

Design and method: This retrospective study cohort includes 67 patients (34 male and 33 female), mean age 71 ± 10.7 years treated for CLI not suitable for revascularization. 13 patients had rest pain and 54 ischemic ulcers or frank gangrene. Mean ankle/brachial pressure index was 0.6. Medial arterial calcification was present in 6 patients (8.9 %). Diabetes mellitus type 2 had 37 patients (55.2 %). Prostaglandin E1 (alprostadil) was applied by intravenous perfusion with doses of 40 mg twice a day for 2 weeks.

Results: 23 patients (34.3 %) underwent amputation - 17 minor and 6 high, and 27 patients (40.3 %) died during the total follow-up period (01/2009 - 07/2014). Mortality rate was higher in patients who have undergone an amputation, in diabetics and in patients without statin medication.

Conclusions: Our results confirm that therapeutic strategies using prostaglandin treatment in patiíents with CLI lacking option for revascularization do not affect the overal high mortality. Patients with a history of diabetes mellitus, amputation of lower limb and without statin treatment have higher mortality rate. We have confirmed that statin therapy seems to be a protective factor for patients with critical limb ischemia.

PP.20.06 MONOCYTE COUNTS RELATES WITH SYSTOLIC BLOOD PRESSURE AND PULSE PRESSURE

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Objective: Leucocyte count has been proposed as a marker for predicting cardiovascular risk and appearance of metabolic syndrome. However, few prospective studies have evaluated the relationship between these cells and earlier, subclinical, stages of disease. The aim of this study is to evaluate de relation between monocytes counts and blood pressure (BP).

Design and method: We performed a cross-sectional study. We included 396 subjects evaluated in Salamanca for baseline visit of Triple A study. They had a mean age of 57.2 ± 11,9 years; 57.3 % were women. Measurements: habits and medication, anthropometric measurements, systolic and diastolic BP, pulse pressure (PP), mean BP, fasting glucose, glycosylated haemoglobin, lipid profile and white blood cell counts. Participants were categorized by monocyte count terciles.

Results: The mean absolute monocyte count was 0.50 ± 0.17 x 109/L. In this population 249 (62.9%) had hypertension The mean blood pressure values were: systolic BP 127.5 ± 18.8 mmHg; diastolic BP 78.2 ± 11.1 mmHg; mean BP 94.6 ± 12.3 mmHg; PP 49.3 ± 14.7 mmHg. The mean values of this variables are more elevated in higher monocytes counts (when divided in terciles). In linear multiple regression, monocytes maintain a positive association with systolic BP (beta = 13.8, CI 95% 5.5–22.1) and PP (beta = 15.7, CI 95% 8.3–2) when adjusted for age, sex, dyslipidaemia, diabetes mellitus type 2, smoking, obesity, hypertension, and medication: antihypertensive, antidiabetic, and lipid lowering drugs.

Conclusions: Monocyte count have a positive association with systolic blood pressure and pulse pressure values, independently of cardiovascular risk factors and medication.

PP.20.10 ENDOTHELIAL DYSFUNCTION AND VASCULAR REMODELING IN PATIENTS WITH ESSENTIAL ARTERIAL HYPERTENSION

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Objective: To investigate the morðhofunctional parameters of macro- and microvessels in patients with essential arterial hypertension

Design and method: 30 patients (11 men, 19 women) with essential arterial hypertension were enrolled, mean age was 57,2 ± 10,5 years with mean body mass index 28,6 ± 3,2 kg/m^2., mean level of fasting glucose was 5,2 (4,8;5,5) mmol/l. All patients were investigated according to standard cardiac algorithm and underwent assessment of endothelial function using photopletismography (PPG) (Angioscan-01, Angioscan, Russia) at rest and after reactive hyperemia test. Phase shear (PS), occlusion index (OI) were estimated as marker of endothelial dysfunction, meanwhile, stiffness index SI) as well as reflection index (RI) were markers of middle vessels and micro vessels' remodeling. Functional and structural condition of finger skin capillary network was studied with video capillaroscopy (Capillaroscan-1, New energetic technologies, Russia). Structurals parametres were identified as skin capillary network density at rest and after venous occlusion test. Moreover patients were investigated with applanation tonometry- Central aortic blood pressure (CASP) was measured.

Results: We noted endothelial dysfunction of macrovessels (decrease of phase shear (PS) in combination with normal level of stiffness index (SI)) and of middle caliber arteries and microcirculatory vascular bed (MCVB) (decrease of occlusion index at the level of MCVB in combination with decreasing of skin capillary network density at rest and after tests with reactive hyperemia and venous occlusion and normal level of reflection index (RI)) in compare with healthy controls. Also patients with essential arterial hypertension had increased CASP in compare with normal range.

Conclusions: Patients with essential arterial hypertension without obesity and diabetes mellitus had endothelial dysfunction of arterial vessels (from macro- to microvessels) as well as microcirculatory vascular remodeling. Our research confirmed CASP is integrative parameter that reflects endothelial dysfunction and remodeling processes of different levels of arterial bed.

PP.20.12 NEW INFLAMMATORY MARKER YKL-40 IS ASSOCIATED WITH EARLY RENAL FUNCTION DECLINE IN HYPERTENSIVE PATIENTS WITH CONCOMITANT CORONARY ARTERY DISEASE AND TYPE 2 DIABETES MELLITUS

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Objective: A new inflammatory marker YKL-40 is increased in patients (pts) with hypertension (HT), coronary artery disease (CAD) and diabetes mellitus (DM) and is associated with cardiovascular and all-cause mortality. The aim of our study was to investigate the level of YKL-40 in pts with HT and CAD with and without T2D.

Design and method: We enrolled in our study pts aged 40–80 years with documented HT and stable CAD with T2D or without T2D or impaired glucose tolerance. We excluded pts with glomerular filtration rate (GFR) < 60 ml/min/1,73 m^2,