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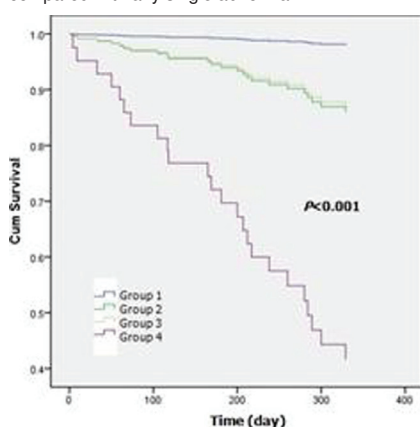


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high sensitivity cardiac troponin T (hs-cTnT), both were induced by percutaneous coronary intervention (PCI), in predicting the major adverse cardiovascular events (MACE) in patients for acute coronary syndrome (ACS) during one year follow up.

Methods: A total of 299 ACS patients who were hospitalized in the General Hospital between Aug 2015 and Oct 2015 and underwent PCI, were enrolled into this study. The parameters of serum level of creatinine and plasma concentration of cardiac troponin T (cTn T) were measured at baseline, 24 and 48 hours after PCI. AKI was defined as a relative increase of 25% or an absolute increase of 44.2 $\mu\text{mol/L}$ in serum creatinine values during 48 hours after operations, but the definition of an elevation in hs-cTnT value, was hs-cTnT >5 times of 0.1 ng/ml (>0.5 ng/ml) at 24 hours after PCI if baseline level of hs-cTnT was normal, or an increased level of hs-cTnT >20% of baseline values at 48 hours after PCI if baseline hs-cTnT values had elevated and began to fall after peak value. Patients were classified into two groups according to occurrence of AKI or not, or elevation of plasma level of hs-cTnT or not. So, there were four groups which included groups with either AKI or elevation of hs-cTnT (Group 2 and 3), or with neither (Group 1) or both of them (Group 4). All patients were followed up at least one year, and recorded MACE which included acute STEMI, NSTEMI and stroke.

Results: Prevalence of AKI and elevation of hs-cTnT after PCI were 12.7% and 33.4%, respectively. Multiple logistic regression analyses showed that age and plasma CK-MB level increased the risk of AKI, and STEM, heart rate, plasma level of hs-cTnT, serum CK-MB and LDL-c values were correlated with level of hs-cTnT, respectively. Cox regression analysis showed that patients in group 2 had higher risk of MACE compared with those in group 1 (HR: 7.623; 95% CI: 2.063–28.167; $P<0.05$). Meanwhile, patients in group 3 also had higher risk of MACE compared with those in group 1 (HR: 6.897; 95% CI: 1.152–41.281; $P<0.05$). More importantly, patients in group 4 had much greater risk of MACE compared with patients in group 1 (HR: 43.087; 95% CI: 11.817–157.098; $P<0.05$). Compared with AKI or elevation of hs-cTnT, the integrate of AKI and elevation of hs-cTnT after PCI significantly increased the incidence of MACEs during the one year follow-up, compared with any single abnormal.



Cox regression estimate of incidence of

Conclusions: In patients hospitalized with ACS and underwent PCI, although the AKI or hs-cTnT elevation after PCI both had a prognostic ability for a short-term adverse outcome, but integrate of AKI and an elevation of hs-cTnT meant more MACE and worse outcomes during one year of follow-up.

P6487 | BEDSIDE

Percutaneous coronary intervention ameliorates short-term mortality even in acute myocardial infarction patients with severe renal dysfunction

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Background: It is well known that percutaneous coronary intervention (PCI) improves mortality in patients with acute myocardial infarction (AMI), irrespective of age. However since patients with severe renal dysfunction tend to be excluded from large scale clinical trial, it remains unclear the impact of PCI on clinical outcomes in AMI patients with severe renal dysfunction.

Purpose: The aim of this study was to investigate whether PCI improves short-term mortality in AMI patients with severe renal dysfunction.

Methods: We used data from the Yamagata AMI Registry from 1997 to 2015, which covers entire Yamagata prefecture Japan. Severe renal dysfunction was defined as estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m². Of 10,092 registered AMI patients, there were 846 patients with severe renal dysfunction. We investigated their clinical characteristics and short-term (28 days) mortality between patients with PCI and those without.

Results: There were 330 (39%) acute deaths among 846 patients with severe renal dysfunction. Patients with acute death was elder compared to those without (81 vs. 77 years). Prevalence of male was significantly lower in patients with acute death compared to those without (47% vs. 53%). Prevalence of hyperten-

sion and dialysis was no significant differences in patients with acute death compared to those without. Prevalence of dyslipidemia, diabetes mellitus (DM) and smoking history was significantly and paradoxically lower in patients with acute death compared to those without. No significant differences were observed in eGFR between patients with and without acute death. Prevalence of Killip classification grade III/IV and stroke history was significantly higher in patients with acute death compared to those without (73% vs. 34%, 30% vs. 24%). Prevalence of acute death was significantly lower in patients with PCI compared to those without (28% vs. 53%). Multivariate regression analysis of acute death showed that PCI was independent risk factor for prognosis of AMI after adjustment for age, gender, dyslipidemia, DM, smoking history, Killip classification, and stroke history which showed significant differences in univariate analysis (Odds ratio 0.52, 95% confidence interval 0.33–0.81).

Conclusion: PCI may improves the prognosis even in AMI patients with severe renal dysfunction.

P6488 | BEDSIDE

Diabetes mellitus and acute coronary syndrome: prognostic impact at 5-year follow-up

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Introduction: Diabetes Mellitus (DM) is a recognizable and well-known cardiovascular risk factor linked to a worst prognosis in patients admitted for Acute Coronary Syndrome (ACS). We aim to study the implications, features and prognosis of a diabetic population with a history of ACS on a 5-year term.

Methods: Prospective registry of 309 consecutive patients presenting with Acute Coronary Syndrome between October 2009 and September 2011, divided into 2 groups: A) with DM (n=100, 59.0% in the male category); B) without DM (n=209, 66.5% in the male category). A comparison was made between these groups regarding a primary composite endpoint - PCE (consisting of reinfarction, stroke and cardiovascular death) and secondary objectives (reinfarction, stroke and cardiovascular death alone) after 5-years of follow-up. Patients who died before the five-year stage, were excluded from the analysis.

Results: Regarding basal characteristics, group A was older (A=69.5±10.7 vs B=65.0±13.7, $p=0.004$) and more likely to experience a stroke (A=16.0% vs B=6.2%, $p=0.007$), develop chronic heart failure (A=9.0% vs B=2.9%, $p=0.022$), hypertension (A=84.0% vs B=57.9%, $p<0.001$), dyslipidemia (A=62.0% vs B=44.5%, $p=0.003$) and chronic renal disease (A=10.0% vs B=3.3%, $p=0.019$). A lower number of patients from group A presented with typical chest pain on admission (A=75.0% vs B=86.6%, $p=0.01$), often valuing atypical complaints. STEMI prevalence did not differ significantly between groups (A=35.0% vs B=42.6%, $p=ns$). Diabetic patients were more likely to have multivessel disease (A=51.3% vs B=34.3%, $p=0.008$) and less likely to be considered for percutaneous coronary intervention when choosing a revascularization therapy (A=54.0% vs B=67.9%, $p=0.012$), although no differences were found regarding invasive stratification, as they were equally submitted to coronary angiography. Group A also presented a higher in-hospital overall mortality rate (A=16.0% vs B=6.7%, $p=0.01$) and higher risk of experiencing a primary composite outcome (A=37.0% vs B=15.5%, $p<0.001$) and overall mortality (A=34.0% vs B=14.0%, $p<0.001$) at 1 year of follow-up. After 5 years of follow-up, both groups reached the PCE in a similar fashion, thus overall mortality, stroke and reinfarction rates were alike.

Conclusion: Diabetes is a common comorbidity in patients presenting with Acute Coronary Syndrome. These patients seem to face worst prognosis either on admission or at 1-year follow-up, despite no differences being found between groups when considering cumulative mortality after 5 year follow-up.

P6489 | BEDSIDE

Nephroprotective effect of ischemic preconditioning in contrast-induced nephropathy in patients with mild chronic kidney failure

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Contrast-induced nephropathy (CIN) is a formidable side effect of iodinated contrast medium use in subjects undergoing coronary angiogram (CAG). Remote ischemic preconditioning (RIPC) may reduce the risk of CIN.

Aim was to investigate the nephroprotective effects of RIPC in coronary heart disease (CHD) in patients, undergoing CAG, with mild to moderate lowered estimated glomerular filtration rate (eGFR).

Materials: 459 patients undergoing CAG were screened for mild to moderate glomerular filtration rate decrease and 51 patients were chosen. In the randomized, blinded, sham RIPC (sRIPC) controlled study 51 patients with CHD and GFR less than 80 mL/min/m², undergoing CAG, were investigated. The patients were randomized for RIPC (n=26, 60.5±2.0 years) or sRIPC (n=25, 62.96±1.7). RIPC was performed before the CAG by means of 3–5-minute cycle cuff pumped on the upper arm + 50 mm Hg above the systolic blood pressure (BP), while in sRIPC it corresponded to diastolic BP. The primary endpoint was the development of CIN and secondary – change of biomarkers (creatinine, urea, neutrophil gelatinase-associated lipocalin (NGAL), cystatin-C).

Results: In RIPC group, CIN occurred in 28% of cases, while in sRIPC –3.8%.

All investigated markers increased in sRIPC and declined in RIPC; the difference was significant in markers between the groups before and after CAG.

Changes in cystatin-C and NGAL values

	Cystatin-C, mg/ml		NGAL, pmol/dl	
	RIPC	sRIPC	RIPC	sRIPC
Baseline	4.17±0.54	3.2±0.32	5.25±4.07	8.30±2.7
Follow-up	3.2±0.32† (p=0.041)	3.83±0.51 (p=0.073)	12.87±3.01 (p=0.078)	13.24±3.5† (p=0.057)
Difference, Δ	0.97±0.49	-0.62±0.39* (p=0.018)	2.38±2.02	-4.9±0.38** (p=0.0024)

Note: †p<0.05 when compared before and after CAG; *p<0.05, **p<0.001 significance of difference between the RIPC/sRIPC groups.

Conclusions: RIPC proved nephroprotective effect in prevention of contrast-induced nephropathy in CHD subjects with mild to moderate lowered eGFR.

P6490 | BEDSIDE

CHA2DS2-VASc score is associated with coronary atherosclerotic burden in acute coronary syndrome patients

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Background: Although the CHA2DS2-VASc score has been initially recommended for the assessment of the risk of thromboembolic event in patients with atrial fibrillation, in recent years, it is used to predict adverse outcomes in various cardiovascular diseases. However, little is known about its predictive value for coronary atherosclerotic burden in patients with acute coronary syndrome (ACS). The aim of this study was to investigate whether the CHA2DS2-VASc score could predict higher coronary atherosclerotic burden assessed by SYNTAX score (SS) in ACS.

Methods: A total of 2222 ACS patients (mean age 59.8±12.7 years) who underwent coronary angiography were divided into three SS tertiles stratified by SS: low (≤22) (n=1445); intermediate (23–32) (n=556); high (≥33) (n=221).

Results: The mean CHA2DS2-VASc score was 2.71±1.51 (range 1 to 9) and CHA2DS2-VASc score was higher in patients with high SS than in those with intermediate and low SS (4.24±1.49, 2.89±1.49, and 2.40±1.36; respectively, p<0.001). In multivariate analysis, CHA2DS2-VASc score ≥4 (OR 3.048, 95% CI 1.658–5.617, p<0.001) was an independent predictor of high SS as well as body mass index (OR 0.929, p=0.015), chronic total occlusion (OR 11.363, p<0.001), current smoker (OR 0.476, p=0.026), chronic renal disease (OR 1.828, p=0.033). The CHA2DS2-VASc score was also an independent predictor for in-hospital mortality.

Conclusion: The CHA2DS2-VASc score, as a simply calculated and reliable tool, is independently associated with high SS and in-hospital mortality in patients with ACS. Thus, this score provides an additional level of risk stratification regarding coronary atherosclerotic burden beyond that provided by traditional risk factors.

P6491 | BEDSIDE

One-year clinical outcome and predictors of adverse events after percutaneous coronary intervention in elderly patients

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Background: Elderly patients constitute a high-risk subset of patients and represent a rapidly growing cohort for PCI in real-world clinical practice. Unfortunately, these patients are frequently under-represented in clinical revascularization trials.

Purpose: The aim of this study was to investigate clinical outcome and predictors of adverse events after percutaneous coronary intervention (PCI) in elderly (≥75 years old) patients.

Methods: All patients with ≥75 years who underwent elective or urgent PCI at our institution from 2012 to 2015 were enrolled in this single-centre observational registry. The primary endpoint was the device-oriented composite endpoint (DOCE) of cardiac death, myocardial infarction and target-lesion revascularization (TLR). Secondary endpoints were the rates of death, cardiac death, myocardial infarction (MI), TLR, target-vessel revascularization (TVR), definite or probable stent thrombosis (ST), and Bleeding Academic Research Consortium (BARC) bleeding.

Results: 723 unrestricted consecutive ≥75 years old patients were enrolled in this study. Diabetic patients were 27%, while 23% of patients were affected by chronic kidney disease (CKD) and 17% by atrial fibrillation; 35% of patients presented with acute coronary syndrome. 80% of patients were treated only with DES and 20% only with BMS. At 1-year follow-up (mean time 502±331 days), the DOCE was reported in 69 patients (12.1%); of these, 38 patients had a cardiac death (6.6%), 29 patients had myocardial infarction (5.1%) and 31 patients had a TLR (5.4%); TVR was reported in 44 patients (7.7%), while 8 patients (1.4%) experienced a definite ST. BARC-2 bleeding was reported in 45 patients (7.9%). At the multivariate analysis with binary logistic regression, low ejection fraction (LVEF), CKD, total stent length and a dual antiplatelet therapy (DAPT) course shorter than 12 months were independent predictors for cardiac death; a low

LVEF was found to be the only predictors for MI; use of bare metal stent (BMS) was the only independent predictors for TLR; triple antithrombotic therapy was the only independent predictors of bleeding (both for BARC-2 type and BARC-3).

Conclusions: In this real-world experience, elderly patients reported reassuring efficacy and safety outcomes after PCI. Total stent length, the presence of low LVEF and CKD, and DAPT course for less than 12 months were found to be predictors for cardiac death, while the use of BMS was the only predictor of TLR. Triple antithrombotic therapy was the only predictors for BARC-2–3 bleeding events.

P6492 | BEDSIDE

Does testosterone promote and dehydroepiandrosterone sulphate prevent coronary artery disease in young women?

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Background: The observed increase in the prevalence of coronary artery disease (CAD) in menopausal women is considered to be related to the lack of estrogens. However, even advanced stages of CAD are found in young women, despite preserved function of their ovaries.

Purpose: The aim of our study was to evaluate the relationship between CAD and concentrations of sex steroids in menstruating women.

Methods: CAD-group consisted fifty-two women at mean age 42.6±3.3 years with angiographically confirmed CAD; 38 of whom had previously suffered a myocardial infarction. The reference group (healthy-group) was composed of 28 women at a similar age and without CAD. Common clinical risk factors and typical biochemical parameters were assessed in the groups. The severity of CAD in CAD-women was evaluated by the Gensini scoring system (GS). On 4th–7th day of the menstrual cycle all women underwent the measurement of blood concentrations of follicle-stimulating hormone, luteinizing hormone, prolactin, thyroid-stimulating hormone, progesterone, cortisol, estradiol, testosterone, dehydroepiandrosterone sulfate (DHEAS) and sex hormone binding globulin.

The values of all collected variables were compared between the groups. The relationships between CAD and the levels of the hormonal parameters were evaluated by logistic regression analysis (LRA). The Pearson's correlation coefficients were calculated to assess correlations between the values of GS and the concentrations of the hormones.

Results: CAD-women revealed higher blood concentrations of testosterone (4.9±1.7 vs 2.3±0.9 nmol/l in healthy-women, p=0.001) and estradiol (249±132 vs 194±106 pmol/l in healthy-women, p=0.047). The levels of the other hormones did not differ significantly between the groups.

In LRA significant relationships were found between the presence of CAD and the concentration of testosterone, either as an isolated factor, or if accompanied by dyslipidaemia. However, the level of DHEAS in CAD-women was negatively correlated with the severity of coronary atherosclerosis (r = -0.29, p<0.05).

Conclusions: In young menstruating women, elevated blood level of testosterone predicts CAD, while higher blood concentration of DHEAS mitigates the extent of CAD.

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P6493 | BENCH

Non-classical phenotypes of circulating endothelial cell-derived progenitor cells predict asymptomatic atherosclerosis metabolically unhealthy obesity

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Background: Abdominal obesity strongly associates with multiple metabolic abnormalities (dyslipidemia, insulin resistance [IR], increased fasting glucose and impaired glucose tolerance) and higher cardiovascular (CV) risk. The aim of the study: to investigate the relation of the number of circulating EPCs in patients with established metabolically unhealthy obesity (Met-UHO) with asymptomatic atherosclerosis.

Methods: The study was retrospectively evolved 89 patients with established abdominal obesity (47 patients with Met-UHO and 42 subjects with metabolically healthy obesity [Met-HO]) from the large cohort of dismetabolic patients (n=268). Asymptomatic atherosclerosis has defined as a positive result of the coronary artery tomography-angiography. The volume of intramural calcium of >320 HU in major coronary vessels was measured in available coronary segments with a highly standardized method. Coronary artery calcification was quantified by calculating the Agatston score index and calcification mass measurement. High-Definition Fluorescence Activated Cell Sorter methodology was performed for measurement of the number of circulating endothelial progenitor cells co-expressed CD45, CD34, CD14, CD309, and Tie-2 antigens.

Results: A significant difference between number of circulating progenitor cells labeled CD45-CD34+ and CD14+CD309+ in Met-UHO and Met-HO patients was found. In contrast, Met-UHO patients had a significantly lower level of circulating CD14+ Tie-2+ cells and CD309+ Tie-2+cells compared with Met-HO individuals. In multivariate logistic regression analysis we found that HOMA-IR, hs-