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The impact of statin therapy in the patients with vasospastic angina: multicenter registry study of the Japanese coronary spasm association

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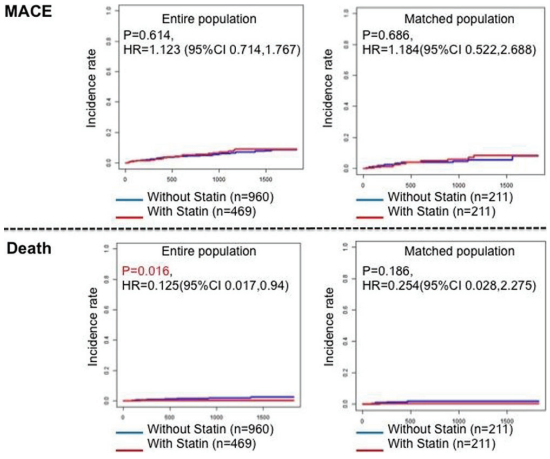
Background: Limited studies have shown that statin therapy may be effective on clinical outcome in patients with coronary vasospastic angina (VSA). Its evidences have not accumulated enough.
Purpose: We tried to assess the impact of statin therapy in patients with VSA from multicenter registry study of Japanese coronary spasm association.
Methods: In multicenter registry study of Japanese coronary spasm association, a total of 1429 patients (median, 66 years; male/female, 1090/339) were enrolled. Patients with or without Statin were compared. The primary endpoint was major adverse cardiac events (MACE; all cause of death, admission due to angina attack, proper operation of implantable cardioverter-defibrillators). The propensity score matching and multivariable Cox proportional hazard model were used to adjust for selection bias for treatment and potential confounding factors.
Results: In MACE, there was no statistical difference between patients with or without statin (P=0.614 before matching, P=0.686 after matching). In all cause of death, before propensity score matching adjustment, patients with statin showed low mortality than in patients without statin (P=0.016). However, this difference was not observed after propensity score matching adjustment (P=0.186).



Conclusion: In this multicenter registry, statin therapy was not effective for patients with VSA.

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Daytime variation of infarct size in STEMI patients

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Background: Circadian clock modulates the main physiological functions. Recently, Montaigne et al. demonstrated in patients undergoing aortic valve replacement that perioperative myocardial injury was orchestrated by the circadian clock and afternoon surgery was associated with improved outcomes compared with morning surgery. However, conflicting data exist with regard to the influence of circadian rhythm on ST elevated myocardial infarction (STEMI).
Purpose: The aim of our study was to evaluate if myocardial infarct size (IS) was modulated according to daytime reperfusion. We also wanted to evaluate if post-myocardial infarction inflammation was modulated by circadian rhythm.
Methods: We selected 115 patients from our institutional STEMI prospective cohort. Based on the recent study by Montaigne et al., two groups were considered according to the time of the day of reperfusion: a "morning" group when primary percutaneous coronary intervention (PPCI) reperfusion occurred from 6:01 am to noon and an "afternoon" group when PPCI reperfusion occurred from 12:01 am to 6:00 pm. IS was assessed using Cardiac magnetic resonance imaging (ce-CMR) and troponin I serum release. Interleukin(IL)-6, IL-8 and IL-10 were assessed in patient's serum using ELISA and C-reactive Protein (CRP) using immuno-chemiluminescence.
Results: There was no significant difference in term of gender, hypertension, smoking, history of prior coronary artery disease between the two groups. Mean ischemia time was comparable between the two groups, with 165 min IQR [116–225] in the morning group and 165 min [110–235] in the afternoon group. Infarct-related artery was similar in the two groups. Mean IS was significantly smaller in the morning versus the afternoon group, with 13 g IQR [5–20] and 8,5 g IQR [5–16], respectively (p=0.04). Similarly, the area under the curve of troponin I release was significantly smaller in the afternoon versus the morning group (p=0.03). At 24 hours post-PPCI, CRP was significantly lower (-54%) in the afternoon versus the morning group (5.9 mg/L [4.2–13.6] versus 12.7 mg/L [9.4–22.1], p=0.004). Similarly, IL-6 was significantly lower (-30%) in the afternoon group when compared to the morning group (respectively: 1.9 pg/mL [1.5–3.7] versus 2.7 pg/mL [1.9–4.7], p=0.05). There were no differences in IL-8 or IL-10 level between the two groups. Mean follow-up was 21.3±7.2 months. We did not observe any difference between the two groups in term of long term outcome.
Conclusion: In our study we found an influence of circadian rhythm on IS and inflammation. Further studies are needed to study the impact and genetic mechanisms related to circadian rhythm and MI.
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P1682
Impact of gender difference on five-year clinical outcomes in coronary artery spasm patients using propensity matching analysis

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Background: Gender difference of cardiovascular disease have demonstrated in several studies but the investigation in patients with significant coronary artery spasm (CAS) is limited.
Purpose: The aim of this study is to investigate the impact of gender difference on long-term prognosis of CAS in Korean population.
Method: A total of 3,110 patients (1575 men and 1535 women) with CAS on intracoronary acetylcholine provocation test between 2004 and 2014 were enrolled for this study. Primary endpoint was major adverse cardiac events (MACE), composite of death, myocardial infarction, and revascularization, and secondary endpoint was recurrent angina requiring repeat coronary angiography up to five years.
Results: To adjust for confounders, the propensity score matching (PSM) analysis was performed. Two matched groups (713 pairs, n=1426) were generated and baseline characteristics were balanced. The incidences of MACE and recurrent angina up to five years were similar between the two groups. (Table 1) In cox regression analysis for predicting five- year MACE, old age (Hazard ratio (HR) 1.09, p=0.006) and moderate stenosis (50–70%, HR 6.15, P=0.036) were significant predictors in male patients, and moderate stenosis (30–50%, HR 18.1, p=0.04) was a significant predictor in female patients. In cox regression analysis for predicting five-year recurrent angina, moderate stenosis (50–70%, HR 2.83, p=0.002) was a significant predictor in male patients and myocardial bridge (HR 1.7, p=0.034) was a significant predictor in female patients.

Table 1. Clinical Outcomes up to five years

Variables, N (%)	Entire Patients			Matched Patients		
	Male (n=1575)	Female (n=1535)	Log Rank	Male (n=713)	Female (n=713)	Log Rank
MACE	13 (1.2)	7 (0.6)	0.201	4 (0.8)	3 (0.6)	0.688
Total death	5 (0.4)	3 (0.3)	0.502	1 (0.1)	2 (0.4)	0.581
Cardiac death	2 (0.1)	1 (0.0)	0.578	0 (0.0)	1 (0.1)	0.322
Myocardial infarction	4 (0.2)	2 (0.1)	0.432	1 (0.2)	0 (0.0)	0.316
Revascularization	5 (0.6)	2 (0.1)	0.278	3 (0.7)	0 (0.0)	0.081
Recurrent angina	104 (10.7)	77 (7.8)	0.059	41 (9.4)	29 (5.3)	0.127

Conclusions: In this study, gender difference was not a significant predictor for long term adverse clinical outcomes and recurrent angina in CAS patients. However, in male and female patients, remaining moderate stenotic lesion was associated with five- year MACE, and myocardial bridge in female patients and remaining moderate stenotic lesion were associated with recurrent angina during five-year follow up.

P1683
MURC/Cavin-4 deletion protects murine heart from ischemia-reperfusion injury

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Background: Ischemia-reperfusion (I/R) injury is considered as an important issue in strategy for ischemic heart disease despite the development of revascularization therapy. Muscle-restricted coiled-coil protein (MURC)/Cavin-4 belongs to the cavin family, which is a component of caveola. We previously reported that MURC/Cavin-4 is involved in myofibrillar organization and cardiomyocyte hypertrophy. MURC/Cavin-4 mutations are observed in patients with dilated cardiomyopathy. However, the involvement of MURC/Cavin-4 in cardiac I/R injury remains unknown.
Methods and results: I/R model of mice heart was created by 1h ligation of left anterior descending artery, followed by 24h reperfusion. TTC staining showed that MURC/Cavin-4-/- mice exhibited significantly smaller infarct size (IS), which was