# P10.14: AORTIC PULSE WAVE VELOCITY IS AN INDEPENDENT CARDIOVASCULAR EVENT PREDICTOR IN HIGH CARDIOMETABOLIC RISK GROUP

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**Conclusions:** The presence of more classical RFs is associated with accelerated progression of vascular aging.

## P10.11
### MEAN ARTERIAL PRESSURE IS A STRONGER PREDICTOR OF STROKE IN SOUTH ASIAN THAN EUROPEAN MEN, INDEPENDENT OF OTHER CARDIOMETABOLIC RISK FACTORS; THE SABRE STUDY

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**Background:** Stroke risk is greater in South Asians than Europeans. We sought to compare associations between blood pressure (BP) and stroke by ethnicity and determine how BP contributes to ethnic differences in disease.
**Methods:** Population sample of 1510 European and 1195 South Asian men recruited between 1988-1991, mean age $52\pm7$yrs. Incident fatal and non-fatal strokes were captured over 20 years of follow-up. Cox models demonstrated associations between mean arterial BP (MAP) and stroke.
**Results:** South Asians had more incident strokes than Europeans (5.6 (4.7,6.7) versus 4.7 (4.0,5.6) per 1000 person years, age-adjusted hazard ratio:1.40 (1.08,1.76), p=0.01) and higher MAPs than Europeans ($97\pm12$ versus $93\pm12$mmHg, p<0.0001).
MAP was more strongly associated with stroke in South Asians than Europeans, (HR (95% CI): 1.59(1.35,1.86) versus 1.19(1.00,1.43) respectively, ethnicity interaction p=0.03), even accounting for receipt of anti-hypertensive medication (1.57(1.32,1.86 versus 1.10(0.91,1.32), interaction p=0.03). The ethnic difference in impact of MAP diminished after further adjustment for smoking, waist circumference, HDL, fasting glucose, HOMA2-IR, $HbA_{1c}$ and heart rate (1.40(1.12,1.75) versus 1.15(0.92,1.42), interaction p=0.24). However, the greater effect of MAP on stroke in South Asians persisted when this latter model was restricted to people not receiving anti-hypertensive medications, (1.57(1.26,1.96) versus 1.08(0.85,1.37), interaction p=0.02).
Adjustment for MAP could not account for the excess stroke risk in South Asians (1.27 (1.00, 1.62) p=0.05), nor could other risk factors.
**Conclusions:** MAP had a greater impact on stroke risk in South Asians than Europeans, but could not account for their excess stroke risk, alone or in conjunction with additional risk factors.

## P10.12
### AORTIC STIFFNESS IS AN INDEPENDENT DETERMINANT OF LEFT VENTRICULAR DIASTOLIC DYSFUNCTION IN METABOLIC SYNDROME PATIENTS

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**Aim:** Of this study was to evaluate the relationship of arterial stiffness and left ventricular diastolic dysfunction(LVDD) in metabolic syndrome(MetS) patients.
**Methods**: A cross-sectional study was carried among 1208 MetS subjects (aged $54\pm6$, 65% women, 92% hypertensive). According to the heart ultrasound findings, patients were divided into three groups: with relaxation abnormalities (GR1, n=406, LV end-*diastolic diameter(LVdd)* $5.02\pm0.49$cm), with pseudonormalisation (GR2, n=713, LVdd $5.09\pm0.5$cm) and without LVDD (LVDD-, n=89, LVdd $4.95\pm0.43$cm). Arterial stiffness parameters (carotid to femoral pulse wave velocity (cfPW) and aortic augmentation index (AIxHR75) were assessed by applanation tonometry.
**Results:** In comparison to LVDD- patients, LVDD+ patients were older ($55\pm6$vs $51\pm6$), had higher cfPWV (GR1 $8.9\pm1.66$, GR2 $8.77\pm1.57$vs $7.9\pm1.34$m/s), AIxHR75 (GR1 $25.5\pm10.42$; GR2 $24.7\pm10.2$vs $19,7\pm10$), mean arterial pressure(MAP) (GR1 $108\pm12.7$; GR2 $107.6\pm12.2$vs $101\pm10$mmHg), mean carotid intima-media thickness(IMTmean) (GR1 $0,651\pm0,098$; GR2 $0,656\pm0,107$vs. $0,619\pm0.09$mm), heart rate (LVDD+ $66\pm10$vs. $61\pm9$bpm), left ventricular mass index(LVMI) (LVDD+ $109\pm24$vs. $97,1\pm22$g/m$^2$), body mass index(BMI) (LVDD+ $32\pm5$vs $30\pm4$ kg/m$^2$, all p<0.05).
We found significant correlations between arterial stiffness and diastolic function parameters, such as ratio of early to late transmitral pulse Doppler velocities(E/A) (rcfPWV=-0.19, rAIxHR75=-0.15, p<0.05), early diastolic

mitral annular velocity(E') (rcfPWV=-0.25, rAIxHR75=-0.18, p<0.05), and E/E' ratio (rcfPWV=0.17, rAIxHR75=0.14, p<0.05). In multiple regression analysis, gender, MAP, LVMI, heart rate and cfPWV remained significant determinants of E/E'parameter, explaining 18% of its variability(p<0.05).
**Conclusion**: Carotid to femoral pulse wave velocity, an index of aortic stiffness, is a significant and independent determinant of the LVDD in subjects with metabolic syndrome.

## P10.13

### WITHDRAWN

## P10.14
### AORTIC PULSE WAVE VELOCITY IS AN INDEPENDENT CARDIOVASCULAR EVENT PREDICTOR IN HIGH CARDIOMETABOLIC RISK GROUP

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**Aims**: The aim was to assess if arterial stiffness, indexed as aortic pulse wave velocity (PWV), is a viable CVD risk prediction variable in high cardiometabolic risk population.
**Methods and results**: We studied 4259 high-risk patients ( 36.2% male), on average having $3,49\pm1,05$ metabolic syndrome components(18% having 5), as per NCEP ATPIII criteria. Starting from 2007, patients were observed and investigated in a single specialized cardiology center. The outcome follow-up was performed using national death registry and national healthcare fund database. CVD events during the follow-up included fatal or non-fatal myocardial infarction (MI) or stroke. Mean age of the study population was $54,13\pm6,23$ with no significant difference between the event free group(EFG) vs. the event group(EG) with at least one CVD event(n= 129) during the follow-up, which was $1389,3\pm625,73$ days. Comparing the two groups, aortic PWV was $8,8\pm1,6$(EFG) vs. $9,41\pm2$(EG), p<0.001, mean aortic pulse pressure(Ao_PP)$43,28\pm11,02$(EFG) vs. $46,25\pm12,32$(EG), p=0.003, mean aortic blood pressure(MeanBP_Ao) $106,69\pm12,45$(EFG) vs. $111,07\pm16,6$(EG), p<0.001.
In logistic regression model, aortic PWV remained a strong independent CVD event predictor. Odds ratio (OR) for CV event is 1.387(95% CI 1,182; 1,627, p<0,001). Comparing cumulative proportion survival rate between the 3rd vs. 1st tertile(PWV <8m/s vs. PWV >=9.3m/s) of aortic PWV the OR for CVD event was 1,748 (95% CI 1,135; 2,691, p=0,011).
**Conclusion:** Aortic PWV remained a strong CVD event predictor in univariate as well as multivariate stepwise logistic regression models. Survival analysis confirmed it as a viable CVD prediction indicator, to be considered including it into widely used CVD risk assessment tools, especially for high CVD risk group.

## P10.15
### THE RELATION BETWEEN HYPERTENSION AND DIFFERENT DEMOGRAPHIC DATA AMONG HYPERTENSIVE SUDANESE PATIENTS

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According WHO data April 2011Hypertension Deaths in Sudan reached12,281of total deaths. The age adjusted Death Rate is 67.67per100,000of population and ranks Sudan#17 in the world.
**Objective:** aimed to detect the relation between hypertension and certain demographic data in Sudanese hypertensive patients.
**Method:** Data was collected from222 hypertensive patients via structured questionnaire and analyzed using SPSS.
**Results:** males are more than females(males 66.2% ).The most affected age group was 41- 60(61.1%). The most affected geographical area North(62.3%) followed by the East(23.9%), and the least affected region was found to be the South(6.6 %). Married subjects were more than singles( 89.2%)of the total study population, study doesn't denote whether the diagnosis of hypertension was made before or after marriage. 93.2% of the study sample lived with their families. The study revealed that only 71.6%of the study sample had good compliance to treatment, patients with negative family history (who constituted 28.4%)showed better compliance to treatment and scheduled follow up visits(78.04%of the patients with negative family history) than those with positive family history where 67.8% of them showed better compliance. The study shows