Alanine Aminotransferase as a Prognostic Factor in Patients with ST Elevation Myocardial Infarction

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Background: Elevated transaminases are associated with increased inflammation and oxidative stress and are more common in patients with non-alcoholic fatty liver disease as well as in patients with the metabolic syndrome. The predictive value of elevated transaminases for atherosclerosis and future coronary events is well known, yet there are little data of the prognostic value of alanine aminotransferase (ALT) elevation in the setting of acute myocardial infarction. We therefore aimed to examine the prognostic implication of elevated ALT in patients admitted with ST- segment elevation myocardial infarction (STEMI).
Methods: We performed a retrospective analysis of STEMI patients who were admitted to the Rabin Medical Center during the years 2001-2011 and underwent primary percutaneous intervention (PCI) within 12 hours from the beginning of symptoms. Patients with cardiogenic shock were excluded. ALT level which was documented within a month prior to the PCI was the basis of our study.
Results: are shown in Table.

	ALT≤40U/L (n=779)	ALT>40 U/L (n=419)	p value
Age (years)	62±12	59±13	0.001
Male	79%	87%	0.006
Diabetes Mellitus	28%	25%	0.2
Dislipidemia	54%	49%	0.1
Hypertension	52%	51%	0.8
Current Smoker	41%	45%	0.5
Basal mass index	27.5±5.0	28.3±6.0	0.01
Anterior wall MI	43%	55%	0.001
LV ejection fraction<40	32%	55%	0.001
2/3 vessel disease	59%	60%	0.6
TIMI 3 post PCI	96%	94%	0.1
CPK (max)	1300U/L±1400	2900U/L±2200	0.001
Cadillac score	3.9±3.5	4.7±3.8	0.006
30-day mortality	2.3%	4.8%	0.02
6-month mortality	3.6%	7.6%	0.002
1-year mortality	4.6%	9.4%	0.001

In multivariate analysis adjusted to the Cadillac score, ALT level was associated with 30-day, 6 month and 1-year mortality with an odds ratio of 1.4 (95% CI 0.7-2.9, p=0.3), 1.6 (95% CI 0.9-2.9, p=0.09) and 1.6 (95% CI 0.96-2.8, p=0.07), respectively.
Conclusion: In patients with STEMI, the presence of prior elevated ALT is assoicated with

unadjusted higher mortality rate. ALT was not found to be an independent predictor for short-term mortality after STEMI, rather, there is a trend towards its prediction for long-term mortality. Further investigation is needed to better understand this association.