

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 (≤ 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 ± 1.3 fl vs 8.5 ± 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- α , CCL-2, CXCL2) and extravasation of inflammatory cell 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- κ 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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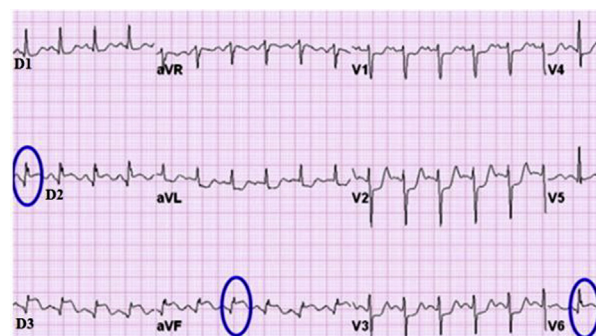
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Objective: Fragmented QRS (fQRS) on surface ECG of patients admitted with acute ST elevated myocardial infarction (STEMI) is shown to be related with poor prognosis in several studies. However there is no study so far evaluated the relationship between 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 ± 9.4 vs. 26.9 ± 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 ± 12 vs 61 ± 10 , $p = 0.02$), have more prolonged QRS durations (108.44 ± 9.16 ms vs. 102.25 ± 9.63 ms, $p = 0.001$), have higher leukocyte counts (12.620 ± 3.315 vs. 10.596 ± 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 ± 29.62 vs 30.91 ± 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.



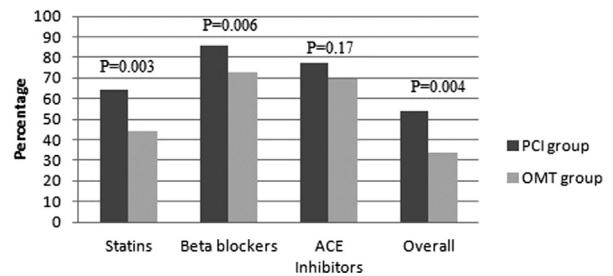
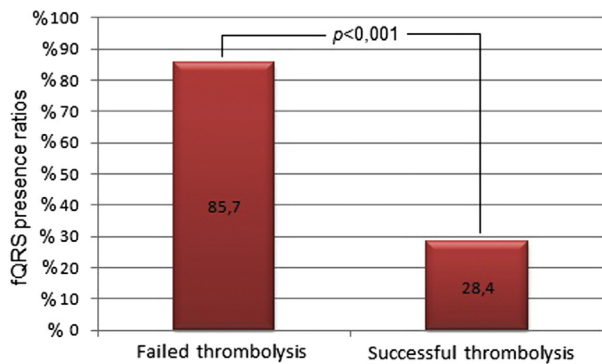


Table 1. Comparison Of Distinctive Features of Patients With and Without fQRS

	fQRS present	fQRS absent	P
Age	66.07±12.06	61.00±9.93	0.021
Sex (M)	32 (%71.1)	56 (%78.9)	0.341
HT (%)	24 (%53.3)	29 (%40.8)	0.188
DM (%)	9 (%20)	14 (%19.7)	0.970
HL (%)	12 (%26.7)	14 (%19.7)	0.382
Cigarette habit (%)	28 (%62.2)	47 (%66.2)	0.663
Chest pain duration (min)	181.67±151.76	168.87±175.31	0.688
SBP (mm Hg)	132.80±27.46	126.75±20.95	0.210
DBP (mm Hg)	77.82±13.30	76.72±13.79	0.671
LVEF (%)	35.56±6.84	47.96±5.64	<0.001
Door-to-needle time (min)	29.11±9.43	26.90±8.08	0.181
HGB (gr/dl)	13.13±1.80	13.46±1.94	0.358
WBC (x10 ³ /μL)	12.62±3.32	10.60±2.88	0.001
MPV (fl)	8.37±1.04	8.44±0.86	0.692
PLT (x10 ³ /μL)	208.47±58.61	214.48±72.60	0.641
BUN (mg/dl)	19.56±11.14	17.72±6.65	0.268
CREATININE (mg/dl)	1.06±0.58	0.96±0.39	0.319
LDL-CHOLESTEREOL (mg/dl)	119.40±24.95	118.93±25.88	0.925
HDL-CHOLESTEREOL (mg/dl)	35.98±9.80	37.35±9.13	0.450
CK-MB (ng/ml)	244.44±122.94	125.45±83.51	<0.001
Troponin (ng/ml)	60.60±29.62	30.91±14.80	<0.001
QRS DURATION (msn)	108.44±9.16	102.25±9.63	0.001
ST elevation before treatment (mm)	9.98±4.56	10.70±6.81	0.529
ST elevation after treatment (mm)	5.62±3.64	3.62±3.10	0.002
ST resolution ratio (%)	0.44±0.21	0.68±0.16	<0.001
ST segment deviation score	15.69±5.98	16.72±10.41	0.501
MI localisation			0.603
Anterior MI	18 (%40)	25 (%35.2)	
Other MI	27 (%60)	46 (%64.8)	

(HT: hypertension, DM: diabetes mellitus, HL: hyperlipidemia, SBP: systolic blood pressure, DBP: diastolic blood pressure, LVEF: left ventricular ejection fraction, HGB: hemoglobin, WBC: white blood cell count, MPV: mean platelet volume, PLT: platelet count, BUN: blood urea nitrogen, LDL: low density lipoprotein, HDL: high density lipoprotein, CK-MB: creatinine kinase-muscle band, MI: myocardial infarction)

OP-056

PCI vs Optimal Medical Therapy - The Other Side of the Coin: Medication Adherence

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There are many randomized controlled trials comparing outcomes for Percutaneous coronary intervention (PCI) and optimal medical therapy alone (OMT) for stable coronary artery disease patients whereas little is known about medication adherence PCI versus OMT in a setting apart from randomized controlled trials. Although medication adherence in randomized controlled trials like COURAGE is quite high, in real life these rates are lower. In this study of 232 documented CAD (coronary artery disease) patients, we compared statin, beta blocker and ACE-inhibitors adherence during six-month follow-up between patients treated with PCI and those receiving medical therapy alone. Medication adherence was measured by National reimbursement database records Of the 232 patients who survived to the 6-month followup, the prespecified primary end point of percentage of patients adherent by prescription records were 33.8% (n=27) in OMT group and 53.6% (n=82) in PCI group, p=0.004 (Figure 1). Analysis for the individual medication classes revealed similar results for beta blockers (86.0% in PCI group vs 72.5% in OMT group, p=0.006) and statins (64.5% in PCI group vs 44.0% in OMT group, p=0.003). Adherence to ACE inhibitors was also higher in PCI group without statistical significance (77.6% vs 69.3%, p=0.17). In the present study we demonstrated that medication adherence to evidence based therapies in stable coronary artery disease patients in PCI group is significantly higher than OMT group.

OP-057

Relation of Neutrophil/Lymphocyte Ratio to GRACE Risk Score to In-hospital Cardiac Events in Patients with ST-Elevated Myocardial Infarction

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Objectives: Neutrophil/Lymphocyte ratio (NLR) is being increasingly used as a marker for cardiovascular risk assessment and as a prognostic tool in ST-elevated myocardial infarction (STEMI). In this study, we aimed to investigate the association of the NLR with GRACE risk score and in-hospital major advanced cardiac events in patients with STEMI undergoing primary percutaneous coronary intervention (PCI). **Material/Methods:** We analyzed 101 consecutive STEMI patients treated with primary PCI. Patients were divided into 3 groups by use of GRACE risk score. The NLR was calculated as a part of automated complete blood count. The association between NLR and GRACE risk score was assessed.

Results: Baseline Characteristics.

The study population consisted of 101 consecutive STEMI patients. 80.2% of patients were male and mean age of patients was 57.97±12.24 years. 42 patients were hypertensive, 23 patients were diabetic, 34 patients were hyperlipidemic and 57 were smoker.

According to the GRACE risk score, 21 patients had low GRACE risk scores, 48 patients had intermediate GRACE risk scores, 32 patients had high GRACE risk scores. Demographic and biochemical characteristics of patients in GRACE risk score groups are shown in table 1. The NLR showed a proportional increase correlated with GRACE risk score (p<0.001) (Table 1, Figure 1).

Correlation With In-Hospital Events

During the in-hospital period, 11 patients (10.9%) presented cardiac events (3 cardiac death, 2 reinfarction, 6 new-onset heart failure). These patients had more advanced Killip functional class and higher GRACE risk score. The occurrence of in hospital cardiac death, reinfarction or new-onset heart failure was significantly related to NLR at admission (8.18±1.16 vs. 3.07±1.77, p<0.001). Likewise, NLR and GRACE risk score showed a significant positive correlation (r=0.803, p<0.001) (Figure 2).

Multivariate Analysis

For in hospital cardiac events; N/L ratio, blood glucose level upon admission, troponin level at admission and in hospital GRACE death point were analyzed using a multivariate logistic regression model. The NLR was the only independent predictor of in-hospital cardiac events (odds ratio 3.63, confidence interval 95%: 1.31-10.04, p=0.013) (Table 2).

Discussion: NLR has recently emerged as a potential new biomarker which singles out individuals at risk for future cardiovascular events in STEMI patients. Unlike many other inflammatory markers and bioassays, NLR is an inexpensive and readily available marker that provides an additional level of risk scores in predicting in-hospital and long-term outcomes. Although the GRACE risk score is routinely used for stratification of patients with acute coronary syndrome, NLR may provide additional prognostic value. Increased NLR is independently associated with a higher rate of in-hospital cardiac events. The determination of NLR for risk stratification of STEMI patients during hospitalization may be useful.

