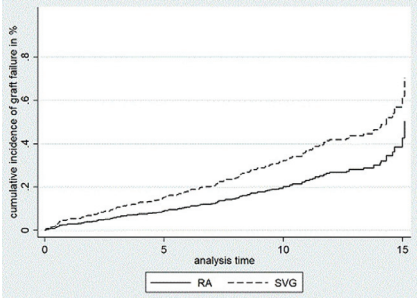
subsequent target revascularization among non-ITA grafts in patients undergoing MAR using competing risk analysis.
Methods: A prospective longitudinal follow-up study of 1654 patients undergoing MAR between 2001 and 2016 is presented. During a median follow-up of 7.4±4.0 years (11914 patient years), major cardio- and cerebrovascular events (MACE) and graft patency were assessed through clinical manifestation, coronary angiography (CA) or coronary computed tomography (CTA). In patient-wise analysis, Kaplan-Meier and multivariable Cox regression was performed to analyse survival, MACE- free survival and repeat revascularization. In graft-specific analysis, graft patency was evaluated with competing risk analysis. All multivariable models were adjusted or stratified for a propensity-score including relevant clinical and graft-specific variables. Graft stenosis of more than 70%, string phenomenon and graft occlusion were defined as non-functioning grafts.
Results: BITA grafting was performed in 910 patients (55.0%) and 744 patients (45.0%) received a LITA graft together with at least one RA. Among BITA patients, 187 patients also received a RA as a third arterial conduit (187 patients, 20.6%). Propensity-score stratified Cox proportional hazards analysis identified BITA grafting to be associated with improved long-term survival (HR: 0.60; 95% CI: 0.39–0.93; p=0.022), MACE-free survival (HR: 0.32; 95% CI: 0.22–0.45; p<0.001), and lower need for repeat revascularization (HR: 0.54; 95% CI: 0.36–0.91; p=0.003) compared to LITA+RA±SVG.
Among 455 patients (27.5%), 373 underwent CA and 82 patients received CTA. In univariable graft analysis, LITA and RITA grafts showed highest graft patency (LITA vs. RITA: log-rank p=0.47), and RA grafts were superior regarding patency compared to SVG (RA vs. SVG: log-rank p<0.001). Among CA/CTA studied grafts, in-situ RITA was associated with significantly higher patency rate compared to RITA-free grafts (94.7% vs. 83.9%, log-rank p=0.039). Propensity score-adjusted competing risk graft analysis included 533 LITA (33.3%), 161 RITA (10.1%), 419 RA (26.2%) and 487 SVG (30.4%) at risk. Adjusted competing risk analysis revealed RA grafting to be associated with significantly lower risk for graft occlusion compared with SVG (SHR: 0.61; 95% CI: 0.45–0.82; p=0.001). Furthermore, RA grafting was associated with significantly lower rates for target revascularization (SHR: 0.57; 95% CI: 0.35–0.94; p=0.001).



Cumulative incidence function: RA vs SVG

Conclusions: In MAR, the use of in-situ RITA shows similar long term patency compared to LITA. Compared to SVG, RA shows superior long term patency and a lower need for future target vessel revascularization.

P1246
A new approach to intra- and early postoperative glycemic control in patients with IHD and diabetes mellitus type 2 undergoing CABG

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Objectives: The aim of our study was to assess the continuous glucose monitoring (CGMS) efficacy in association with insulin pump therapy in patients with IHD and diabetes mellitus type 2 (DM2) undergoing CABG in intra- and early postoperative periods.
Methods: The study involved 86 patients (mean age 62+6, 6 years) undergoing isolated CABG in our center between April 2016 and November 2017. Patients were divided into two groups: 39 patients with DM2 and 47 patients without DM2. In both groups of patients we used CGMS in intra- and early postoperative periods (72 hours). Moreover, in patients with severe DM2 CGMS was associated with insulin pump therapy (MiniMed Paradigm Veo 554/754) to successful intra- and postoperative glucose controlling. Blood samples were taken before surgery, and then at one hour, 12 hours, 7 days, and 1 year after the operation. Besides commonly used tests (such as HbA1C, CRP, etc.), we analyzed asymmetric dimethylarginine (ADMA), leptin and adiponectin levels in order to estimate their prognostic value.
Results: During 48 hours after surgery there was a trend to high glucose levels in both groups of patients. However, the use of Paradigm Veo in patients with severe DM2 resulted in glycemic control improving in early follow-up (72 hours). In addition, ADMA levels were lower in intra- and early postoperative periods in patients using Paradigm Veo compared to patients prescribed bolus insulin therapy (p=0, 0001). The incidence of pericarditis was also lower in the early postoperative period in patients using Paradigm Veo compared to patients prescribed bolus insulin therapy (p=0, 034). Furthermore, at 1 year post- CABG, significantly lower leptin levels and higher adiponectin levels were revealed in patients using Paradigm Veo in the perioperative period (p=0,047; p=0, 021).
Conclusions: We demonstrated the CGMS feasibility, safety, and efficacy in association with insulin pump therapy in patients with severe DM2 undergoing CABG. Our study revealed decreased ADMA and leptin levels, and increased adiponectin levels in patients using Paradigm Veo in the perioperative period.

P1247

ABSTRACT WITHDRAWN

SPECIALS IN CARDIOLOGY: OBSTRUCTIVE SLEEP APNEA AND TAKOTSUBO SYNDROME

P1248
Impact of adherence to continuous positive airway pressure on the long-term clinical outcomes in patients with acute myocardial infarction and obstructive sleep apnea

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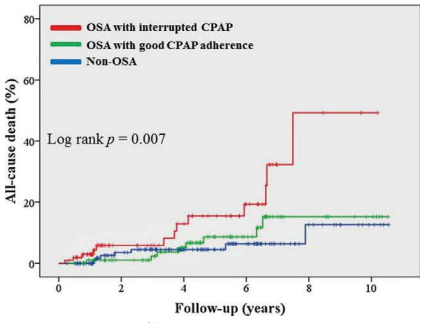
Background: Untreated obstructive sleep apnea (OSA) can have adverse effects on the long-term prognosis in patients with acute myocardial infarction (MI).
Purpose: In the current study, we aimed to assess our hypothesis that adherence to continuous positive airway pressure (CPAP) may be a key determinant in the long-term prognosis of acute MI patients with moderate to severe OSA.
Methods: We recruited 349 patients who underwent primary percutaneous coronary intervention and polysomnography at twelfth day after admission. Control patients were defined as those with an apnea-hypopnea index (AHI) <5 events/h. Patients with an AHI ≥20 events/h were classified as those with good adherence to CPAP and those with interrupted CPAP. The primary clinical outcome measures were all-cause death, cardiac death, and major adverse cardiac events defined as a composite of cardiac death, recurrent acute coronary syndrome, and re-hospitalization for heart failure.
Results: The cumulative incidence of all-cause death and cardiac death was increased in patients with interrupted treatment (n=105) compared with those with good adherence to CPAP (n=100), and 104 controls (13% vs. 8% vs. 5%, Log rank p=0.007; 5% vs. 1% vs. 0.7%, Log rank p=0.027, respectively). The long-term clinical outcomes in patients with good adherence to CPAP and those in controls were comparable using Cox regression analysis. Multivariate Cox regression analyses showed that interrupted CPAP was an independent predictor

of all-cause death and cardiac death [hazard ratio (HR) = 3.01, 95% confidence interval (CI) 1.18–7.66, p=0.021; HR = 11.2, 95% CI 1.27–98.3, p=0.029].



All-cause death and CPAP adherence

Conclusion: Interrupted CPAP was observed to be a significant risk factor for all-cause death and cardiac death in patients with moderate to severe OSA. Good adherence to CPAP ensured a prognosis comparable to that in controls.

P1249
Obstructive sleep apnea is associated with lower mortality and lower risk of cardiac complications from myocardial infarction: a nationwide analysis using the national inpatient database of 2014

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Background: Obstructive sleep apnea (OSA) is associated with increased risk of cardiovascular diseases (CVD). Yet, outcomes of CVD in patients with OSA are unclear. Some studies have indicated that patients with OSA have less severe cardiac injury with non-fatal myocardial infarction (MI), which has been attributed to cardioprotective role of intermittent episodes of hypoxia via ischemic preconditioning. The association between the diagnosis of OSA and mortality from myocardial infarction has not been studied in a large cohort of patients.
Methods: In a retrospective cohort study, using the 2014 Nationwide Inpatient Sample (NIS), we analyzed adult patients with MI, who had diagnosis of OSA. The goal of our study was to determine if diagnosis of OSA affects primary and secondary outcomes of MI. We adjusted our results for potential confounders including age, sex, race, hospital location, hospital teaching status, insurance type, hospital bed size and the Charlson Comorbidity Index.
Results: We identified 608795 patients with diagnosis of MI, who were further divided into subpopulations with and without OSA. In the OSA group (n=38755) less patients were female (27%) than in non-OSA group (39%) and patients were younger (mean age of 64 and 67 years respectively). OSA was associated with lower mortality (OR=0.66, 95% CI=0.58–0.75) and lower risk of cardiac arrest (OR= 0.79, 95% CI=0.70–0.90). It was also associated with shorter length of stay (Coef.=0.33, 95% CI= 0.21–0.46) as well as lower total charges from length of stay (Coef.=-2252.26, 95% CI= -4248.34- -256.19). As expected, patients with OSA were more likely to use Bilevel Positive Pressure ventilation (OR=3.2, CI=2.86–3.59). OSA was not associated with risk of shock, mechanical ventilation and dialysis due to AKI.
Conclusion: The diagnosis of OSA is associated with lower mortality, lower risk of cardiac arrest, as well as a shorter length and cost of stay in patients with MI.

P1250
Association of obstructive sleep apnea with cardiovascular outcomes in patients with acute coronary syndrome: a landmark analysis from the OSA-ACS project

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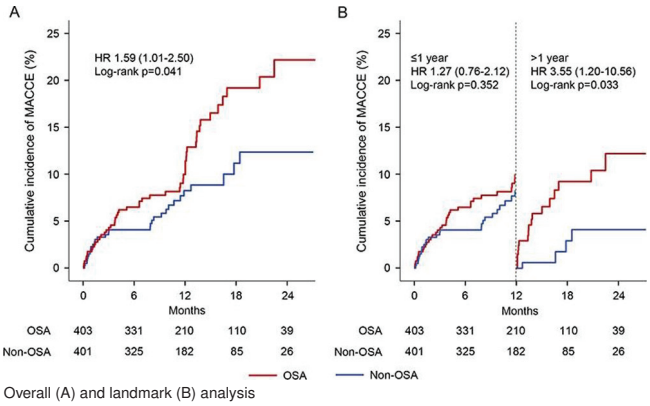
Background: The prognostic significance of obstructive sleep apnea (OSA) in patients with acute coronary syndrome (ACS) in the contemporary era is unclear.
Purpose: As guideline-based optimal medical therapy was administered after ACS onset, especially within 1 year, we hypothesized that the impact of OSA on cardiovascular outcomes would vary across different time periods after ACS presentation. Therefore, we performed a large prospective cohort study and did a landmark analysis to delineate the association of OSA with subsequent cardiovascular events in ACS patients.
Methods: The OSA-ACS project is a large-scale, prospective, observational study to assess the association of OSA with long-term outcomes of patients with ACS in the contemporary era. Between June 2015 and May 2017, consecutive eligible patients admitted for ACS underwent overnight cardiorespiratory polygraphy during hospitalization. OSA was defined as an apnea-hypopnea index ≥15 events h^{-1}. The primary endpoint was major adverse cardiovascular and cerebrovascular event (MACCE), including cardiovascular death, myocardial infarction, stroke, ischemia-driven revascularization, or hospitalization for unstable angina or heart failure. This study conformed to the principles of the Declaration of Helsinki.
Results: OSA was present in 403 of 804 (50.1%) patients. During median follow-up of 1 year (0.7–1.7), 81 (10.1%) patients had MACCE - 51 (12.7%) in the OSA group and 30 (7.5%) in the non-OSA group. The cumulative incidence of MACCE was significantly higher in the OSA group than in the non-OSA group (log-rank P=0.041). Multivariate analysis showed OSA tended to be a predictor of MACCE (HR 1.56, 95% CI 0.94–2.61, P=0.087, Figure). In the landmark analysis, patients with OSA had 3.6 times the risk of incurring a MACCE after 1 year (HR 3.55, 95% CI 1.20–10.56, P=0.023), but no increased risk was found within 1-year follow-up (HR 1.27, 95% CI 0.76–2.12, P=0.353, Figure). No significant differences were found in the incidence of cardiovascular death, myocardial infarction, and ischemia-driven revascularization, except for a higher rate of hospitalization for unstable angina in the OSA group than in the non-OSA group (HR 2.33, 95% CI 1.18–4.58, P=0.014).



Overall (A) and landmark (B) analysis

Conclusion: Patients with OSA had a greater risk of MACCE after ACS, which was driven by a higher incidence of events after 1 year. The efficacy of OSA treatment as secondary prevention of MACCE, and timing of intervention after ACS, require further investigation.
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P1251
Impact of obstructive sleep apnea on circadian variation of infarct size in patients with acute myocardial infarction

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Background: Previous studies have shown that the circadian variation of the sympathetic nerve activity, blood pressure, and platelet activity in patients with obstructive sleep apnea (OSA) is different from that observed in non-OSA patients. However, to our knowledge, the impact of OSA on circadian variation of infarct size has not been investigated.
Purpose: In this study, we aimed to determine whether OSA shows a characteristic circadian variation of the infarct size in patients with ST-segment elevation myocardial infarction.
Methods: We recruited 720 patients who underwent primary percutaneous coronary intervention (PCI) within 12 h of symptom onset and polysomnography at 12 days. Infarct size was estimated on the basis of the peak creatinine kinase (CK) level. OSA was defined as an apnea-hypopnea index (AHI) of ≥15 events/h. The

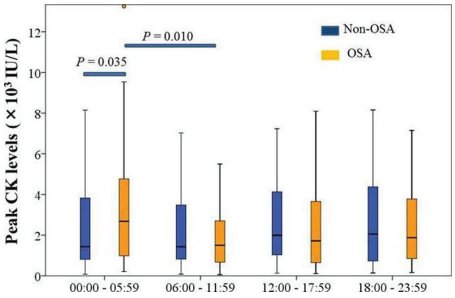

Figure 1