NORSKE ABSTRAKTER PRESENTERT PÅ AHA 2019

196 Physical Functioning And Quality Of Life In Different Congenital Heart Defects: Comparative Analysis In 3,589 Patients From 15 Countries

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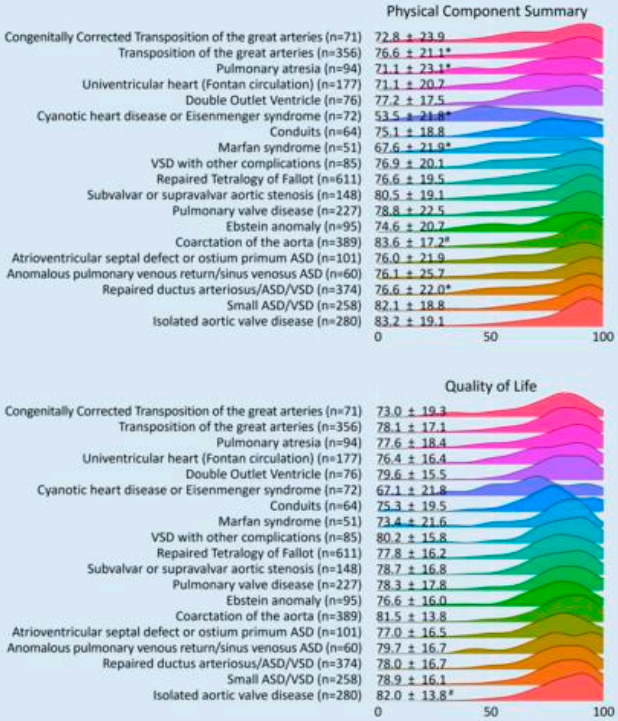
Objectives: Higher complexity of congenital heart defects (CHD) is found to be associated with poorer physical functioning and quality of life (QOL). Within complexity categories, there may be a large variation in outcomes as well, according to the type of CHD. However, prior research is hampered by limited sample sizes. Therefore, we sought to compare the physical functioning and QOL in different CHD from a large international sample.

Methods: In a cross-sectional study, we enrolled 4,028 adult CHD patients from 15 countries. Diagnostic groups with at least 50 patients were included in these analyses, yielding a sample of 3,589 patients (median age=32y; 53% women). Physical functioning was measured using the Physical Component Summary (PCS) of the

Figure 1: Ridgeline plots of the distribution of physical component summary and quality of life in 3589 adults with congenital heart disease (mean ± standard deviation)



 # CHD with highest score as reference
** Statistically significant difference with reference in general linear mixed models adjusted for patient characteristics*

SF-12 (range 0-100). A linear analog scale was used to measure QOL, ranging from 0 (worst QOL) to 100 (best QOL). Multivariable general linear mixed models were applied to assess the relationship between the type of CHD and physical functioning and QOL, adjusted for New York Heart Association (NYHA) class and other patient characteristics, and with country as random effect.

Results: Patients with coarctation of the aorta reported the highest score on PCS (83.6±17.2) and patients with isolated aortic valve disease had the highest QOL (82.0±13.8) (Fig 1). Patients with cyanotic heart disease or Eisenmenger syndrome showed the lowest scores both on PCS (53.5±21.8) and QOL (67.1±21.8). When taking the CHD with the highest score as reference, the PCS was significantly lower in patients with repaired ductus arteriosus/ASD/VSD, transposition of the great arteries, pulmonary atresia, Marfan, and cyanotic heart disease/Eisenmenger syndrome. For QOL, no differences were found for the types of CHD, when adjusted for other patient characteristics.

Conclusions: Some types of CHD predict worse physical functioning, above and beyond NYHA class and other patient characteristics. CHD type was not found to be an independent predictor for QOL.

208 Updated Risk Prediction Model for Acute Type B Aortic Dissection

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Background: Independent predictors of in-hospital mortality for Type B acute aortic dissection was previously published in 2003 using the IRAD database. In this cohort of 384 cases three significant predictors of death were revealed, the deadly triad of hypotension/shock, absence of chest/back pain on presentation, and branch vessel involvement. A 2014 updated analysis in 1034 cases identified mesenteric ischemia, hypotension/shock, descending diameter ≥5.5 cm, renal failure, periaortic hematoma, acute limb ischemia, and age to be predictive of in-hospital death. An updated risk prediction model of type B aortic dissection that further reflects current practice is warranted.

Methods: TBAAD patients enrolled in IRAD in the past decade from 2009 to 2019 (n = 1,028) were queried. The 2003 model of the deadly triad of hypotension/shock, absence of chest/back pain on presentation and branch vessel involvement was then applied to this later cohort and fitness was evaluated. A new model was generated for the 2009 to 2019 population.

Results: The previous 2003 model of the deadly triad strongly predicted mortality in that cohort (c = 0.82) but was weaker when applied to the latter (2009-2019) cohort (c=0.643). Updating the risk model yielded a more robust c-statistic (c = 0.78). Factors common to both models were age, gender, hypotension and mesenteric ischemia/infarction. However, additional factors such as intramural hematoma, coma/spinal cord ischemia, periaortic hematoma and cardiac tamponade also influenced in-hospital mortality in the past decade. ***Conclusions:*** Factors which previously predicted mortality are no longer reflective of risk for Type B patients in the face of changing patient characteristics and management. IRAD provides an updated risk prediction model which strongly predicts mortality in today's patients and may be a more accurate decision making tool.

New Model for the Later (2009-2019) Cohort

Variable	OR	95% CI	p-value
Age ≥70 years	2.89	1.5-5.55	0.002
Male gender	0.75	0.38-.147	0.4
IMH on any test	0.36	0.15-0.83	0.016
Pre-procedure coma	67.35	4.23-1073.79	0.003
Pre-procedure spinal cord ischemia	9.49	1.91-47.14	0.006
Periaortic hematoma on any test	2.26	0.98-5.19	0.056
Pre-procedure hypotension	7.93	3.56-17.66	<0.001
Pre-procedure cardiac tamponade	15.69	1.33-184.93	0.029
Pre-procedure mesenteric ischemia/infarction	3.19	1.19-8.5	0.021

C-statistic 0.784

404 Risk Profile, Antithrombotic Treatment and Clinical Outcomes for Patients in Nordic Countries With Atrial Fibrillation - Results From the Garfield-AF Registry

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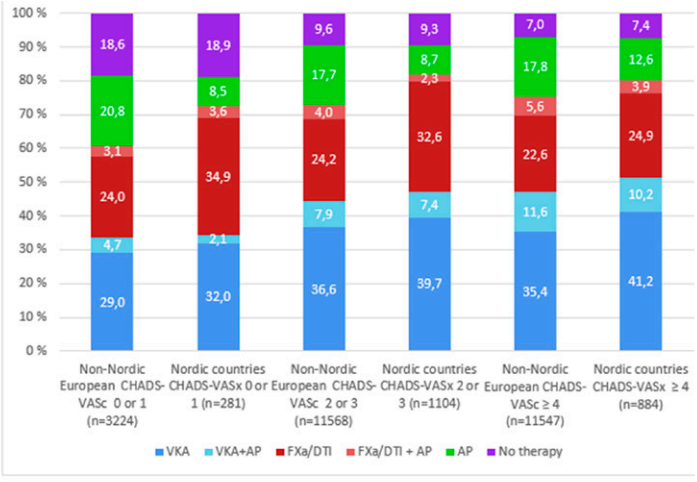
Aims To evaluate clinical characteristics, management and outcomes for patients with newly diagnosed non-valvular atrial fibrillation (AF) at risk for stroke in Nordic countries.

Methods We extracted data from the *"Global Anticoagulant Registry in the FIELD of AF"* (GARFIELD-AF), comprising baseline characteristics and medical history, antithrombotic treatment, and one-year clinical outcomes for patients with AF in the Nordic countries Sweden, Denmark, Finland and Norway, and Non-Nordic European countries. For clinical outcomes, results were compared to Non-European countries.

Results From 2009 to 2016, 52 014 patients worldwide were enrolled in the study, of which 2 395 from Nordic and 27 546 from Non-Nordic-European countries. Nordic patients were older than Non-Nordic-Europeans (mean age 71.7 vs 70.6). In both groups, almost nine in ten had a CHA_2DS_2-VASc score ≥2. Antithrombotic treatment was prescribed to 90.0% of European patients. The use of oral anticoagulants ± antiplatelets (AP), was higher in Nordic countries in all CHA_2DS_2-VASc categories, i.e., 0-1 (72.6% vs 60.7%), 2-3 (82.0% vs 72.8%) and ≥4 (80.1% vs 75.2%). In Nordic countries, AP monotherapy was more rarely used than in Non-Nordic European countries (10.4% vs 18.2%). All-cause mortality rate was significantly lower in Nordic patients than in Non-Nordic European patients and Non-European patients (event rate per 100 patient years 3.76 vs 4.58 vs 4.09, p-value <0.001), stroke rate was lower (1.17 vs 1.35 vs 1.34, p-value <0.001), while major bleeds occurred significantly more often (1.39 vs 0.90 vs 0.69, p-value <0.001).

Conclusion The use of antithrombotic treatment in patients with AF in Europe is generally quite high. Improvements can be made to the choice of drug, that is less AP, especially in Non-Nordic-European countries. Nordic countries had a significantly lower rate of mortality and stroke, but also significantly more major bleeding than Non-Nordic and Non-European countries.



Antithrombotic treatment in CHA_2DS_2-VASc categories 0-1, 2-3, ≥4, respectively, in Nordic and Non-Nordic European countries.

RF245 Sex Differences in Operative Outcomes and Mortality for Type A Acute Aortic Dissection: A Study From the International Registry of Acute Aortic Dissection Interventional Cohort

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Introduction: Worse outcomes have been reported for females presenting with type A acute aortic dissection (TAAD), with a prior International Registry of Acute Aortic Dissection (IRAD) study finding higher in-hospital and surgical mortality rates. We sought to determine sex-specific operative approaches and outcomes for TAAD in the current era.

Methods: The Interventional Cohort (IVC) of the IRAD database was queried to explore sex differences in demographics, imaging characteristics, clinical presentation, operative approach and outcomes. Multivariable logistic regression was performed to identify adjusted outcomes in relation to sex.

Results: Females constituted approximately one-third (34.3%) of the 2,823 patients in the IRAD-IVC cohort and were significantly older than males (65.4 vs 58.6 years, p<0.001). Females were more likely to present with intramural hematoma (IMH), periaortic hematoma, or complete or partial false lumen thrombosis (all p<0.05) and more commonly had hypotension or coma (p=0.001 for both). Stratified by quartile, aortic valve sparing, hemi-arch replacement and cerebral perfusion increased significantly over time in both sexes (all p<0.05), with men undergoing a greater proportion of Bentall, complete arch, and elephant trunk procedures (all p<0.01). In-hospital mortality during the study period was higher in females (16.7% vs 13.8%, p=0.039). Following adjustment, female sex remained a significant predictor of in-hospital mortality overall (odds ratio 1.53, p=0.014) but not in the last decade of enrollment (odds ratio 0.95, p=0.868). Five-year mortality and reintervention rates were not significantly different between the sexes.

Conclusions: In-hospital mortality remains higher among females with TAAD but demonstrates improvement in the last decade. Significant differences in presentation were noted in females including older age, distinct imaging findings, and greater evidence of malperfusion. Though no significant differences in 5-year mortality or reintervention were observed, a tailored surgical and management approach should be considered to reduce sex disparities in early death rates for TAAD.

LBBS18 Discovery of s Cardiac Role for a «Neuronal Protein», Reduced Levels of Disrupted in Schizophrenia 1 (DISC1) in the Heart Causes Cardiac Deterioration and Mitochondrial Dysfunction

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Introduction. Ischemic heart disease is the leading cause of death and disability in Europe and worldwide. Recently we discovered in human pluripotent stem cell derived cardiomyocytes (hSC-CMs) exposed to hypoxia a significant down regulation of the protein disrupted in Schizophrenia 1 (DISC1), never previously explored in the heart. We hypothesised that DISC1 is important for maintaining normal cardiac function and especially mitochondrial function.

Methods and results. Next generation RNA sequencing of hSC-CMs exposed to 48h hypoxia/2 h reoxygenation allowed us to explore the global transcriptional landscape underpinning ischemic damage to cardiomyocytes; here DISC1 scored highest amongst all downregulated genes. These data led us to further determine the regulation of DISC1 in the left ventricle (LV) of post MI rats that displayed significantly reduced expression of DISC1 in ischemic border zone regions, whereas DISC1 remained unchanged in the remote viable LV myocardium vs. sham. To determine *in vivo* effect of reduced expression of DISC1, we perfor-

med echocardiography in a mouse model with DISC1 locus impairment (DISC1-Li, N=5) and found significant reduced stroke volume (-31%, p<0.001), cardiac output (-34%, p<0.001), end diastolic- and systolic volume (-60% and -42%, respectively, p<0.001) in addition to reduced left ventricle mass (-31%, p<0.01) vs. wild type (N=5) . Reduction of DISC1 expression in hSC-CMs transfected with small interfering RNA-DISC1 reduced maximal mitochondrial respiration by -28% (p<0.001), whereas overexpression of DISC1 in hSC-CMs transduced with Adeno-Associated Virus 2-human full-length DISC1 increased maximal mitochondrial respiration by 51% (p<0.001).

Conclusion. Together, these data reveal that the protein DISC1 that, until now, never have been explored in the heart, has a key role in maintaining cardiac function and mitochondrial respiration. Furthermore, our data indicate that DISC1 may especially have an important role to sustain functional integrity in the remaining viable myocardium to compensate for loss of function in the necrotic MI area.

Mo2058 Diabetes Without Insulin Use is Not an Independent Risk Factor for Stroke or Death in Anticoagulated Patients with Atrial Fibrillation

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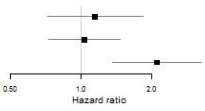
Introduction: Recent registry data have questioned the relevance of diabetes not treated with insulin as a risk factor for cardiovascular (CV) events in patients with atrial fibrillation (AF). We investigated the prognostic relevance of diabetes without or with insulin treatment in a large cohort of anticoagulated patients with AF within the ARISTOTLE study.

Methods: Patients with AF and an increased risk of stroke randomized to apixaban versus warfarin in the ARISTOTLE trial were classified according to diabetes status - no diabetes (n=13,588); non-insulin treated diabetes (no medication, n=1055; or oral antidiabetic drugs only, n=2726); or insulin-treated diabetes (n=832). The associations between diabetes status and stroke/systemic embolism (SE) and CV death, were examined by Cox proportional hazard regression adjusted for age, gender, weight, height, smoking, systolic blood pressure, type of AF, creatinine clearance, prior stroke/TIA/SE, heart failure, history of hypertension and medication at randomization (aspirin, statin, VKA treatment within 7 days).

Results: Patients with diabetes were younger and had a higher body mass index. The median CHA_2DS_2VASc score was 3.0 in non-diabetics; and 4.0 in each of the diabetes categories. There was no difference in stroke/SE between the populations. Insulin-treated diabetes was associated with significantly higher rate of CV death in comparison to non-insulin treated or no diabetes, while there was no increase in CV mortality among patients with diabetes without insulin treatment (Figure).

Conclusions: In anticoagulated patients with AF, insulin-treated diabetes mellitus is associated with higher CV mortality than no diabetes, however, non-insulin treated diabetes was not. None of the types of diabetes were associated with a higher risk of stroke/systemic embolism.

	N	Events	HR	P
No Diabetes	13588	482		
Diabetes - no medication	1055	39	1.15	
Diabetes - oral therapy	2726	85	1.03	
Diabetes - insulin	832	46	2.11	0.009



Mo2183 Higher B-type Natriuretic Peptide Concentrations are Associated with Better Left Ventricular Function in The General Population: The Akershus Cardiac Examination 1950 Study

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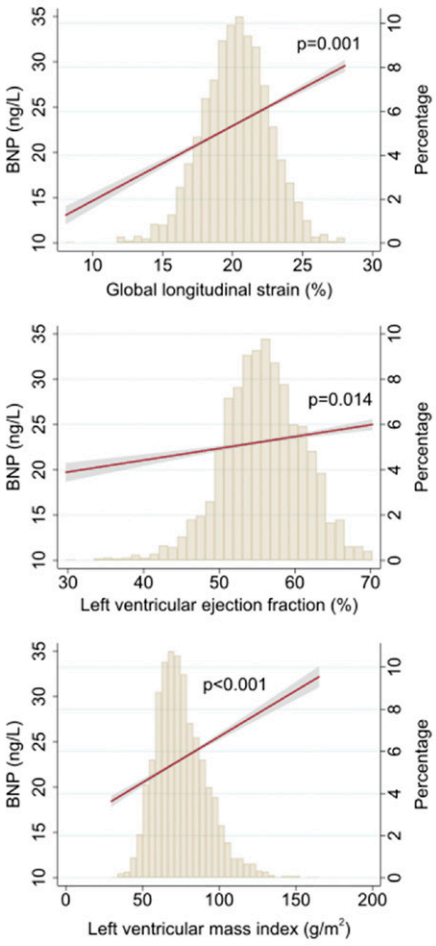
Introduction: Higher concentrations of B-type natriuretic peptide (BNP) reflect myocardial distension and stress, and are

associated with poor prognosis in patients with cardiovascular disease.

Hypothesis: Higher concentrations of BNP are associated with indices of adverse left ventricular (LV) remodeling and early stages of LV dysfunction in the general population.

Methods: We measured BNP in 1233 women and 1155 men free from known coronary heart disease participating in the prospective observational Akershus Cardiac Examination 1950 Study, which included community dwellers born in 1950 residing in Akershus County, Norway. All study participants underwent extensive cardiovascular phenotyping at baseline, including detailed echocardiography with assessment of global longitudinal strain, LV ejection fraction and LV mass index. We used absolute values of global longitudinal strain in all analyses (i.e. an increase in absolute values equaling improving LV function).



gure. Continuous associations between BNP and indices of left ventricular ructure and function (adjusted for sex, age, study site, BMI, eGFR, total and DL cholesterol, CRP, higher education, statin therapy, hypertension, diabetes ellitus, current smoking, and alcohol consumption). BNP, B-type natriuretic ptide. Percentage represents distribution of global longitudinal strain, ft ventricular ejection fraction and left ventricular mass index.

Results: Concentrations of BNP were median 17.2 (interquartile range 5.0 to 29.6) ng/L and were above the limit of detection in 73.2% of study participants. Higher concentrations of BNP were positively associated with absolute values of both global longitudinal strain (adjusted B 0.21, 95% CI 0.11 to 0.31) and LV ejection fraction (adjusted B 0.27, 95% CI 0.06 to 0.49), as well as with LV mass index (adjusted B 1.61, 95% CI 0.95 to 2.27; Figure).

Conclusions: In healthy subjects from the general population, higher concentrations of BNP are associated with better LV systolic function. This is in accordance with the beneficial physiological actions of natriuretic peptides and genetic variants associated with higher BNP concentrations but in contrast to the established inverse association of BNP with LV systolic function in patients with overt heart failure. These observations may have important implications for the interpretation of BNP measurements in the general population.

Mo2184 High-sensitivity Troponin T Concentrations Improve Diagnostic and Prognostic Assessment in Patients with Acute Dyspnea

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Introduction: N-terminal pro-B-type natriuretic peptide (NT-proBNP) measurements help diagnose acute heart failure (HF) but with less accuracy in HF patients with preserved ejection fraction (HFpEF). Whether high-sensitivity cardiac troponin-T (hs-cTnT) measurements can improve diagnostic accuracy of HFpEF and provide prognostic information in patients with acute dyspnea is not known.

Methods: We measured hs-cTnT concentrations on admission in 314 patients hospitalized with acute dyspnea and adjudicated diagnoses according to guidelines. HF patients with ejection fraction (EF) ≥50% were diagnosed with HFpEF.

Results: Among 143 patients (46%) with acute HF, 52 patients were diagnosed with HFpEF. HFpEF patients had lower NT-proBNP concentrations than HF patients with reduced EF (HFrEF): median 2293 (Q1-3 687-4569) vs. 4308 (2064-8738) ng/L, p=0.001. No difference in hs-cTnT concentrations were found between HFpEF and

HFrEF patients: 39 (19-104) vs. 35 (23-74) ng/L, p=0.795. Area under the receiver-operating characteristics curve (ROC-AUC) to separate HFpEF from non-HF-related dyspnea was 0.79 (95% CI 0.73-0.86) for NT-proBNP, 0.80 (0.73-0.86) for hs-cTnT, and 0.83 (0.76-0.89) for hs-cTnT and NT-proBNP in combination. Adding hs-cTnT to a predictive model for HFpEF including NT-proBNP and clinical variables resulted in a net reclassification improvement of 0.51 (95% CI 0.46-0.56, p<0.001). During median 27 months follow-up, 114 (36%) patients died. hs-cTnT concentrations stratified patients with a poor and favorable prognosis (Figure), and higher hs-cTnT concentrations were associated with increased risk of all-cause mortality in multivariable Cox regression analysis that adjusted for clinical variables and NT-proBNP: HR ($_{ln}$hs-cTnT) 1.30 (95% CI 1.07-1.58, p=0.009).

Conclusions: hs-cTnT measurements improve diagnostic accuracy of HFpEF and provide independent prognostic information in unselected patients with acute dyspnea.

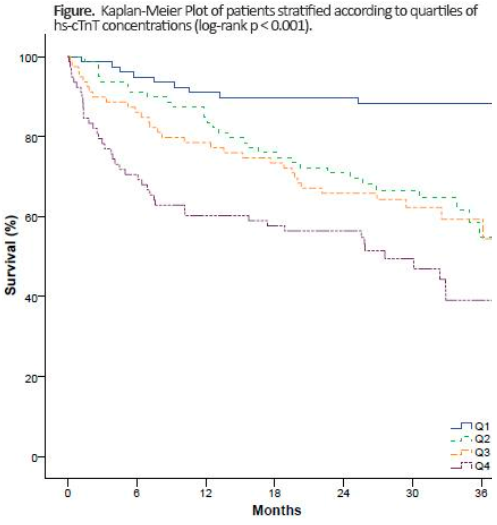

Figure. Kaplan-Meier Plot of patients stratified according to quartiles of hs-cTnT concentrations (log-rank p < 0.001).

Mo2248 Lower Myocardial Energetic Efficiency is Associated with Increased Cardiovascular Risk in Asymptomatic Aortic Valve Stenosis

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Introduction: Lower myocardial energetic efficiency (MEE) has been associated with impaired outcome in hypertensive patients, but has not been assessed in patient with aortic stenosis (AS).

Methods: Data from 1695 patients with asymptomatic mild-moderate AS enrolled in the Simvastatin and Ezetimibe in Aortic Stenosis study followed for 4.3 years was used. MEE was calculated from Doppler stroke volume/([heart rate]0.6) and normalized for left ventricular (LV) mass (MEEi). Independent covariables of lower MEEi were identified in multivariable linear regression analysis. Outcome was assessed in Cox regression analysis and reported as hazard ratio (HR) and 95% confidence interval (CI).

Results: In multivariable linear regression analysis, lower MEEi was associated with male sex, more severe AS, higher body mass index and lower LV ejection fraction and with prevalence of hypertension (all P<0.01). In Cox regression analysis adjusting for these covariables, lower MEEi was associated with higher HRs for heart failure hospitalization, cardiovascular death and all-cause mortality (all P<0.05) (Table).

Conclusion: In AS patients free from diabetes and known cardiovascular disease, lower MEEi was associated with increased risk for heart failure hospitalization and death.

Table. Association of lower MEEi (per 10ml/s per g) with outcome in uni- and multivariable Cox analyses.

Event	Univariable analysis		Multivariable analysis	
	HR (95% CI)	P	HR (95% CI)	P
Heart failure hospitalization (n= 74)	1.52 (1.29-1.81)	<0.001	1.27 (1.02-1.57)	0.033
Cardiovascular death (n=88)	1.48 (1.27-1.72)	<0.001	1.51 (1.25-1.83)	<0.001
All-cause mortality (n=175)	1.30 (1.18-1.44)	<0.001	1.21 (1.07-1.36)	0.002

CI=confidence interval, HR=hazard ratio

Mo2306 Higher Arterial Stiffness is Associated with Lower First-phase Ejection Fraction in Aortic Stenosis

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Introduction: Reduced first-phase ejection fraction (EF1) has been proposed as a novel marker of early systolic impairment in aortic stenosis (AS). The covariates of EF1 has not been investigated.

Hypothesis: We assessed the hypothesis that increased arterial stiffness could influence EF1 through increasing systolic blood pressure in the proximal aortic root in early systole.

Methods: Data from a cross-sectional study of 120 patients with mild-severe AS and preserved LV ejection fraction (>50%) was analyzed. EF1 was calculated as the volume change from end diastole to the time corresponding to peak aortic jet velocity. Arterial stiffness was assessed by central pulse pressure/stroke volume index ratio. Global longitudinal strain (GLS) was assessed by speckle tracking echocardiography.

Results: In univariable linear regression analyses lower EF1 was associated with higher age, peak aortic jet velocity, global EF, arterial stiffness, valvular impedance and lower GLS. There was no significant association between EF1 and heart rate, LV mass or sex.

In multivariable analysis, EF1 was associated with higher arterial stiffness and lower GLS, independent of AS severity (Table). Replacing pulse pressure /stroke volume index by valvular impedance in the model did not change the results.

Conclusions: In conclusion, in AS patients increased arterial stiffness was associated with lower EF1, independent of confounders.

Mo4049 Cardiac Troponin I Measured With a Single Molecule Counting Assay for Ruling Out Coronary Artery Disease in Patients With Stable Chest Pain

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Background: The diagnostic use of cardiac troponins (cTn) in the setting of acute coronary ischemia is well established. However, its performance as a diagnostic tool in the setting of suspected stable coronary artery disease (CAD) has not been thoroughly evaluated.

Methods: We included 736 patients referred for evaluation of suspected stable CAD at a Norwegian university hospital. Patients were evaluated by Coronary Computed Tomography Angiography (CCTA) and cTnI. The assay used in the analyses was a single molecule counting cardiac troponin I assay with a limit of detection of 0.08 ng/L. The explorative diagnostic cTnI cut-offs for obstructive CAD (≥50% luminal stenoses), was set at 0.5, 1.0, 1.5 and 2.0 ng/L. Cardiovascular risk was computed by the NORRISK2 calculator, and patients categorized as low, intermediate or high-risk.

Results: Median age of the patients in the study was 65 (range 28-87) years, 257 (35%) were women. cTnI was measurable in all patients: median 1.87 (IQR 1.15-3.56) ng/L. In logistic regression analysis, log2 of cTnI concentrations was a significant predictor of obstructive CAD (odds ratio (OR) 1.47, 95%Confidence interval (CI) [1.30.-1.66], p<0.001). This was still significant when adjusting for known confounders (OR 1.16, 95% CI [1.01-1.34]), p=0.03. The C-statistic was 0.65 (95% CI [0.61-0.69]). In the predefined low, intermediate and high-risk patient groups, the C-statistic were 0.66 (95% CI [0.60-0.72]), 0.60 (0.48-0.71) and 0.60 (0.53-0.66). At the diagnostic cut-offs of 0.5, 1.0, 1.5, and 2.0 ng/L, the highest specificity and negative predictive value (NPV) for obstructive CAD were seen in the low risk group, with NPV 95% (75-100) at 0.5 ng/L and specificity 75% (67-81) at 2.0 ng/L.

Table. Multivariable linear regression analysis of covariates of EF1(multiple R^2 0.34, p <0.001)

	β coefficient	p-value
Age (years)	-0.029	0.472
Global longitudinal strain (%)	-0.251	0.003
Pulse pressure / stroke volume index	-0.244	0.006
Peak aortic jet velocity (m/s)	-0.358	<0.001
Global ejection fraction (%)	0.178	0.036

Conclusions: Cardiac troponin I measured with a novel high-sensitivity assay provide diagnostic information in patients evaluated for suspected stable CAD by CCTA. The performance appeared to be best in those at low cardiovascular risk.

Mo4053 Evolocumab and Cardiovascular Outcomes in Patients with Recent Myocardial Infarction: Analysis From FOURIER

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Background: The 2018 Cholesterol Guideline identified pts with recent MI (within 12 months) as very-high risk and for whom it is reasonable to add a PCSK9 inhibitor antibody to maximal statin if LDL-C ≥70 mg/dL. We report the clinical efficacy of evolocumab in pts with recent MI in FOURIER.

Methods: FOURIER randomized 27,564 pts with stable ASCVD treated with statin to evolocumab vs placebo followed for 2.2 years median. In this analysis pts with known date of prior MI (n=22,320) were stratified as recent MI (between 1-12 months) vs remote MI (>12 months prior to randomization). We assessed the efficacy of evolocumab on the primary endpoint (PEP: CV death, MI, stroke, UA, or coronary revascularization) and the key secondary EP (SEP: CV death, MI or stroke) in these subgroups.

Results: The 5711 pts with a recent MI were more likely to be younger and treated with high-intensity statin (77.3 % vs. 69.3 %) and less likely to have a history of stroke, PAD, CABG, hypertension, metabolic syndrome, renal dysfunction, diabetes compared with the 16,609 pts with a remote MI. In pts with a recent MI, evolocumab reduced the risk of the PEP & key SEP by 19% (HR 0.81, 95% CI 0.70-0.93) and 25% (HR 0.75, 0.62-0.91), respectively. In contrast, in pts with a remote MI, the respective relative risk reductions were 8% (HR 0.92, 0.84-1.01) and 15% (HR 0.85, 0.76-0.96) (P-int 0.13 & 0.24). Given the higher event rate in pts with a recent MI, the absolute risk reductions over 3 years with evolocumab for the PEP and key SEP tended to be greater: 3.7% and 3.2%, respectively, vs. 1.1% and 1.3% (Figure).

Conclusion: Patients with a recent MI (between 1-12 months) were at higher risk for CV events and tended to experience greater relative and absolute risk reductions with evolocumab than those with more remote MIs. These findings support guideline recommendations to lower LDL-C intensively after a recent MI.

Sa1160 Impact of Lowering LDL-C with Evolocumab on Everyday Cognition in Participants From the FOURIER Trial

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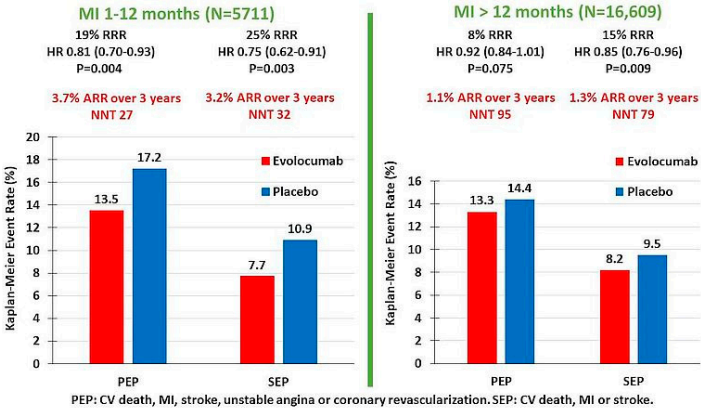
Background: The EBBINGHAUS trial demonstrated that LDL-C lowering with the addition of evolocumab to background statin did not affect cognitive function in 1,204 patients from the FOURIER trial who underwent formal serial cognitive testing. We now report outcomes in the entire



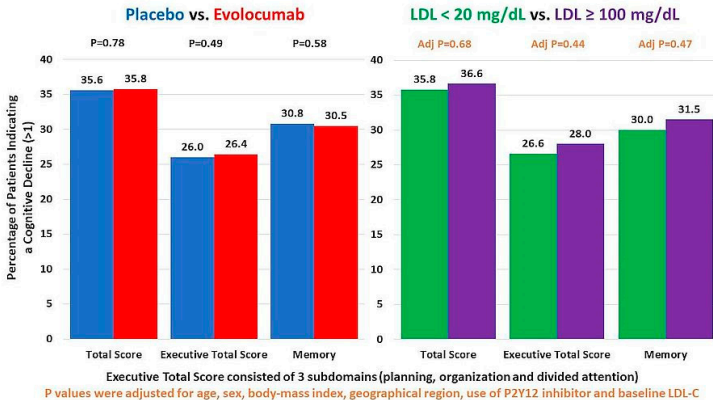
PEP: CV death, MI, stroke, unstable angina or coronary revascularization. SEP: CV death, MI or stroke.

FOURIER cohort using a patient self-survey of everyday cognition.

Methods: FOURIER was a randomized, double-blind, placebo-controlled trial involving stable patients with ASCVD and LDL-C levels ≥70 mg/dL despite statin. At the final visit, patients completed a 23-item survey on memory and executive domain subscales (planning, organization, divided attention) of the Everyday Cognition (ECog) scale. For each item, patients were asked to compare their level of everyday functioning at the end of the trial with their level at the beginning of the trial, score ranges from 1 (no change or improvement), 2 (occasionally worse), 3 (consistently little worse) and 4 (consistently much worse). A total summary score was derived based on both memory and executive scores. In addition to the comparison of the 2 randomized treatment arms, we also compared ECog scores in patients stratified by achieved LDL-C at 4 weeks, adjusted for differences in baseline characteristics.

Results: 22,655 patients (11,363 evolocumab, 11,292 placebo) were followed for a median duration of 2.2 years and had ECog data. The frequencies of patients reporting any cognitive decline (ECog >1) at the end of the study were similar for evolocumab vs. placebo for the total score 35.6% vs. 35.8% (P=0.78) and the individual domains (Figure). Patients who achieved very low LDL-C levels <20 mg/dL reported similar decline of any cognitive function compared to those with LDL-C ≥ 100 mg/dL: total score 35.8% vs. 36.6%, P=0.56.

Conclusion: In this randomized trial involving patients with stable ASCVD, the addition of evolocumab to statin therapy had no impact on reported everyday cognition function, including in those who achieved with very low LDL-C levels.



Sa2208 High-sensitivity Troponin T Predicts Mortality Independently Of Ventricular Dysfunction And Pulmonary Hypertension In Stable Chronic Obstructive Pulmonary Disease

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Introduction: Patients with stable chronic obstructive pulmonary disease (COPD) are at increased risk of pulmonary hypertension and systolic dysfunction. Levels of high-sensitivity cardiac troponin T (hs-cTnT) are increased in both stable and acute COPD, but whether the association with outcome is independent of the severity of pulmonary hypertension and ventricular dysfunction remains to be established.

Hypothesis: High hs-cTnT concentrations are associated with prognosis independently of cardiac dysfunction and pulmonary hypertension in stable COPD patients without overt LV disease.

Methods: The cohort consisted of 112 patients with GOLD stage I-IV. Mean pulmonary artery pressure was measured at rest by right heart catheterization, and echocardiographic examinations were performed within two hours after the procedure. Hs-cTnT was measured in 98 patients and associations with all-cause mortality assessed by Cox regression and Kaplan-Meier analysis.

Results: Hs-cTnT was detectable in 87% of the measured samples, and the median value was 7 ng/L (interquartile range: 4-10). We found a linear association with increasing age, and elevated levels of hs-cTnT correlated with right ventricular (RV) TAPSE, RV myocardial performance index and left ventricular strain. Troponin levels were significantly increased in patients with pulmonary hypertension (p=0.017) and increasing GOLD stage (p=0.002). During a mean follow-up of 7.8±3.0 years, 49 deaths occurred. A higher proportion of deaths occurred in the highest troponin quartile (log-rank 0.032). We found a significant association between hs-cTnT and all-cause mortality (p=0.001), which remained significant when adjusting for pul-

monary hypertension and indices of LV and RV dysfunction (p=0.022). When the analyses were performed according to sex, the associations remained significant in men, but not in women.

Conclusions: Elevated hs-cTnT levels are associated with the severity of pulmonary hypertension and cardiac dysfunction in patients with stable COPD. Elevated levels remain associated with all-cause mortality after adjustment for pulmonary hypertension and indices of systolic dysfunction.

Sa4008 Cardiac Troponin T and N-terminal Pro-B-type Natriuretic Peptide for Detection of Myocardial Ischemia Among Patients with Suspected Stable Angina

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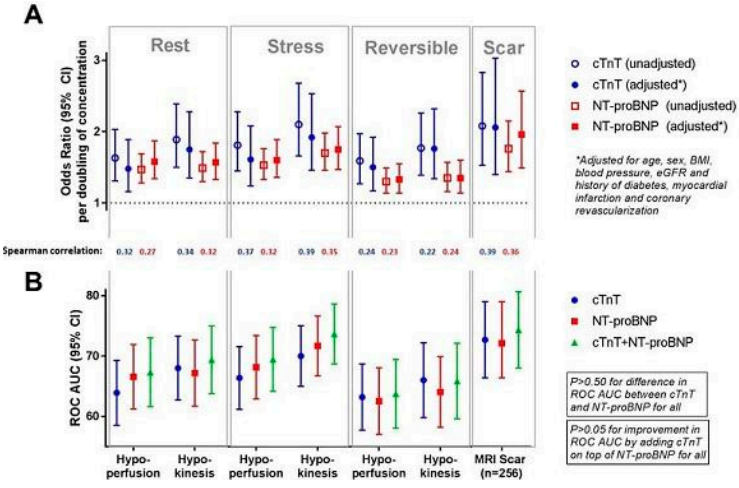
Introduction: Cardiac troponin T (cTnT) and N-terminal pro-B-type natriuretic peptide (NT-proBNP) have both been associated with myocardial ischemia, but it remains unclear whether this is directly caused by ischemia or if the elevation is indirect and related myocardial dysfunction.

Objective: To evaluate the associations between cTnT and NT-proBNP and the presence of reversible and irreversible myocardial perfusion defects, regional wall motion abnormalities, and myocardial scar.

Methods: We included 432 patients from the European multicenter DOPPLER-CIP study with suspected stable coronary artery disease (SCAD) which was examined with SPECT at rest and during stress to assess reversible and irreversible ischemia. Patients also underwent stress electrocardiography, stress echocardiography and gadolinium enhanced MRI.

Results: Reversible perfusion defects were present in 32%, and cTnT and NT-proBNP (median [IQR]) were higher in these patients: 9.5 (6.3-12.6) vs 7.0 (4.1-10.5) ng/L and 164 (80-336) vs 80 (43-166) ng/L (p<0.001). The two biomarkers correlated moderately (rho=0.50, p<0.001), and both were associated with reversible and irreversible ischemia assessed by hypoperfusion, hypokinesis and myocardial scar after adjusting for clinical covariates (**Panel A**) and after further adjustment for LV mass and LV ejection fraction. There was a trend for a stronger correlation with hypokinesis compared to hypoperfusion for both biomarkers. The C-statistics ranged from 63%-73% and were comparable between cTnT and NT-proBNP (P>0.50 in all models, **Panel B**), which was superior to stress electrocardiography and –echocardiography ranging from 43%-56% and 52%-58%, respectively.

Conclusions: Despite a significant association with ischemia, the diagnostic value of cTnT and NT-proBNP in SCAD seems modest. Our data suggest that the functional effects of myocardial ischemia may be a stronger stimulus for release of these biomarkers than ischemia per se.



Su3003 Change in Body Mass Index and Long-term Risk of Stroke in Healthy Men

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Background and Purpose: The impact of weight change on stroke risk is not well known. We aimed to examine the associations between early- and mid-life weight change and stroke risk during long-term follow-up of healthy men.

Methods: Healthy men aged 40-59 years underwent a cardiovascular examination at baseline. Participants were asked about their weight change since the age of 25 (early-life weight change). They were also examined again 7 years after baseline, and weight change was recorded (mid-life weight change). For both weight change periods, we divided the men into the following categories: "weight loss", "weight gain 0-4.9kg", "weight gain 5-9.9kg", and "weight gain >10kg". Outcome data was collected up to 35 years, from study visits, hospital records, and the National Cause of Death Registry. Risk of stroke was estimated in Cox regression models adjusted for cardiovascular risk factors and expressed as hazard ratios (HRs) with 95% confidence intervals (CIs).

Results: 2014 participants were eligible for analyses of early-life weight change, while 1403 where still healthy after seven years, hence eligible for analyses on mid-life weight change. Mean follow-up time was 30.2 and 24.6 years, respectively. During early-life, compared to those who maintained weight (increase 0-4.9kg), hazard ratio for stroke was 1.46 (CI 1.09-1.94) for those who increased 5-9.9kg, 1.39 (CI 1.03-1.87) for those who increased >10kg, and 1.46 (CI 0.99-2.11) for those with weight loss (Figure). There were no associations between mid-life weight change and stroke risk.

Conclusions: Weight increase and decrease during early-life, but not mid-life, seems to be associated with increased long-term stroke risk in men. These findings may have implications for timing of preventive efforts.

Su3088 Impact of Cied Infection: A Clinical and Economic Analysis of the Wrap-It Study

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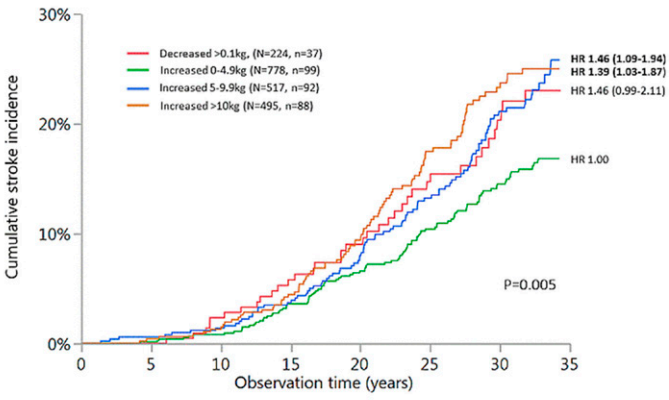
Introduction: Current understanding of the clinical and economic impact of CIED infection is based on retrospective analyses from medical records or administrative claims data. The WRAP-IT study offers a prospectively designed opportunity to evaluate the impact of CIED infection on mortality, quality of life (QOL), and health care utilization (HCU) in the US healthcare system.

Methods: This was a pre-specified, as-treated analysis which evaluated clinical outcomes related to CIED infections: mortality, QOL, interruption in CIED therapy (n=70) and HCU (infection in US pts resolved prior to study exit, n=38). QOL was evaluated with EuroQOL-5D (EQ-5D) utilities at implant, infection diagnosis, and 1, 3, 6-months after diagnosis. Primary

Figure. Cumulative stroke incidence in groups of different weight change during early-life.



ard ratio, CI Confidence interval. Hazard ratio is adjusted for baseline age, smoking status, systolic blood pressure, total cholesterol, blood glucose and respiratory fitness. Risk in each group compared to hazard in the «increased 0-4.9kg» group. P-value from log-rank test.

diagnosis codes, procedure codes and diagnosis related group assignments were imputed from study data. Payer costs were assigned using Medicare national payments, while hospital and patient costs were derived from similar hospital admissions in a separate administrative dataset. All currency reflects 2017 US dollars.

Results: Major CIED infection was associated with increased all-cause mortality (12-month risk-adjusted HR 3.13, p<0.001). EQ-5D utilities were significantly reduced at time of infection diagnosis versus baseline (adjusted mean difference 0.09, p=0.004) and did not normalize until 6 months post-diagnosis. Infections with extraction and reimplantation in the same hospitalization (26/70) had interruption of CIED therapy for a median of 6.5 (range 0-22) days, for all other infections there was interruption for a median of 27.5 (range 0-749) days. Infections resulted in a mean of 3.9±5.9 clinic visits and 1.6±0.8 hospital admissions with a mean of 12.5±9.2 hospitalized days. Mean costs of infection treatment were $56,025±$46,688 for the hospital, $28,229±$15,066 for Medicare (mean hospital margin for Medicare patients -$30,051±$40,370). Mean out of pocket cost of a single infection-related hospitalization was $879±$263 for the patient. **Conclusions:** This large, prospective analysis corroborates and extends understanding of the impact of CIED infections as seen in real world datasets. CIED infections result in severe impact to mortality, QOL, hospitalization and cost in the US healthcare system.

Su4243 Patients' Perceptions of Generic Drugs After Percutaneous Coronary Intervention: A Multicentre Cohort Study

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Introduction: Generic drugs are lower-cost bioequivalents to brand-name drugs, and important for reducing healthcare expenditure. However, some patients view generic drugs negatively, believing them to be of inferior quality. Misperceptions about generic drugs can potentially reduce adherence and thereby efficacy of the treatment.

Objective: To assess Norwegian patients' perceptions of generic drugs after percutaneous coronary intervention (PCI), and the association between perceptions and sociodemographic factors.

Methods: This study is part of CONCARD^{PCI}, an ongoing multicentre cohort study of patients after PCI. Postal questionnaires comprising sociodemographic data and four questions regarding efficacy, safety, side effects and active ingredients in generic drugs were distributed two months after discharge to patients included between June 2017 and December 2018 (N=1695). Details about hospitalization, invasive procedures and patient characteristics were collected from the Norwegian Registry on Invasive Cardiology and the patients' medical records. Logistic regression analysis investigated how perceptions of generic drugs were associated with age, sex, income, and education level.

Results: In total, 1301 patients (74%) responded to the questionnaire. Most were men (74%), married or living with a partner (77%), mean (SD) age 66 (11), range 30-96 years. Most admissions for PCI resulted from non-ST elevation myocardial infarction (31%). Sixty-two percent perceived generic drugs to be as effective, as safe (60%), produce the same side effects (56%), and contain the same active ingredients as brand-name drugs (58%). There were no indications of substantial associations of perceptions of generic drugs with age (p≥0.222) or sex (p≥0.106). However, those with a higher education level (college/university ≥4 years) (p≤0.003) and total household gross income >60.000 USD (p≤0.049) had more positive perceptions of generic drugs.

Conclusions: There remains a sizeable proportion of patients with negative perceptions of generic drugs after PCI. Educating patients through drug information efforts is a path for future research as it may reduce patients' misperceptions about generic drugs, and thereby improve adherence to treatment.

Su4293 Time of Day Does Not Influence Mortality In Patients Undergoing Surgical Repair Of Acute Type A Aortic Dissection

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Introduction: Patients with acute conditions such as myocardial infarction and cardiac arrest have been found to have worse outcomes when occurring at off hours. Acute type A aortic dissection (TAAAD) represents a surgical emergency requiring prompt intervention regardless of time of day. Whether such a "nighttime effect" exists regarding surgical outcomes for TAAAD has not been previously studied using the International Registry for Acute Aortic Dissection (IRAD).

Methods: 4197 surgically treated patients with TAAAD enrolled in IRAD between 1996-2019 were evaluated to compare outcomes between patients undergoing operative repair during daytime (n=1824, 43.5%) versus nighttime (n=2373, 56.5%). Daytime (D) was defined as 8am-5pm, and nighttime (N) 5pm-8am. Sub-analysis was also performed to examine the effect of weekend presentation. **Results:** D patients were more likely to have undergone prior cardiac surgery (13.2% vs 9.5%, p<0.001) and have a prior aortic dissection (4.8% vs 3.4%, p=0.04). N patients were more likely to have been transferred from a referring hospital (70.8% vs 75.0%, p=0.003). Additional demographics, clinical presentation, and aortic dimensions were similar between groups. D patients were more likely to undergo aortic valve sparing root procedure (23.3% vs 19.2%, p=0.035); however, total arch replacement was performed with equal frequency (19.4% vs 18.8%, p=0.751). In-hospital mortality (D: 17.3% vs. N. 16.2%, p=0.325) and Kaplan-Meier estimates of 5-year post-discharge mortality (D: 86.5% vs N: 87.4%, p=0.965) were similar between groups. Besides higher rates of postoperative tamponade in N patients (7.7% vs 5.8%, p=0.019), outcomes were similar. Subgroup analysis examining the effect of weekend presentation revealed no significant differences. **Conclusions:** In IRAD, a majority of TAAAD patients underwent surgical repair during nighttime. There were higher rates of postoperative tamponade in nighttime patients; however, outcomes otherwise were equivalent. The expertise of cardiac-dedicated operative teams regardless of time of day as well as cardiac surgeon training paradigms may explain similar mortality outcomes, in contrast to previously published findings from other acute medical conditions.

Su4335 Effectiveness and Safety of Standard and Reduced Dose Non-Vitamin K Oral Anticoagulants versus Warfarin in Non-Valvular Atrial Fibrillation - An International Comparative Cohort Study in the Scandinavian Countries

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Background: Effectiveness and safety of non-vitamin K oral anticoagulants (NOACs) in non-valvular atrial fibrillation (NVAF) may differ by dose. Nordic countries provide high quality of warfarin treatment, making them a suitable setting for assessing effectiveness and safety of NOACs against warfarin.

Purpose: The BEYOND Pooled study compared risks of ischemic or hemorrhagic stroke/systemic embolism (S/SE), and risk of bleeding according to standard and reduced dose in NVAF patients treated with apixaban, dabigatran or rivaroxaban, each compared with warfarin treatment.

Methods: A retrospective cohort study of treatment-naïve adult NVAF patients from Denmark, Norway and Sweden dispensed a NOAC or warfarin. Patients were identified from 01 Jan 2013 to 31 Dec 2016 and followed through 31 Dec 2016. Initial dose was defined as the strength of one tablet for rivaroxaban (used once daily) and as twice the strength of one tablet for apixaban or dabigatran (used twice daily). After propensity score (PS) matching per dose for each NOAC-warfarin comparison, individual-level data were pooled across the countries. Cox proportional-hazards regression was used to estimate adjusted hazard ratios of the endpoints.

Results: PS matched NOAC cohort sizes were: apixaban (standard:42,672, reduced:18,794) dabigatran (standard:18,701, reduced:10,669) and rivaroxaban (standard:23,703, reduced:9088). aHRs for the endpoints are presented in the table.

Conclusions: Stroke/SE risk of NOACs relative to warfarin varied little by dose. Apixaban was associated with lower rates of bleeding vs. war-

	Stroke/SE aHR (95% CI)	Bleeding aHR (95% CI)
Apixaban vs warfarin		
-Standard dose (5mg)	0.88 (0.78 - 1.00)	0.75 (0.69 - 0.83)
-Reduced dose (2.5mg)	0.96 (0.83 - 1.10)	0.69 (0.61 - 0.76)
Dabigatran vs warfarin		
-Standard dose (150mg)	0.95 (0.80 - 1.12)	0.75 (0.66 - 0.85)
-Reduced dose (≤110mg)	0.90 (0.76 - 1.05)	0.95 (0.85 - 1.07)
Rivaroxaban vs warfarin		
-Standard dose (20mg)	0.96 (0.85 - 1.09)	1.09 (0.99 - 1.20)
-Reduced dose (≤15mg)	0.98 (0.83 - 1.16)	1.15 (1.02 - 1.29)

CI: Confidence interval; aHR: adjusted hazard ratio

farin across both doses. Compared with warfarin, dabigatran had lower or similar bleeding rates, and rivaroxaban had similar or higher bleeding rates vs. warfarin. NOAC-NOAC comparisons cannot be inferred given the potential differences in patient populations.

Su4339 Effectiveness and Safety of Non-Vitamin K Oral Anticoagulants versus Warfarin According to Patient Risk Profile in Non-Valvular Atrial Fibrillation - An International Comparative Cohort Study in the Scandinavian Countries

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Introduction: Effectiveness and safety of non-vitamin K oral anticoagulants (NOACs) in non-valvular atrial fibrillation (NVAF) may differ according to the patients' risk profile. Nordic countries provide high quality warfarin treatment, making them a suitable setting for assessing clinical outcomes of NOACs against warfarin.

Purpose: The BEYOND Pooled study assessed risks of ischemic or hemorrhagic stroke/systemic embolism (S/SE) and of bleeding according to patient characteristics in NVAF patients treated with apixaban, dabigatran or rivaroxaban, each compared with warfarin.

Methods: A retrospective cohort study of treatment-naïve adult NVAF patients from Denmark, Norway and Sweden dispensed a NOAC or warfarin. Patients were identified from 01 Jan 2013 to 31 Dec 2016 and followed through 31 Dec 2016. After propensity score (PS) matching for each NOAC-warfarin comparison, individual-level data were pooled across the countries. Cox proportional-hazards regression was used to estimate adjusted hazard ratios (aHRs) of the endpoints. Interactions were examined by age, sex, clinical risk scores and comorbidities.

Results: PS-matched NOAC cohort sizes were: apixaban (55,581), dabigatran (28,428) and rivaroxaban (30,599). Among patients initiating apixaban vs. warfarin, the aHRs (95% CI) were 0.96 (0.87-1.06) for S/SE and 0.73 (0.67-0.78) for bleeding. There was no meaningful variation in most subgroups for either bleeding or S/SE. Among patients initiating dabigatran vs. warfarin, the aHRs were 0.89 (0.80-1.00) for S/SE and 0.89 (0.82-0.97) for bleeding, whereas the corresponding aHRs among patients initiating rivaroxaban vs. warfarin were 1.03 (0.92-1.14) and 1.15 (1.07-1.25). The aHRs for rivaroxaban did not vary meaningfully in any subgroups. For dabigatran, aHRs for S/SE did not show meaningful variation across the subgroups but no benefit for bleeding was observed in patients ≥75 years old or with CHA2DS2-VASc ≥4.

Conclusions: The effectiveness and safety of NOACs relative to warfarin was consistent across age, sex, risk scores, and comorbidity. For dabigatran, the bleeding risks may differ by age and stroke risk.

MDP180 Diagnostic Performance of a Novel High-sensitivity Cardiac Troponin I Assay: The Westcor Study

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Introduction: Several diagnostic algorithms that include high sensitivity troponin (hs-cTn) have been developed to rule-in and rule-out NSTEMI.

Hypothesis: A novel 0h/1h algorithm using the hs-cTnI assay from Singulex Clarity System (hs-cTnI(sgx)) performs better than the

European Society of Cardiology (ESC) hs-cTnT algorithm for ruling in/out NSTEMI in patients with acute chest pain.

Methods: 467 patients admitted to Haukeland University Hospital with suspected ACS were consecutively included from September 2015 to February 2017. Serum samples were collected at 0, 1, 3 and 8-12 hours. The final diagnosis was adjudicated by two independent cardiologists based on all available clinical, laboratory (including hs-cTnT) and imaging data. Hs-cTnT was measured in all samples, hs-cTnI(sgx) at baseline and at 1 hour. A hs-cTnI(sgx) 0 h/1h hour rule-out and rule- in algorithm were developed based on the following criteria: The rule out algorithm should have a sensitivity ≥ 99.5% and the highest possible specificity, the rule in algorithm should have a positive predictive value of ≥ 75% and the highest possible sensitivity. Diagnostic performance was calculated and compared to the ESC hs-cTnT 0h/1h hour algorithm.

Results: The prevalence of NSTEMI was 13%, hs-cTnI(sgx) was measurable in 99.9% and hs-cTnT in 70% of the cohort. The diagnostic performance defined as sensitivity, specificity, negative and positive predictive value (NPV and PPV), negative and positive likelihood ratio (NLR and PLR), and area under the curve (AUC) are shown in table 1. The hs-cTnI(sgx) algorithm yielded significantly better AUC compared to the hs-cTnT ESC algorithm (DeLong test). The Hs-cTnI(sgx) algorithm allocated 92% of the patients to either rule-in or rule-out, compared to 78% for the hs-cTnT ESC algorithm.

Conclusion: This novel hs-cTnI(sgx) algorithm shows better diagnostic performance compared to the cTnT ESC algorithm for ruling in and out NSTEMI in patients with suspected ACS.

0 / 1 h rule out (N=467)	Sensitivity	NPV	NLR	Specificity	PPV	PLR	AUC
Hs-cTnT$_0$ < 12 ng/L and Δ_{0-1} < 3 ng/L	100.0 (94.3 – 100.0)	100 (NC)	0 (NC)	74.3 (69.7 – 78.5)	34.6 (31.0 – 38.5)	3.88 (3.29 – 4.58)	0.87 (0.84 – 0.90)
cTnI(sgx)$_0$ < 10 and Δ_{0-1} < 3 ng/L	100.0 (94.4 – 100.0)	100 (NC)	0 (NC)	88.6 (85.1 - 91.5)	54.5 (47.7 - 61.1)	8.78 (6.69 - 11.53)	0.94 (0.92 – 0.96)
0 / 1 h rule in (N=467)	**Sensitivity**	**NPV**	**NLR**	**Specificity**	**PPV**	**PLR**	**AUC**
Hs-cTnT$_0$ ≥ 52 ng/L or Δ_{0-1} ≥ 5 ng/L	79.4 (67.3 – 88.5)	97.2 (95.5 – 98.2)	0.21 (0.13 – 0.35)	96.5 (94.3 – 98.1)	75.8 (64.8 – 84.1)	22.9 (13.5 – 38.9)	0.88 (0.85 – 0.91)
Hs-cTnI(sgx)$_0$ ≥ 70.0 or Δ_{0-1} ≥ 5 ng/L	90.5 (80.4 - 96.4)	98.7 (97.2 – 99.4)	0.10 (0.05 – 0.21)	97.0 (94.9 – 98.5)	80.6 (70.3 – 87.9)	30.5 (17.4 – 53.5)	0.94 (0.91 - 0.96)

MDP230 Empagliflozin in Resistant Hypertension: Findings from the Empa-reg Outcome Trial

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Background: Patients with resistant hypertension (rHT) have increased risk of adverse outcomes and death. Type 2 diabetes (T2D) and rHT often coexist. Empagliflozin (EMPA) reduced systolic blood pressure (SBP) and improved CV outcomes and death in patients with T2D and CVD in the EMPA-REG OUTCOME trial. We aimed to explore the effects of EMPA in patients with and without rHT in a post-hoc analysis. *Methods*: In total, 7020 patients were treated with EMPA 10mg, 25mg, or placebo (PBO) with median follow-up of 3.1 years. We defined rHT at baseline (BL) as the use of ≥3 classes of anti-hypertensive drugs (AHD) including a diuretic and uncontrolled BP (SBP≥140 and/or DBP≥90mmHg), or use of ≥4 classes of AHD and controlled BP (SBP<140 and DBP<90mmHg). We explored the effect of EMPA within subgroups of rHT on CV death, hospitalisation for HF (HHF), 3p-MACE, all-cause death, and incident/worsening nephropathy by Cox regression and SBP over time by a mixed model repeated measures analysis. *Results*: Overall, 1579 (22.5%) patients had rHT; these were older (64.8 vs. 62.7 years), had more concomitant diseases, including coronary artery disease (78.7 vs. 74.7%) and HF (17.3 vs. 8.0%), and lower eGFR (68.1 vs. 75.8 ml/min/1.73 m^2). BL SBP was 142±18 in rHT vs. 133±16 in no-rHT. Mean difference in change in SBP from BL to week 12 with EMPA vs PBO was -4.50 (95% CI: -6.00, -3.00) mmHg in rHT vs. -3.72 (-4.52, -2.92) mmHg in no-rHT and remained lower during treatment. Patients

with rHT had 1.5 to 2-fold risk of HHF, incident/worsening nephropathy and CV death compared to non-rHT. EMPA consistently improved all outcomes in patients with and without rHT (Figure). The incidence of any AEs and serious AEs was higher in those with rHT, but balanced across treatments. *Conclusions*: EMPA induced a clinically relevant reduction in SBP and consistently improved all outcomes in patients with and without rHT. These results support the use of EMPA for lowering BP in patients with T2D and as a potential add-on treatment for rHT.

*Excluding fatal stroke.
HHF – hospitalisation for heart failure
†P-values for treatment-by-subgroup interaction were obtained from tests of homogeneity of treatment group differences among subgroups with no adjustment for multiple testing. HR by multivariable Cox regression with the following variables: age, sex, region, HbA1c (cat), BMI (cat), eGFR (cat), treatment, rHT, and treatment*rHT interaction term.
All, all patients; EMPA, empagliflozin; PBO, placebo

MDP372 Application of the H2FPEF-score to the Community: The Aric Study

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Background: The H_2FPEF-score has been proposed to estimate the likelihood of HFpEF among patients with unexplained dyspnea, but its prognostic relevance in older community-based persons is not known.

Objectives: To describe the risk of incident hospitalized HF among elderly persons with unexplained dyspnea by H_2FPEF-score.

Methods: We studied participants in Atherosclerosis Risk in Communities (ARIC) longitudinal cohort study who attended the 5th study visit (2011-2013; age 67-90 years), underwent echocardiography, and completed a dyspnea questionnaire (MMRC). Participants with LVEF <50%, valvular disease, asthma, COPD, or hemoglobin <10 mg/dl were excluded. H_2FPEF-score was calculated based on obesity, atrial fibrillation, age >60 years, treatment with ≥2 antihypertensives, E/e' ratio >9, and PASP >35 mm Hg. Participants self-reporting dyspnea were categorized by tertile of H_2FPEF-score (1-2, 3-4, ≥5).

Results: Mean age was 75.4±5.1 years, 58.4% were women, and 22.0% were black. 13% self-reported dyspnea without known HF and 10% had prevalent HFpEF. Among 663 participants reporting dyspnea, higher H_2FPEF-score was associated with black race, more diabetes mellitus, higher CRP, NT-proBNP, and hs-TnT levels, and echocardiographic features of adverse remodeling and worse LV longitudinal strain ($p<0.05$ for all comparisons). After a mean 5±1 year follow-up, incidence of HF hospitalization and of HF hospitalization or death were higher in the top two tertiles of H_2FPEF-score compared to the lowest tertile (Table). Incidence rates in the top two tertiles were intermediate between rates in participants not reporting dyspnea and those with prevalent HFpEF.

Conclusions: In a community-based cohort of older persons, higher H_2FPEF-score is associated with a heightened incidence of HF hospitalization or the composite of HF hospitalization or death at 5 year follow-up.

TABLE. Event Rates for Adverse Cardiovascular Outcomes

Outcomes, n (%)	Asymptomatic N=3846	Unexplained Dyspnea, H_2FPEF Score 1-2 N=152	Unexplained Dyspnea, H_2FPEF Score 3-4 N=271	Unexplained Dyspnea, H_2FPEF Score ≥5 N=240	Known HFpEF N=501
Heart failure hospitalization or death					
• Number of events	427	22	61	57	170
• Event rate (95% CI) per 1000 person-years	20.7 (18.8, 22.9)	27.7 (18.2, 42.1)	44.9 (34.9, 57.7)	47.3 (36.5, 61.3)	71.6 (61.6, 83.3)
• Hazard ratio (95% CI)	ref	1.35 (0.88, 2.07)	2.20 (1.68, 2.88)	2.33 (1.77, 3.07)	3.57 (2.99, 4.27)
Heart failure hospitalization					
• Number of events	123	4	24	21	63
• Event rate (95% CI) per 1000 person-years	6.0 (5.0, 7.1)	5.0 (1.9, 13.4)	17.7 (11.9, 26.5)	17.6 (11.5, 27.0)	32.1 (25.1, 41.2)
• Hazard ratio (95% CI)	ref	0.85 (0.31, 2.30)	3.02 (1.95, 4.68)	3.01 (1.90, 4.79)	5.53 (4.08, 7.49)
Death					
• Number of events	352	20	51	43	142
• Event rate (95% CI) per 1000 person-years	16.8 (15.2, 18.7)	25.0 (16.1, 3.8.8)	36.5 (27.8, 48.1)	34.3 (25.5, 46.3)	57.6 (48.8, 67.8)
• Hazard ratio (95% CI)	ref	1.50 (0.95, 2.35)	2.21 (1.64, 2.96)	2.07 (1.51, 2.84)	3.53 (2.91, 4.29)

HFpEF, heart failure with preserved ejection fraction.