Clinical benefits of high dose statins according to the atherothrombotic risk stratification after acute myocardial infarction. The FAST-MI registries.

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Background: High dose statins prescription are strongly recommended in patients after acute myocardial infarction (AMI) in current guidelines.

Aim: We aimed to assess the clinical impact on major cardiovascular events (MACE) of high dose statins prescription at discharge according to the atherothrombotic risk stratification in a routine-practice population of AMI patients, and to determine the relative efficacy of currently recommended high dose statins according to risk level.

Methods: We used data from the 2005, and 2010 FAST-MI nationwide registries, including 7,839 patients with AMI (54% STEMI) admitted to cardiac intensive care units in France. Atherothrombotic risk stratification was performed using the TIMI Risk Score for Secondary Prevention (TRS-2P). Patients were defined in 3 categories: Group 1 (Low-risk; TRS-2P=0/1); Group 2 (Intermediate-risk; TRS-2P=2); and, Group 3 (High-risk; TRS-2P=3). Baseline characteristics and the rate of MACE (defined as death, stroke or re-MI) at 5-years were analyzed according to TRS-2P categories, and the impact of high dose statins (i.e. atorvastatin 80mg/day or rosuvastatin 20mg/day) at discharge was compared using Cox multivariate analysis among the different risk groups.

Results: A total of 7,348 patients discharge alive and in whom TRS-2P was available. Prevalence of Groups 1, 2, and Group 3 was 41.5%, 25% and 33.5% respectively. Over the 5-year period, the overall risk of patients admitted for AMI decreased in Group 3 from 41% to 27% (P<0.001). Optimal medical therapy at discharge (defined by the use of dual antiplatelets therapy, statins for all; and, beta-blocker, ACE-I or ARB when appropriate) was 53% in Group 3, 67% in Group 2, and 80% in Group 1 (P<0.001). High dose statins prescription at discharge was 18.5% (Group 3), 31.3% (Group 2), and 41.3% (Group 1). High dose statins prescription was associated with lower MACE at five-year in the overall population compared to patients with intermediate/low dose statins or without statin prescription (14.3% vs. 29.6%; absolute risk= 15.3%; HR adjusted on baseline characteristics and management: 0.86, 0.76-0.97, P=0.018). The decrease in MACE at five-year was observed in all TRS-2P categories (Group 1: 8.1% vs. 10.7%, ?= 2.6%; Group 2: 14.8% vs. 21.6%, ?= 6.8%; Group 3: 30.8% vs. 51.6%, ?= 20.8%). Finally, the benefits of high dose statins in low- and intermediate-risk was lower (HR=0.97; 95%CI, 0.74-1.26; P=0.81 and HR=1.06; 95%CI, 0.81-1.38; P=0.81) compared to high-risk patients (HR=0.78; 95%CI, 0.65-0.94; P=0.008).

Conclusions: High dose statins prescription at discharge after AMI was associated with lower MACE at five-
year regardless of the atherothrombotic risk stratification, although the highest absolute reduction was found in the high risk TRS2P class.

![Graphs showing survival rates with and without high dose statins across different risk categories.](image-url)

- Low-risk (G1): HR=0.97 (95%CI: 0.74-1.26) P=0.81
- Intermediate-risk (G2): HR=1.06 (95%CI: 0.81-1.38) P=0.68
- High-risk (G3): HR=0.78 (95%CI: 0.65-0.94) P=0.008

No high dose statins
High dose statins