

Table 1

	24 hour tirofiban maintenance	48 hour tirofiban maintenance	p Value
Age	59.07±10.69	57.67±14.30	0.254
Male Sex	37 (88%)	34 (80%)	0.612
Diabetes Mellitus	7 (16%)	5 (12%)	0.764
Hypertension	15 (35%)	12 (29%)	0.712
Smoking	23 (54%)	24 (57%)	0.762
Symptom onset to hospital arrival (hour)	3.83±2.09	4.10±2.01	0.380
Door to balloon time (minute)	45.71±15.91	50.95±35.78	0.542
Reference Vessel Diameter	3.27±0.34	3.46±0.38	0.201
5 point scoring system for perfusion defect severity			
Apex	2.90±0.95	2.04±1.43	<0.05
Apical septal	2.65±0.87	1.95±1.32	<0.05
Mid-anteroseptal	2.28±0.83	1.73±1.14	<0.05
Basal-anteroseptal	0.66±0.72	0.5±0.92	0.357
Mid-anterior	1.88±0.94	1.28±1.13	<0.05
Basal-anterior	0.11±0.32	0.33±0.75	0.095
Apical-anterior	2.69±0.81	2.0±1.43	<0.05
Apical-lateral	2.50±0.94	2.21±1.27	<0.05
Summed Rest Score	15.61±4.60	11.97±7.34	<0.05
Baseline characteristics and 5 point scoring system for perfusion defect severity results of anterior STEMI patients			

## OP-049

## SYNTAX Score is a Predictor of Angiographic No-Reflow in Patients with ST Elevation Myocardial Infarction Treated with Primary Percutaneous Coronary Intervention

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**Objectives:** The no-reflow phenomenon has a negative prognostic value in patients with acute ST elevation myocardial infarction (STEMI). SYNTAX score (SS) quantifies extent and complexity of angiographic disease and predict long-term mortality and morbidity in STEMI. We aimed to assess the no-reflow and its possible relationships with SS and clinical characteristics in patients with STEMI treated with primary percutaneous coronary intervention (PPCI).

**Methods:** In this study, 880 STEMI patients with STEMI treated with PPCI were prospectively included (646 male, 234 female; mean age 58.5±12.4 years). The SS, Thrombolysis in Myocardial Infarction (TIMI) flow grade score and TIMI myocardial blush grade (MBG) score were determined in all patients. No-reflow was defined as TIMI grade 0, 1 and 2 flows or TIMI grade 3 with MBG 0 and 1. The patients were divided into two groups as normal flow group and no-reflow group.

**Results:** No-reflow was observed at 32.8% of patients. The mean SS of no-reflow group was higher than normal flow group (19.2±6.8/12.9±6.1, p<0.001). On multivariate logistic regression analysis, SS (β=0.872, %CI=0.845-0.899, p<0.001), diabetes (β=0.767, %CI=0.128-4.597, p=0.004), anterior myocardial infarction (β=5.421, %CI=1.369-21.469, p=0.025) and thrombus grade after wiring (β=2.537, %CI=1.506-4.273, p<0.001) were independent predictors of no-reflow. The cutoff value of SS obtained by the ROC curve analysis was 19.75 for the prediction of no-reflow (sensitivity: 70.6%, specificity: 69.4%).

**Conclusion:** The SS is a predictor of no-reflow in patients with STEMI treated with PPCI.

## Comparison of baseline demographic, echocardiographic and angiographic characteristics

Variables	Normal flow (n=591)	No-reflow (n=289)	p value
SYNTAX Score	12.9±6.1	19.2±6.8	<0.001
Age, years	56.3±12.2	61.8±11.7	< 0.001
Ejection fraction (%)	46.7±9.5	43.1±9.1	<0.001

## OP-050

## Predictive Value of Elevated D-dimer in Patients Undergoing Primary Angioplasty for ST Elevation Myocardial Infarction

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**Objectives:** The aim of this study was to evaluate the prognostic value of D-dimer in patients with STEMI undergoing primary percutaneous coronary intervention (PCI). **Background:** The prognostic value of D-dimer has been documented in patients with acute coronary syndrome without ST-segment elevation. However, its value in acute ST-segment elevation myocardial infarction (STEMI) remains unclear.

**Methods:** We prospectively enrolled 453 consecutive STEMI patients (mean age 55.6±12.4 years, 364 male, 89 female) undergoing primary PCI. The study population was divided into tertiles based on admission D-dimer values. The high D-dimer group (n=151) was defined as a value in the third tertile (>0.72 ug/ml FEU), and the low D-dimer group (n=302) included those patients with a value in the lower two tertiles (≤0.72 ug/ml FEU). Clinical characteristics, in-hospital and six-month outcomes of primary PCI were analyzed.

**Results:** The patients of the high D-dimer group were older (mean age 60.1±13.5 vs. 52.4±10.6, p<0.001). Higher in-hospital cardiovascular mortality and six-month all-cause mortality rates were observed in the high D-dimer group (7.2% vs. 0.6%, p<0.001 and 13.9% vs. 2%, p<0.001, respectively). In Cox multivariate analysis; a high admission D-dimer value (>0.72ug/ml FEU) was found to be a powerful independent predictor of six-month all-cause mortality (odds ratio: 10.1, 95% confidence interval: 1.24-42.73, p=0.03).

**Conclusions:** These results suggest that a high admission D-dimer level was associated with increased in-hospital cardiovascular mortality and six-month all-cause mortality in patients with STEMI undergoing primary PCI.

## OP-051

## Myocardial Tissue Perfusion Predicts the Evolution of Fragmented QRS in Patients with ST Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

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**Background:** Fragmented QRS complex (fQRS) is associated with worse outcomes in several cardiovascular conditions. However, alterations in fQRS in patients with ST elevation myocardial infarction (STEMI) who underwent primary percutaneous coronary intervention (PCI) and association of fQRS with myocardial blush grade (MBG) has not been investigated until now. In this study, we aimed to investigate the association of MBG after primary PCI with evolution of fQRS.

**Methods:** Our study consisted of 401 consecutive patients with STEMI who underwent primary PCI. Patients were categorized into two subgroups according to persistence or new-onset of fQRS (Group 1) and absence or resolution of fQRS (Group 2) at 48 hours after primary PCI. The evolution of fQRS on pre and post-PCI ECG and their relation with myocardial reperfusion parameters were investigated.

**Results:** Patients in group 1 showed older age, higher rate of smoking, lower HDL-cholesterol, lower LVEF, increased admission time, higher TIMI frame count and high rate of patients with MBG <3 compared to patients with group 2 (p<0.05). In correlation analysis, LVEF showed positive correlation with MBG (r=0.448, p<0.001) and negative correlation with the number of leads with fQRS (r=-0.335, p<0.001). In multivariate regression analysis, new-onset or persistence of fQRS after primary PCI is significantly associated with MBG <3, peak CK-MB level, pre-PCI fQRS at anterior localization and smoking.

**Conclusion:** In conclusion, despite complete ST segment resolution in all patients, fQRS is independently associated with impaired microvascular myocardial perfusion. So, fQRS, as a simple and easily available non-invasive marker, may be useful in stratification of high-risk patients with increased extent of infarcted myocardium who underwent primary PCI.

## OP-052

## Prognostic Value of Total Bilirubin in Patients With ST-Elevated Myocardial Infarction Undergoing Primary Coronary Intervention

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Previous studies showed that serum total bilirubin (TB) concentration was inversely related with stable coronary artery disease (CAD), diabetes mellitus (DM),

hypertension (HT), and metabolic syndromes (MS). The relation between TB levels and in-hospital and long-term outcomes in patients with ST-segment elevation myocardial infarction (STEMI) who undergo primary percutaneous coronary intervention (PCI) is not known. Data from 1624 consecutive patients with STEMI who underwent primary PCI were evaluated. TB was measured after primary PCI, and the study population was divided into tertiles. A high TB group ( $n=450$ ) was defined as a value in the upper third tertile ( $>0.9$  mg/dl) and a low bilirubin group ( $n=1174$ ), as any value in the lower two tertiles ( $\leq 0.9$  mg/dl). In-hospital mortality rate was significantly higher in the high TB group than in the low one (4% vs. 1.5%,  $p=0.003$ ). In multivariate analyses, a significant association was noted between high TB levels and adjusted risk of in-hospital cardiovascular mortality (odds ratio: 2.67, 95% confidence interval (CI): 1.38–5.2;  $p=0.004$ ). In receiver operating characteristic curve analysis, a TB value  $>0.90$  mg/dl was identified as an effective cut-point in STEMI for in-hospital cardiovascular mortality (area under curve = 0.66, 95% CI: 0.55–0.76,  $p=0.001$ ). The mean follow-up time was 26.2 months. There were no differences in long-term mortality rates between the two groups. In conclusion, high TB is independently associated with in-hospital adverse outcomes in patients with STEMI who undergo primary PCI. However, there was no association with long-term mortality.

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#### OP-053

##### Association between Admission Mean Platelet Volume and ST Segment Resolution after Thrombolytic Therapy for Acute Myocardial Infarction

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**Objective:** Mean platelet volume (MPV) is one of the indices of platelet reactivity and has been shown to be related to impaired angiographic reperfusion in ST-segment elevation myocardial infarction (STEMI) patients who treated with primary angioplasty or thrombolytics. However data regarding MPV and its association with ST-segment resolution; an indicator of epicardial and tissue level reperfusion in the setting of STEMI are limited. In this study, we aimed to investigate whether MPV on admission is associated with ST-segment resolution in STEMI patients treated with thrombolytics.

**Methods:** We retrospectively evaluated 232 consecutive patients with a diagnosis of first STEMI who were administered thrombolytic therapy within 12 hours of onset of chest pain. ST segment resolution based on baseline and 90 minute electrocardiographies were measured. Patients were grouped into two as with  $>50\%$  and  $\leq 50\%$  ST-segment resolution. Admission MPV was measured and compared between two groups.

**Results:** Admission MPV was higher in patients with  $\leq 50\%$  ST-segment resolution than patients with  $>50\%$  ST-segment resolution ( $9.9 \pm 1.3$  fl vs  $8.5 \pm 1.1$  fl respectively,  $p<0.001$ ). The receiver operating characteristic analysis yielded a cutoff value of 9.3 fl to predict ST-segment resolution, with sensitivity and specificity being 66.7% and 77.9%, respectively. In-hospital mortality rate was high in patients with  $\leq 50\%$  ST-segment resolution ( $p=0.002$ ).

**Conclusions:** In conclusion, our study demonstrates for the first time, to the best of our knowledge, that MPV is an independent predictor of ST segment resolution in STEMI patients treated with thrombolytics. These findings may serve to the knowledge of the potential importance of MPV in the successful thrombolysis and prognosis after a cardiovascular event.

#### OP-054

##### 16-kDa Prolactin Promotes Cardiac Ischemia/Reperfusion Injury

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The recent discovery that anti-angiogenic, pro-apoptotic and pro-inflammatory N-terminal 16-kDa prolactin subform (16-kDa Prl) is generated under enhanced oxidative stress and yielding adverse cardiac effects, prompted us to investigate the potential role of prolactin and its cleaved 16-kDa form in myocardial ischemia/reperfusion (I/R) injury.

In the current study we demonstrate that enhanced levels of serum prolactin (Prl) and cathepsin D (CD) activity in patients with acute myocardial infarction (AMI) were associated with the generation of N-terminal 16-kDa subform.

In a murine model of myocardial I/R with previous LAD (left anterior descending artery) ligation for 50 minutes, blockage of endogenous Prl release by the dopamine D2 receptor agonist bromocriptine limited infarct size 24 hours post-reperfusion and preserved left ventricular (LV) function after 14 days of reperfusion.

Additionally, we demonstrate that after blockage of endogenous Prl release, the subsequent application of a recombinant mutant, prolactin isoform, which is not

cleaved into the 16-kDa subform, significantly limited the extent of cardiac injury compared to the well-cleaved corresponding wildtype prolactin isoform 24 hours post-reperfusion.

I/R injury-induced up-regulation of pro-inflammatory mediators (e.g. TNF- $\alpha$ , CCL-2, CXCL2) and extravasation of inflammatory infiltrates were significantly reduced in bromocriptine treated mice than untreated controls.

The bromocriptine induced cardiac protection was mainly addicted to inhibition of 16-kDa Prl formation, as myocardium treated with the mutant prolactin isoform displayed substantially less inflammatory cell infiltration and cytokine expression than myocardium treated with the wildtype prolactin isoform.

In addition, we discovered that recombinant 16-kDa Prl markedly induced the expression of proinflammatory cytokines via activation of NF- $\kappa$ B signalling in neonatal rat cardiomyocytes.

#### OP-055

##### Can Fragmented QRS On 12 Derivation ECG Predict Thrombolytic Therapy Success In Acute ST Elevated Myocardial Infarction?

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**Objective:** Fragmented QRS (fQRS) on surface ECG of patients admitted with acute ST elevated myocardial infarction (STEMI) is shown to be related with poor prognosis in several studies. However there is no study so far evaluated the relationship between presence of fQRS and successful reperfusion with thrombolytic therapy in this group of patients. The aim of our study is to determine whether fQRS can be used as a predictor of thrombolytic therapy response in patients admitting for the first time with STEMI.

**Material-Methods:** 116 patients admitted Dokuz Eylül University Hospital Cardiology Department for the first time with STEMI and treated with thrombolytic therapy between 01 January 2009 and 01 July 2011 are included in our study. Patients having ECG findings that can be misdiagnosed as fQRS [incomplete right bundle branch block pattern in V1, pacemaker rhythm, wide QRS complex (QRS  $>120$  ms)] and with CABG history are excluded. ECG recordings on admission, at the beginning, 30th, 60th, 90th minutes of thrombolytic therapy and in 48 hours of admission are obtained. Presence of fQRS is defined as presence of more than one R wave pattern or notching on R or S waves in neighbouring 2 derivations (Figure 1). Successful reperfusion is defined as over 50% resolution in the highest ST segment elevated derivation on the ECG taken in 90th minute of reperfusion therapy.

**Findings:** fQRS was present in 38.8% of patients (45 patients) included in our study. For patients with and without fQRS, there was no significant difference in myocardial infarction (MI) localization (anterior MI: 40% vs 35.2%,  $p>0.05$ ) and mean door to needle time ( $29.1 \pm 9.4$  vs.  $26.9 \pm 8.1$ ,  $p>0.05$ ). But there was 28.4 % (27/95) fQRS in patients with successful reperfusion with thrombolytic therapy compared to 85.7% (18/21) in patients with failed reperfusion with thrombolytic therapy ( $p<0.001$ ) (Figure 2). In addition to these findings patients with fQRS compared to ones without it are older ( $66 \pm 12$  vs  $61 \pm 10$ ,  $p=0.02$ ), have more prolonged QRS durations ( $108.44 \pm 9.16$  ms vs.  $102.25 \pm 9.63$  ms,  $p=0.001$ ), have higher leukocyte counts ( $12.620 \pm 3.315$  vs.  $10.596 \pm 2.887$ ,  $p=0.001$ ), have lower left ventricle ejection fraction ( $35.56 \pm 6.84\%$  vs  $47.96 \pm 5.64\%$ ,  $p<0.001$ ) and have higher maximum troponin levels ( $60.60 \pm 29.62$  vs  $30.91 \pm 14.80$ ,  $p<0.01$ ) (Table 1).

**Results:** Presence of fQRS in acute STEMI is not related with MI localization and timing of thrombolytic therapy. However fQRS on surface ECG of patients admitted with acute STEMI can predict the failure of thrombolytic therapy. Also presence of fQRS can help to determine high risk patients with broader myocardial tissue under threat.

