titrypsin deficiency] liver disease and excess alcohol consumption evaluated by a questionnaire [cut-off >20g/d]) was fulfilled. The FRS (aims to estimate the ten-year risk of developing coronary heart disease) and HS (aims to estimate ten-year risk of fatal cardiovascular disease) were calculated for each subject, as were NAFLD Fibrosis Score (NFS) and Fibrosis 4 Score (Fib4). Subsequently, NFS, Fib4, FRS and HS were correlated.
Results: Of 2138 subjects, 829 (38.7%) had NAFLD. Patients with NAFLD had a significantly higher cardiovascular risk: FRS: no NAFLD: 5.5±5.2%; NAFLD: 8.8±6.5% ($p<0.001$); HS: no NAFLD: 2.9±3.8%; NAFLD: 3.7±4.1% ($p=0.002$). Patients with NAFLD were grouped into three groups according their NFS: F0-F2 (n=663); indifferent (n=155); F3-F4 (n=11). In patients with F0-F2 according to NFS, FRS was 8.0±6.1%; with indifferent NFS, 10.8±6.4%; and in F3-F4 (NFS): 11.5±5.2%, respectively. HS showed a similar pattern: F0-F2 (NFS): 3.0±3.4%; with indifferent NFS, 5.4±4.5%, and in F3-F4 (NFS): 7.0±5.7%, respectively. NFS correlated significantly with FRS ($r=0.18$, $p<0.001$) and HS ($r=0.27$, $p<0.001$). Likewise, patients with NAFLD were grouped into three groups according to their Fib4: F0-F1 (n=589); indifferent Fib4 (n=411); F3-F4 (n=58). In patients with F0-F1 according to Fib4, FRS was 7.3±5.8%; with indifferent Fib4, 11.1±6.7%; and in F3-F4 (Fib4): 11.1±6.9% respectively. HS did not change with respect to Fib4 estimated degree of fibrosis: F0-F1 (Fib4), 3.2±3.6%; with indifferent Fib4, 3.3±3.8%, and in F3-F4 (Fib4): 2.9±3.9%, respectively. Fib4 correlated with FRS ($r=0.25$, $p<0.001$), but not with HS ($r=0.02$, $p=0.55$).
Conclusions: In this large asymptomatic screening cohort, subjects with non-invasive indicators of advanced stages of NAFLD had an increased risk of coronary heart disease and cardiovascular outcomes. A multidisciplinary approach including hepatologists and cardiologists is important to ensure optimal care for these patients at high risk of CVD and liver-related endpoints.

P1553
PROCAM vs. SCORE: 10 years after

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Purpose: To compare SCORE and PROCAM risk scores and evaluate the correlation between markers of subclinical cardiovascular injury with the occurrence of clinically diagnosed heart disease.
Methods: Ten years ago, we screened 190 apparently healthy subjects through a cardiovascular primary prevention program for risk factors and we measured brachial artery Flow Mediated Dilatation (FMD), carotid artery Intima Media Thickness (IMT), left ventricular mass indexed to BSA (LVMI), E wave deceleration time (EDT), isovolumetric relaxation time (IVRT) and myocardial performance index (Tei). During the 10 years follow-up we registered the occurrence of newly diagnosed cardiovascular disease and we recorded 13 cases as follows: 8 coronary artery disease (stable or unstable), 1 peripheral artery disease, 2 heart failure diagnosis, 2 strokes. Accordingly, we divided the study population in 2 subgroups – those with established cardiovascular disease at 10 years - CVD(+) after initial evaluation and those without it CVD(–) and compared the risk factors, the risk scores (operating with SCORE HIGH and PROCAM standards) and the presence of subclinical disease at initial evaluation.
Results: Age (51.15±10.96 vs. 45.21±8.43 years, $p=0.017$), systolic blood pressure (145.01±27.87 vs. 128.55±18.33 mmHg, $p=0.002$), pulse pressure (64.03±21.29 vs. 48.61±11.04 mmHg, $p=0.001$) and blood glucose (107.07±37.07 vs. 91.20±24.77 mg/dl, $p=0.05$) where the only individual risk factors parameters that were statistically significant different in the 2 groups. Nevertheless, the CVD(+) patients had significantly increased SCORE values pressure (4.84±3.86 vs. 1.85±2.44%, $p<0.001$) and PROCAM values (43.07±10.26 vs. 30.39±13.01 points, $p<0.001$). The "Rose paradox" (which states that most of cardiovascular events take place in the medium and low risk groups) was once again confirmed by SCORE classification, with 7 cases of cardiovascular events in the low (5 cases) and medium (2 cases) risk categories and 6 cases in high-risk group. PROCAM score was better calibrated with no cases in low risk group, 5 cases in the medium risk category and 8 cases in high risk group. Regarding the differences in the baseline ultrasound evaluation CVD (+) patients compared with CVD (–) subgroup had significantly higher values for LVMI (113.06±42.64 vs. 94.40±26.22 g/m^2, $p<0.001$), IMT (0.91±0.21 vs. 0.68±0.71 mm, $p<0.001$) and lower FMD (3.06±1.42 vs. 7.72±3.83%, $p<0.001$). All patients with cardiovascular disease at 10 years had at least one form of subclinical injury at baseline evaluation, the presence of it being associated with a significantly increased odds ratio for cardiovascular events OR = 1,5 (CI 95% 1.35–1.66).
Conclusion: The occurrence of clinically diagnosed heart disease was predicted with modest accuracy by the SCORE and PROCAM risk scores in our study group. Adding the screening for subclinical disease could refine the evaluation.

P1554
A non-invasive vascular multi-marker approach for the detection of coronary artery disease and future adverse events in high cardiovascular risk patients

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Introduction: Non-invasive markers of vascular function and structure are associated with adverse cardiovascular (CV) outcomes but their comparative clinical utility has not been systematically examined. Particularly, it is not known whether any of these indices provides independent diagnostic and prognostic information for CV endpoints in subjects at increased CV risk.
Purpose: In this study, we aimed to assess the performance of a non-invasive vascular multi-marker approach for the detection of CAD and major adverse CV events (MACE) in a high cardiovascular risk population.
Methods: We enrolled 230 consecutive hemodynamically stable patients without acute coronary syndrome who were referred for elective coronary angiography (CAG). In all patients the following markers of subclinical vascular disease were evaluated: (i) endothelial function by flow-mediated dilatation (FMD), (ii) aortic stiffness by carotid-to-femoral pulse wave velocity (cf-PWV), (iii) aortic hemodynamics and wave reflections by applanation tonometry and pulse wave analysis and (iv) intima-media thickness (IMT) and plaque score (PS) in the carotid and common femoral arteries by high resolution ultrasonography. Severity of CAD was quantified in CAG according to the number of coronary vessels with a ≥50% narrowing and the Gensini score. We prospectively followed the patients for a median period of 44±1.14 months and recorded MACE, including all-cause death, CV mortality and acute coronary syndrome (ACS).
Results: Among all peripheral vascular markers studied, carotid and femoral plaque score (PS) were the only independent factors predictive of the presence of CAD (OR:1.30 and OR:1.40 per 1-unit increase, respectively) after adjustment for traditional risk factors and eGFR. Moreover, FMD and carotid PS were independently associated with the Gensini score (b=-1.71 and b=2.68, respectively, $p<0.05$ for all). In survival analysis, carotid PS predicted the occurrence of cardiovascular death after adjusting for age, gender, traditional risk factors and interleukin-6, C-reactive protein ($p<0.05$).
Conclusions: Among the most commonly used markers of subclinical cardiovascular disease, carotid plaque score and FMD independently determined the presence and severity of CAD in high risk patients. In addition, carotid plaque score was associated with cardiovascular mortality in this population. Carotid atheromatosis and endothelial dysfunction might be clinically useful vascular biomarkers to detect CAD and predict CV events in high-risk patients.

P1555
Metabolic syndrome severity score is a predictor of worse diastolic function independently of each individual metabolic syndrome component: a community-based cohort study

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Introduction: Metabolic syndrome (MetS) is a cluster of cardiovascular (CV) risk factors that share several pathophysiological mechanisms. Its role as a predictor of major CV adverse events has been questioned as not being worth more than the sum of its five components. In this regard, a continuous gender and race/ethnicity-specific MetS severity score was recently described and validated. The relationship between this score and cardiac diastolic function has not been evaluated yet.
Purpose: This study aimed to analyze the relationship between MetS severity score and diastolic function in a community-based cohort.
Methods: A cross-sectional evaluation was performed of a community-based cohort consisting of 925 adults aged 45 years or older, free of known cardiovascular disease or symptoms. All participants underwent detailed clinical and echocardiographic examination. The participants were categorized according to MetS status using the AHA/NHLBI modification of the NCEP-ATPIII criteria (dicothomous). A gender and race/ethnicity-specific continuous MetS severity score was also calculated. Diastolic function was evaluated by echocardiography using e' velocities and E/e' ratio. Diastolic dysfunction was defined using the 2016 ASE/EACVI Joint Recommendation.
Results: In this cohort (61.5±10.5 years; 37% men), MetS was present in 358 (38.7%) individuals. Diastolic dysfunction was present in 8 individuals (1%) according to the 2016 definition. The median MetS score was significantly higher in patients with MetS (median=0.63; IQR: 0.26; 1.00) when compared to patients without MetS (median=-0.33, IQR: -0.75; -0,00). Higher MetS severity score was significantly associated with decreased lateral e' velocity (rho=-0.24, $p<0.001$) and increased E/e' ratio (rho=0.18, $p<0.001$). In a multivariable model adjusting for age and the 5 individual components of MetS, higher MetS severity score remain associated with deteriorated diastolic function (decreased e': beta-coefficient=-0.62, $p<0.001$; increased E/e' ratio: beta-coefficient=0.30, $p=0.042$). There was no significant association between MetS and diastolic variables when the severity score was substituted in the model for MetS dichotomous definition (beta=-0.15, $p=0.672$; beta=0.20, $p=0.515$, respectively).
Conclusion: This community-based study including a population free of cardiovascular symptoms and disease showed a significant association between a con-