The development of hospital mortality over time in the different BMI groups is represented in figure 1.
The inverse relation of higher BMI and lower mortality maintained throughout treatment periods 2001–2015. However, a U-shaped relation (2001–03) was replaced by a more J-shape relation as also very obese patients showed no increased mortality in recent years.
Conclusion: The obesity paradigm in patients with acute myocardial infarction is confirmed in this large registry and is maintained despite changes in acute coronary therapy over time. Patients with overweight and obese patients show a better survival after AMI than normalweight. By contrast, patients with underweight have increased risk of mortality. The obesity paradigm is independent of smoking status and comorbidities or treatment regimen.

P4633 | BEDSIDE
Relationship between circadian variation and plaque characteristics in patients with ST-segment elevation myocardial Infarction

S. Furudono[1], Y. Mashimo[1], T. Fukushima[1], M. Kurobe[1], S. Muto[1], H. Suenaga[1], T. Nunohiro[1], S. Takeshita[1], H. Nakashima[1], K. Maemura[2]. *[1]Nagasaki Harbor Medical Center City Hospital, Department of Cardiology, Nagasaki, Japan; [2]Nagasaki University Hospital, Department of Cardiovascular Medicine, Nagasaki, Japan*

Background: The relationship between circadian variation and plaque characteristics have never been investigated in acute myocardial infarction.
Aims: To examine the effects of circadian variation on plaque characteristics in patients with ST-segment elevation myocardial infarction (STEMI).
Methods: This study included 106 patients with STEMI who underwent primary percutaneous coronary intervention within 24 h of onset. Optical coherence tomography was used to assess plaque features of the culprit lesion. Patients were divided into two groups: morning onset group (myocardial infarction onset between 06:00 to 11:59) and the others.
Results: Thirty three patients (31.7%) were in the morning onset group. There was no difference in minimal lumen area, length of thrombi, plaque erosion and incidence of plaque rupture between the two groups. However the presence of thin-cap fibroatheroma (TCFA) was significantly higher in patients of the morning onset group than in the others (76% vs. 41%, p=0.0005). Also, the fibrous cap thickness was significantly thinner in the morning onset group than in the others (72.5±20.1 μm vs. 92.9±37.1 μm, p=0.0034). Multivariable logistic regression analysis adjusted for morning onset, age ≥75 years, hypertension, diabetes mellitus, dyslipidemia, and current smoking identified morning onset as an independent predictor of the presence of TCFA (odds ratio = 5.2, 95% confidence interval: 2.05–14.3, p=0.0004).

Predictor of the presence of TCFA

	Odds ratio (95% CI)	p value
Morning onset	5.18 (2.05–14.3)	<0.001
Age ≥75yo	1.84 (0.69–5.07)	0.222
Hypertension	1.17 (0.42–3.33)	0.766
Diabetes mellitus	1.23 (0.52–2.91)	0.635
Current smoking	1.35 (0.50–3.71)	0.549
Dyslipidemia	1.44 (0.53–4.02)	0.467

Conclusion: The main findings are that patients with morning onset of STEMI may have more vulnerable plaque characteristics.

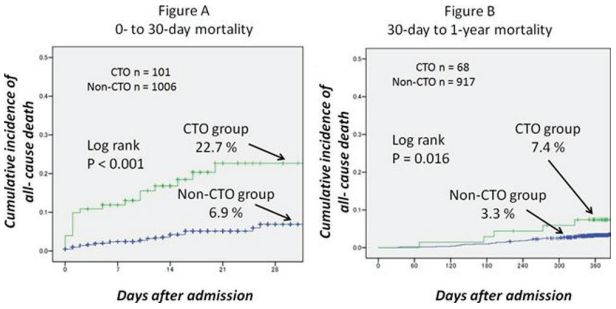
P4634 | BEDSIDE
The clinical impact of chronic total occlusion on acute myocardial infarction patients from mie acs registry

M. Kato[1], J. Masuda[2], M. Kakimoto[2], K. Dohi[2], A. Kawasaki[2], T. Kitamura[2], A. Iwata[2], H. Suzuki[2], M. Miyahara[2], H. Nishikawa[2], M. Ito[2] on behalf of MIE CCU network. *[1]Mie Heart Center, Mie, Japan; [2]Mie CCU Network, Mie, Japan*

Objective: Previous studies reported the concomitant chronic total occlusion (CTO) in a non-infarct-related-artery (IRA) in the setting of acute myocardial infarction (AMI) was associated with poor prognosis. However, these studies were confounded with several limitations such as relatively small sample and retrospective studies of single center.
Methods: We analyzed consecutive 1107 patients (861 men, and mean age 68±13 years old) with AMI who were enrolled in the Mie ACS Registry, which is a prospective and multicenter registry consisting of 15 hospitals with cath labo facilities in Japan, between January 2013 and December 2014. Patients were divided into two groups (CTO group: patients with CTO in non-IRA, n=101; non-CTO group: patients without CTO, n=1006). Primary end point was defined as all-cause mortality.
Results: During average follow-up time of 406 days (range, 1 to 1052 days), 112 patients (10.1%) reached primary end point. The clinical characteristics of the 2 groups were shown in the table. CTO group had higher prevalence of Killip class 3 to 4 and received less emergent PCI procedure. The 30 days mortality of CTO group was significantly higher than that of non-CTO group (Figure A; 22.7% versus 6.7%; Logrank p<0.001), and 30-day to 1-year mortality of CTO group were also significantly higher (Figure B; 7.4% versus 3.3%; p=0.016). In multivariate analysis, the concomitant CTO was an independent predictive factor for 0- to 30-day mortality (hazard ratio: 2.84; 95% confidence interval (CI): 1.64–4.91, p<0.001), but not for 30-day to 1-year mortality (hazard ratio: 1.43; 95% CI: 0.64–3.20, p=0.39).

Clinical characteristics

	CTO (n=101)	Non-CTO (n=1006)	P value
Age	70.0±12.7	67.5±12.9	0.056
Male	80 (79.2%)	781 (77.6%)	0.80
DM	38 (37.6%)	333 (28.6%)	0.067
Cr	1.11±0.83	0.97±0.79	0.11
Killip classification			<0.001
I	51 (51%)	815 (81%)	
II	18 (18%)	85 (8.4%)	
III	13 (13%)	43 (4.3%)	
IV	19 (19%)	57 (5.7%)	
Emergent PCI	77 (76%)	900 (90%)	<0.001



Conclusions: The concomitant CTO in a non-IRA of AMI patients was the independent predictor of short term outcomes, but not of mid-term outcomes.

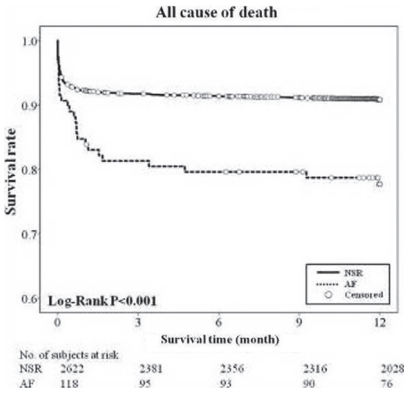
P4635 | BEDSIDE
Mortality rate of patients with atrial fibrillation in STEMI, and mortality prediction factors in this high risk group

J.W. Bae[1], S.Y. Eom[2], K.K. Hwang[1], S.M. Kim[3], S.Y. Lee[3], J.H. Lee[3], D.I. Lee[3], D.W. Kim[1], M.C. Cho[1], M.H. Jeong[4] on behalf of Korea Acute Myocardial Infarction Registry (KAMIR). *[1]Chungbuk National University College of Medicine, Division of Cardiology, Department of Internal Medicine, Cheongju, Korea Republic of; [2]Chungbuk National University College of Medicine, Preventive Medicine, Cheongju, Korea Republic of; [3]Chungbuk National University Hospital, Cheongju, Korea Republic of; [4]Chonnam National University Hospital, The Heart Center, Gwangju, Korea Republic of*

Background: Atrial fibrillation (AF) is related to major adverse cardiac events (MACEs) in acute myocardial infarction (AMI).
Purpose: We tried to show the clinical impact of AF in STEMI patients who underwent primary PCI, and predictive factors to mortality in this group of patients.
Methods: To compare the 1 year mortality rate between AF and normal sinus rhythm (NSR) in STEMI patients who presented ER <12 hours after chest pain onset, and underwent primary PCI within 90 min. after ER arrival, we used the Korean Acute Myocardial Infarction Registry (KAMIR) which enrolled AMI patients (N=14,329) from 2008 to 2009.
Results: We discarded data of NSTEMI or ambiguous ECG rhythm (N=6,133), delayed presentation (N=2,188), delayed PCI (N=652), incomplete 1 year follow-

Table 1. Clinical predictive factors for mortality in AF with STEMI

	Hazard ratio	95% CI	p-value
Age (year)	1.60	0.97–2.66	0.069
cTnI (1 pg/ml)	15.79	1.62–154.21	0.018
Triglyceride (1 mg/dL)	1.04	1.00–1.08	0.044
LDL-C (1 mg/dL)	0.89	0.80–0.99	0.028
NT-proBNP (1 SD)	3.37	1.34–8.49	0.010
PCI result (unsuccessful)	859.68	2.27–325387.8	0.026



1 yr mortality in AF and NSR with STEMI