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Treatments and outcomes of myocardial infarction patients with ST elevation versus new or probably new left bundle branch block

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Background: Patients with typical chest pain and ST elevation or left bundle branch block on the presenting ECG should be treated with urgent revascularization. However, we have limited data comparing the characteristics and prognosis of these two patient groups.

Purpose: Our aim was to investigate clinical features and prognosis of patients according to presenting ECG: ST elevation versus new or probably new left bundle branch block (nLBBB).

Methods: Between 1 January 2014 and 30 June 2015 we enrolled 18091 patients (pts) in our National Registry of Myocardial Infarction which is a mandatory, on-line database: 7937 pts had ST-elevation myocardial infarction (STEMI), 9757 pts had non-ST elevation MI (NSTEMI) and 397 pts had nLBBB on presenting ECG. Characteristics were univariately compared with Mann-Whitney U test and Monte-Carlo test and survival time was multivariately modeled with Cox proportional hazards model.

Results: Clinical characteristics, comorbidities and hospital treatment are summarized in Table 1. Thirty-day and one-year mortality of patients with ST elevation treated with primary PCI were lower compared to patients with nLBBB on presenting ECG and treated with primary intervention (8.5% and 14.7% versus. 17.8 and 27%). In the multivariate model, the presenting ECG was a significant predictor of survival (HR=1.32 (95% CI: 1.07–1.62), p=0.0085 for nLBBB vs. ST elevation); the most important further predictors were: age, PCI, systolic blood pressure and heart rate at admission and serum creatinine. The presenting ECG did not significantly modify the effect of PCI (p=0.5426 for interaction).

Conclusion: Acute myocardial infarction patients with nLBBB have a poor prognosis when compared to myocardial infarction patients with ST elevation.

Table 1. Clinical characteristics, comorbidities and hospital care of patients with acute myocardial infarction according to the presenting ECG at the time of hospital admission

	ST elevation (n=7937)	nLBBB (n=397)	p
Age (year±SD)	64.6±13.1	71.7±12.1	

Men (%)	54,7	61,5	p=0.007
Diabetes mellitus (%)	26.9	38.6	p<0.001
Hypertension (%)	73.9	80.9	p=0.002
Previous MI (%)	17.6	25.5	p<0.001
Previous stroke (%)	7.9	13.7	p<0.001
Coronarography (%)	87.4	71.6	p<0.001
Primary PCI (%)	78.7	57.9	p<0.001