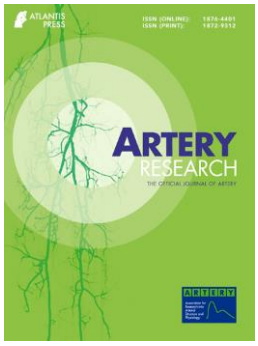

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P7.08: PRECLINICAL MARKERS OF CAROTID ATHEROSCLEROSIS AND CARDIOVASCULAR RISK ASSESSED BY THE ESH/ESC SCALE (2003, 2007)

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P7.05
DETERMINATION OF THE BEST ANKLE BRACHIAL INDEX THRESHOLD VALUES FOR THE ROUTINE DETECTION OF A SIGNIFICANT LOWER LIMB ARTERIAL STENOSIS USING AN AUTOMATED DEVICE

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Objectives: To assess the prevalence of significant lower limb arterial stenosis in a population of patients with an increased cardiovascular risk and to determine the best ankle brachial index (ABI) threshold value for its detection.
Methods: In patients with treated hypertension and/or another cardiovascular risk factor (dyslipidemia, current smoking, diabetes), ABI was measured using an automated oscillometric device with 2 synchronized cuffs (SCVL®, Genov, Paris). The presence of atherosclerotic plaques was assessed independently by a Doppler/ultrasound exam.
Results: We included 201 patients. Fifty two percent were men, of 58 ±13.4 years old. Fifty 6 percent were treated for hypertension, 23% for diabetes and 72% had dyslipidemia. There was 21 % of current smokers and 33% of previous smokers. A clinical peripheral arterial disease (PAD) was noted in 7 % of the patients and the presence of a femoral stenosis > 50% in 7.7%. The prevalence of an ABI < 0.9 was 19.7% and 16.6% for an ABI <0.85. The ABI performance to detect a significant femoral plaque or a clinical PAD is detailed in the table. The best predictors of the presence a PAD or a significant plaque are one of the 3 following ABI values : <0.85 or >1.30 or missing signal. **Conclusion:** In our population, the prevalence of a significant inferior limb stenosis was 7.7%. The ABI was easily and quickly measured by the automated device. Our study attests the feasibility of this approach to detect PAD and arterial stenosis in daily practice in this population.

	Sensibility (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
ABI < 0.9	83.3	84.5	26.3	98.7
ABI <0.9 or >1.3 or missing signal	93.3	83.4	31.8	99.3
ABI <0.85	83.3	87.8	31.3	98.8
ABI <0.85 or >1.35 or missing signal	93.3	87.3	37.8	99.4

P7.06
GENDER DIFFERENCE IN CARDIOVASCULAR RISK: ROLE OF BLOOD PRESSURE AMPLIFICATION

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Carotid (C) pulse pressure (PP) is constantly lower than brachial (B) PP, but is a more powerful predictor of CV risk than B-PP. The C/B-PP ratio is marker of PP amplification. The objective was to explore whether the role of C/B-PP ratio for all-cause and CV mortality is different between men and women.
Population was composed of 72,437 men (41.0±11.1 years) and 52,714 women (39.5±11.6 years) with similar mean arterial pressure. C-PP was calculated in both genders from a validated equation. The hazard ratios (HR, 95% CI) associated with C/B ratio for all-cause and cardiovascular (CV) mortality were calculated with Cox regression models according to age and gender. The age threshold of 55 years was chosen to study the role of menopause. During a 12-year follow-up, 3028 men and 969 women died.
The adjusted risk (HR) associated with C/B ratio for all-cause mortality was 1.51 (1.47-1.56) in men and 2.46 (2.27-2.67) ($p<0.0001$) in women; for CV mortality it was 1.81 (1.70-1.93) and 4.46 (3.66-5.45) ($p<0.0001$), respectively. The difference between genders for CV mortality increased after 55 years of age, from 1.44 (1.31-1.58) for men vs 3.19 (2.08-4.89) for women <55 years, to 1.65 (1.48-1.84) for men vs 5.60 (4.17-7.50) for women ≥55 years. Over 55 years, impact of C/B ratio was highly significant in men and women ($p<0.0001$).
C/B-PP amplification is highly predictive of differences in CV risk between men and women. Among women, after menopause, the attenuation of amplification associated with aortic stiffness strongly contributes to increasing cardiovascular risk.

P7.07
BLOOD PRESSURE CONTROL AND EARLY COGNITIVE IMPAIRMENT SCREENING

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Purpose: The purpose of this study is to find whether achieving optimal blood pressure (BP) control could prevent mild cognitive impairment (MCI), and whether we should conduct MCI screening routinely in patients (Pts) with hypertension (HT).
Methods: 51(34.5%) males and 97(65.5%) females - a total of 148 Pts with mean age 64.16±11.18 years and mean HT history 13.1±11.05 years were examined. Neuropsychological profile was assessed with Mini-Mental State Examination (MMSE) and Montreal Cognitive assessment (MoCA). Ambulatory blood pressure monitoring (ABPM) and Self measured blood pressure (SMBP) were conducted according to the ESC/ESH recommendations.
Results: 76(51.35%) Pts with HT treatment were with suboptimal BP control during the day and 83(55.4%) - during the night. Mann-Whitney test was used to find: significant ($p<0.05$) difference in the mean values of MMSE and MoCA between the groups with optimal and suboptimal SMBP; some of the ABPM values between Pts with MCI and without. Regression analysis showed that there is significant ($p<0.05$) correlation between neuropsychological tests' results and some BP variables: MMSE - night systolic ($r=0.274$), mean ($r=0.193$) and pulse pressure (PP) ($r=0.281$); day systolic ($r=0.179$) and PP ($r=0.313$); systolic ($r=0.209$) and PP SMBP ($r=0.212$). MoCA with night systolic ($r=0.168$) and PP ($r=0.210$); systolic ($r=0.238$) and PP SMBP ($r=0.217$).
Conclusions: Despite treatment opportunities and early detection of HT a significant percent of Pts with HT have poor BP control (assessed by SMBP or ABPM). They remain at risk for MCI. Screening neuropsychological tests should be performed in all Pts with HT and suboptimal BP control.

P7.08
PRECLINICAL MARKERS OF CAROTID ATHEROSCLEROSIS AND CARDIOVASCULAR RISK ASSESSED BY THE ESH/ESC SCALE (2003, 2007)

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Objective: The SCORE scale is applied to assess the total cardiovascular risk. Risk stratification system of Recommendations (ESH)/(ESC) (2003, 2007) unlike the SCORE scale allows to give a more accurate assessment of the risk range with using results of tool methods of investigation.
Aim: To assess the degree of cardiovascular (CV) risk adjustment in patients with low and moderate risk by the SCORE scale, who were further examined in accordance with the ESH/ESC scale (2003,2007), and also underwent carotid duplex ultrasound studies.
Material and methods: 600 patients with low and moderate cardiovascular risk by the "SCORE" scale were selected: 445 women and 155 men in the age 30-65y. We used duplex ultrasound imaging of carotid arteries.
Results: Risk stratification has been accomplished according to the scale of ESH/ESC (2003, 2007) Recommendations and applying the data of the carotid duplex ultrasound imaging. Among 600 patients only 35% patients were remained in the low risk group, 33% patients in the moderate risk group and 31% patients were converted into the high risk group. The reason for

moving the patients to the high risk group was detection of carotid artery plagues (100%). The contribution of ultrasound parameters to risk stratification has been compared: plagues were detected in 59% patients, IMT >0,9 mm was found in 5%. Moreover, the IMT >0,9 mm occurred only in 7% patients with plagues and only 0,8% without plagues.
Conclusion: The assessment of CV risk should include carotid duplex ultrasound studies to reveal plagues. The level of CV risk was affected by carotid plagues presence to substantially greater extent than by IMT.

P7.09
PULSE WAVE ANALYSIS REVEALS THAT MYOCARDIAL ISCHAEMIA IS NOT LIKELY TO EXPLAIN THE 'J-CURVE' ASSOCIATION BETWEEN DIASTOLIC BLOOD PRESSURE AND MORTALITY

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Background: There is a well-established 'J-curve' relationship between brachial DBP and mortality. A purported, although unconfirmed mechanism for the "J-curve" is reduced myocardial perfusion due to low DBP. However, we hypothesised this would be unlikely because DBP may be a poor marker of myocardial perfusion. This study aimed to determine the relationship between DBP and subendocardial perfusion in patients with and without coronary artery disease (CAD).
Methods: 134 patients with CAD (aged 76±7 years; 69% male) and 134 matched healthy controls (HC) (aged 77±2 years; 69% male) underwent measurement of brachial DBP and radial tonometry to derive subendocardial viability ratio (SEVR), a marker of subendocardial perfusion. These measures were additionally undertaken in 47 patients (aged 63±10 years) at baseline and during peak dobutamine stress echocardiography in presence or absence of myocardial ischaemia.
Results: There was no difference in DBP or SEVR between HC and CAD patients ($P>0.05$), nor was there a difference in SEVR across quartiles of DBP in CAD ($P=0.07$) or HC ($P=0.14$) patients. Associations between DBP and SEVR in HC ($r=0.185$, $P=0.03$) and CAD patients ($r=0.204$, $P=0.02$) were non significant after adjustment for age and height ($p=0.07$ and $p=0.11$, respectively). At peak dobutamine stress, SEVR was significantly reduced in patients with ischaemia versus those without inducible ischaemia (84±17 vs. 101±22 mmHg.s.min^{-1}, $P=0.01$). However, DBP was not significantly different (65±14 vs. 67±15 mmHg, $P=0.32$).
Conclusion: Brachial DBP is a poor marker of subendocardial perfusion, suggesting the 'J-curve' relationship between DBP and mortality is unlikely attributable to reduced myocardial perfusion.

P7.10
RENAL FUNCTION DOES NOT MODIFY PREDICTIVE VALUE OF CENTRAL PULSE PRESSURE AND PULSATILITY IN PATIENTS WITH CAD

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Background: The differences between central and peripheral blood pressure (BP) values have been known for decades. Although the predictive value of central BP in coronary patients with impaired renal function has not been studied so far. Therefore, the aim of the study was to assess the influence of renal function on the predictive value of ascending aortic pulse pressure (PP) and pulsatility (the ratio of PP to mean BP) in patients with coronary artery disease.
Methods: The study group consisted of 755 patients (214 women and 545 men; mean age: 57.7±10.0 years) with preserved left ventricular function (EF>40%) undergoing coronary angiography. Demographic and clinical information as well as invasive ascending aortic BP were obtained at baseline. The follow-up was 53.1±18.7 months. The primary end point was: cardiovascular death, myocardial infarction, stroke, cardiac arrest or myocardial revascularization. The Cox proportional hazard regression analysis was used to assess the relation between BP and primary end point.
Results: The primary end point occurred in 152 (20.1%) patients whereas CV death, myocardial infarction (MI) or stroke in 79 (10.5%) subjects. Both ascending aortic PP (increase per 10 mmHg: HR 1.12 [95% CI 1.01-1.24]) and pulsatility (increase per 0.1: 1.18 [1.04-1.34]) predicted the risk of primary end point as well as of CV death, MI, or stroke (1.14 [1.00-1.33] and 1.30 [1.10-1.54], resp.). HRs according to the stage of chronic renal disease are presented in the table.
Conclusion: Renal function does not modify predictive value of central pulse pressure and pulsatility in patients with CAD.

	GFR<60 ml/min/1.73m2	GFR 60-90 ml/min/1.73m2	GFR≥90 ml/min/1.73m2	P for interaction
Primary end point				
Central PP	1.09	1.19	1.09	NS
Central pulsatility	1.07	1.30	1.12	NS
CV death, MI or stroke				
Central PP	1.11	1.11	1.24	NS
Central pulsatility	1.37	1.32	1.32	NS

Values are hazard ratios for 10 mmHg increase in PP and 0.1 in pulsatility

P7.11
NORMAL VALUES OF PULSE WAVE VELOCITY AND AUGMENTATION INDEX AMONG OMANI VOLUNTEERS; PRELIMINARY REPORT

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Background: Stiffness of large arteries has been found to be an independent predictor of adverse cardiovascular events in the general population, in patients with essential hypertension, diabetes mellitus and end-stage renal disease. Of the several indices used to reflect arterial stiffness, aortic pulse wave velocity (AoPWV) is considered to be the gold standard. Determining the normal distribution of AoPWV and AIx of a population is important to apply them clinically. This study therefore aims at determining normal values for arterial stiffness indices in normal Omani subjects.
Method: Augmentation index (AIx) and aortic pulse wave velocity (AoPWV) were measured using applanation tonometry (SphygmoCor®; Atcor medical) in 43 (23 women and 20 men) healthy Omani volunteers.
Result: The mean age of women was 30 ± 9 years and for men was 36 ± 6 years. Reference values were estimated using 97.5 and 2.5 percentiles. The estimated values for AIx corrected for heart rate was -16 to 38 in women and 0 to 26 in men. The AoPWV were 4.6 to 7.1 m/s and 5.2 to 9.6 m/s in women and in men respectively. Men had significantly higher AoPWV compared to women (6.9 ± 0.9 Vs 5.7 ± 0.7, P = 0.001) but there was no significant gender difference in the AIx (11.1 ± 12.2 Vs 10.1 ± 8.3, P = 0.77).
Conclusion: Preliminary data of this study show that men had significantly higher AoPWV than women with no gender difference in the AIx. Recruitment of more subjects is needed to confirm the above findings.

P7.12
CENTRAL HAEMODYNAMICS COULD EXPLAIN THE INVERSE ASSOCIATION BETWEEN HEIGHT AND CARDIOVASCULAR MORTALITY

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Introduction: Mechanisms underlying the inverse relationship between height and cardiovascular mortality are unknown, but could be related to central haemodynamics. This study aimed to determine the relation of height to central and peripheral haemodynamics.
Methods: Study population comprised 1161 randomly selected community-dwelling adults (aged 67.7±12.3; 48% male). Brachial BP was recorded by