A serum biomarker reflecting collagen type I degradation (C1M) is an independent risk factor for acute myocardial infarction in postmenopausal women: results from the PERF study

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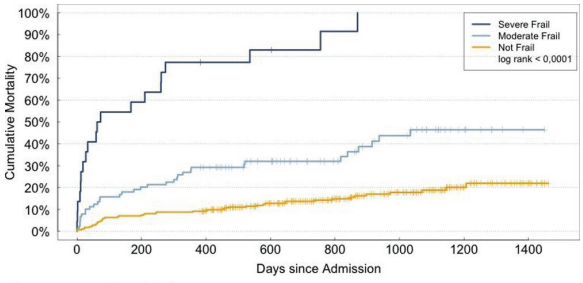
tionnaires and physical tests, which are not practical in daily clinical routine. At our department all patients are assessed daily by the nursing staff for their nursing demands, including activities of daily living (ADL; eat/drink, stool, mobility, hygiene) in 3 different gradings (not, partly, fully self-sufficient).
Purpose: We hypothesised that theses data is enough to calculate a predictive frailty score.
Methods: We performed a retrospective analysis (inclusion of: Type-1 AMI, ≥65 years, years 2012–2014; exclusion: cardiogenic shock) and collected the patient's anamnesis and ADL assessments before discharge. Depending on the grading within each ADL category (0 points = not, 1 point = partly, 2 points = fully self-sufficient, respectively), patients were stratified into 3 different groups: severe (0–3 points), moderate (4–6 points) and not frail (7–8 points), respectively. Primary endpoint was all-cause mortality on 31st December 2015. We performed a descriptive analysis of data. Differences in mortality were assessed by log-rank test, independent predictors were investigated by linear and cox-regression models.
Results: We identified 396 patients (35.6% STEMI, 44.4% females, mean age 76.7 years). Of those, 5.6% were severe, 22.5% were moderate, and 72.0% were non frail according to our score. Overall all-cause mortality was 25.3% (median follow-up 2.5 years). Frail patients were older (p=0.001), had significantly more often STEMI at presentation (p=0.022), increased conservative therapy (p<0.001), known heart failure (p=0.025), atrial fibrillation (p<0.001), a history of stroke (p=0.043) and were more likely to be female (p=0.012). Independent predictors for frailty score at discharge (adjusted for baseline characteristics) were age (OR-0.38; -0.064–0.012; p=0.004), reperfusion therapy (OR 0.989; 0.548–1.43; p<0.001) and atrial fibrillation (OR-1.242; -1,769- -0.716; p<0.001).
Mortality rates for frailty cohorts are depicted in Fig. 1 (log-rank <0,0001 between groups). Independent predictors for long-term all-cause mortality were frailty score (p<0.0001; HR 0.755; 0.687–0.830), age (p=0,001; HR 1.05; 1.021–1.080), kidney function (MDRD) (p=0.002; HR 0.986; 0.978–0.995), known heart failure (p=0.017; HR1.911; 1.121–3.257) and reperfusion therapy (p=0.032; HR 0.586; 0.36–0.955). There was no interaction between age and the frailty score (p=0.636).



All-cause mortality of frailty groups

Conclusion: Our frailty score is very easy to assess and to calculate. After adjustment for prognostic baseline characteristics, our score serves as an independent predictor for long-term all-cause mortality in patients after AMI ≥65 years.
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P3448 | BEDSIDE
Validity of accelerometer cut-points and level of free-living physical activity in the oldest old patients with coronary artery disease

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Background: To improve our understanding of physical activity in the oldest old patients with coronary artery disease (CAD), accurate assessments such as accelerometry are important. There is no consensus on applicable accelerometer cut-points for defining intensity levels for the oldest old patients with CAD.
Purpose: The purpose of this study was (1) to assess the validity of three existing intensity cut-points for accelerometers for the oldest old patients with CAD and (2) to assess free-living physical activity, applying the cut-points with the highest validity for assessing moderate intensity, among these patients.
Methods: A total of 24 patients with CAD, mean age 87.5±3.7 years, participated in the study at a university hospital in Sweden. To assess the validity of the existing cut-points, the patients walked at different speeds wearing the accelerometer at a pace corresponding to individualised perceived exertion at light, moderate, and high intensity according to the Borg-RPE scale. For the free-living physical activity assessment, the patients wore the accelerometer for seven consecutive days. The percentage agreement for light, moderate and high intensity cut-points, as well as ROC curves, was used to identify the sensitivity and specificity of the existing cut-points for moderate intensity.
Results: The cut-point for moderate intensity at 1,041 counts per minute according to Copeland showed the highest validity. The sensitivity was 0.739 and the specificity was 0.609. In a free-living setting, the patients spent 11 of 13.5 (81%) waking hours in a sedentary position and, of the 2.5 hours of being active, 19 minutes (2%) were at least at moderate intensity. Nine of 24 patients (38%) reached 20 minutes of moderate- to vigorous-intensity physical activity three days a week, according to guidelines for exercise-based cardiac rehabilitation.
Conclusions: The existing cut-points for physical activity intensity according to Copeland were found to be valid for the oldest old patients with CAD. Accelerometry is a feasible method which can help to further improve our understanding of free-living physical activity behaviour and to assess relationships between free-living physical activity and health outcomes among the oldest old patients with CAD.

CARDIOVASCULAR RISK FACTORS IN GENERAL POPULATION

P3449 | BEDSIDE
A serum biomarker reflecting collagen type I degradation (C1M) is an independent risk factor for acute myocardial infarction in postmenopausal women: results from the PERF study

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Background/Introduction: Cardiovascular disease (CVD) is the leading cause of death in postmenopausal women, and symptoms of ischemic heart disease (IHD) and acute myocardial infarction (AMI) are often overlooked. With the loss of estrogen production collagen stability is affected with potential of an increased risk of unstable plaques in coronary vessels. Collagen type I, a major component of the cardiac extracellular matrix (ECM), is cleaved by matrix metalloproteinases (MMPs) and known to be active remodeled in CVD.
Purpose: In a large prospective cohort, we explored whether increased MMP-mediated degradation of collagen type I (C1M) measured in serum can be used as a prognostic biomarker for AMI.
Methods: From 1999–2001, 5,855 postmenopausal women aged 49–89 participated in the prospective epidemiologic risk factor (PERF) study. Demographics and serum samples were collected at time of enrollment. AMI, re-infarction, or death subsequent to AMI were collected from the Danish National Registry ultimo 2014. Serum C1M levels were measured by ELISA and evaluated towards the association between C1M and AMI. Associations between C1M and AMI were assessed by a Kaplan-Meier Survival Curve to demonstrate incidents of AMI over time in relation to C1M levels divided into quartiles. A Multivariate cox proportional hazard analysis was used to assess the association between C1M levels and AMI incidents. Women diagnosed with AMI prior to PERF enrollment were excluded from the analysis.
Results: A total of 316 women were diagnosed with AMI following PERF enrollment. C1M was significantly associated with AMI; patients in the highest C1M quartile were 1.6 times more likely to decrease in AMI-free survival than patients in the lowest quartile (p=0.0055). By multivariate Cox proportional-hazard analysis on log2 transformed C1M, the risk of AMI increased by 18% (p=0.03). When doubling the C1M level, and with C1M levels above the pre-specified cut-off (>56 ng/mL), the risk for AMI increased by 33% (p=0.025).
Conclusion: In postmenopausal women serum C1M is associated with AMI and high levels are an independent risk factor for AMI.
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P3450 | BEDSIDE
Optimal cut-off level of low-density lipoprotein cholesterol for normal vascular function in a general population

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Background: Optimal target level of low-density lipoprotein cholesterol (LDL-C) for prevention of cardiovascular disease is not estimated.
Purpose: The purpose of this study was to investigate (1) relationship between LDL-C and vascular function in patients with and without statin therapy, and (2) optimal level of LDL-C for maintenance of normal vascular function.
Methods: We evaluated flow-mediated vasodilation (FMD), nitroglycerine-induced vasodilation, and serum level of LDL-C in 1349 subjects with and without statin therapy. First, serum level of LDL-C was categorized as high (>100mg/dL) and non-high (≤100 mg/dL). Then non-high level of LDL-C was additionally categorized as low (≤70 mg/dL) and moderate (70.1–100 mg/dL).
Results: FMD and nitroglycerine-induced vasodilation were negatively correlated with LDL-C in 957 subjects without statin therapy, but not in 392 subjects with statin therapy. In statin naïve subjects, non-high LDL-C was associated with the decrease in the odds ratio of low tertile of FMD (OR: 0.62, 95% CI: 0.45–0.85; P=0.003) and nitroglycerine-induced vasodilation (OR: 0.69, 95% CI: 0.50–0.96;