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Statins after an acute coronary syndrome: are high doses useful? Data from the French FAST-MI registry

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Purpose: The beneficial effect of a high dose of statin (HDS) compared with lower doses is controversial in secondary prevention. We studied factors impacting the prescription of a HDS at discharge after an Acute Myocardial Infarction [AMI], and assessed effects of this HDS on mortality and cardiovascular morbidity.

Methods: Participants were 2240 survivors of a STEMI or NSTEMI from the French FAST-MI registry conducted in 2005, with a known statin dose at discharge. Rosuvastatin at any dose, atorvastatin ≥20 mg/d and Simvastatin 40 mg/d were considered as HDS. Factors related to HDS prescription were studied using logistic regression. Impact of HDS prescription on occurrence of death or major cardiovascular events [MACE] (MI, stroke or revascularisation) was studied using a Cox proportional hazards model after propensity score matching.

Results: 54.5% of the patients had a HDS prescription at discharge. In crude risk analyses, HDS prescription was associated with a lower risk of death or MACE (HR=0.84 [0.71-0.98], p<0.03). However, patients already under treatment with a HDS before the ACS, patients managed in a university hospital, located in a large city, with a younger age, a STEMI, a high blood pressure at entry (≥140 mmHg) and who were discharged rapidly after their AMI were more likely to benefit from a HDS prescription at discharge. After propensity score matching, the dose of statin the patients received at discharge was not related to death or MACE occurrence in the following 3 years (HR=1.04 [0.77-1.36], p=0.87). Using a more stringent definition for HDS (atorvastatin ≥40 mg or rosuvastatin ≥20 mg) yielded similar results.

Conclusions: The issue of long term benefit of HDS therapy compared with lower ones after an AMI remains unanswered in an observational context, because in this "real life" large registry, high doses were preferentially prescribed to patients with a low risk profile, but less commonly to patients with a high risk profile.

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Achievement of LDL-cholesterol goal according to the level of cardiovascular risk in the French general population

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Guidelines recommend lowering LDL-cholesterol (LDL-c) according to level of cardiovascular risk. We aimed at exploring, in the French general population, the proportion of subjects above the recommended goal, and to assess among these people, how much LDL-c should be further decreased to reach the goal.

Methods: We analyzed data from a multicenter cross-sectional study conducted in 2006-2007 in Lille, Strasbourg and Toulouse areas. Participants were selected from the general population by drawing on polling lists.

Results: The sample comprised 4609 subjects aged 35-74 (49.9% of women), among whom 35.0% had no cardiovascular risk factor (age < 50 for men, 60 for women; no family history of premature coronary heart disease; no hypertension; no diabetes, HDL-c ≥ 0.40 g/L; and no current or recent smoking). The sample was further composed of 27.1%, 16.5%, and 3.9% of subjects with 1, 2 and 3 risk factors, respectively, and 17.5% of people at high cardiovascular risk.

The percentage of people not reaching LDL-c goal increased from subjects with 0 to those with 3 risk factors (1.2%; 9.7%; 28.0%; and 56.9%), and 82.2% of high risk subjects presented with LDL-c above 1 g/L. These latter people had either a documented cardiovascular disease (68.8% had LDL-c ≥ 1 g/L), or an elevated 10-year absolute risk of cardiovascular disease (86.7% ≥ 1 g/L). In high risk people above the goal, mean LDL-c was 1.49 g/L (±0.32). An average 31.2% (±13.3) decrease in LDL-c was requested to reach the goal. The average decrease requested for people with 0 to 3 risk factors who were above the goal, was 9.7% (±8.6), 8.8% (±7.8), 12.6% (±9.6), and 15.1% (±10.1), respectively. A similar analysis was conducted considering ESC instead of French guidelines.

Conclusion: By estimating the average decrease in LDL-c needed to reach recommended goal in different risk categories, this study provides helpful information that may guide health agencies to conceive recommendations for management strategies.

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The effect of statins on the risk of first non-fatal myocardial infarction: a population-based observational study using the PGRx information system

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Background: Despite demonstrated positive effects in a number of clinical trials, the evidence is lacking as to the impact of statins on the risk of first myocardial infarction (MI) in real life settings.

Objectives: To assess the impact of real life statin utilization on the risk of first non-fatal MI

Methods: Case-control methodology using the pharmacoepidemiological information system PGRx. Data on comorbidities, risk factors and medications were obtained from medical records and patient telephone interviews. General practices (n=371) and cardiology centres (n=60) across France were employed in the study. Cases were patients with the first MI ≤ 1 month before the date of recruitment (n=2238). Controls were patients seen by a general practitioner (GP) with no restriction as to the reasons of consultation (n=2238), matched to MI cases on gender, age, frequency of visits to a doctor, date of recruitment and personal history of non-cardiovascular chronic disease. Statin exposure was defined as any utilisation in the two-year prior to date of MI in cases or recruitment date in controls. Adjusted odds ratios (OR) of the risk of first MI was estimated by multiple conditional logistic regression models. Comparative effectiveness and propensity to use of individual statin molecules were assessed.

Results: The use of statins was associated with a lower MI risk (adjusted OR 0.67 [95% CI 0.56 – 0.79] for current use (within 2 months before the index date) and 0.73 [0.62 0.86] for any use within 24 months). Among individual statins, rosuvastatin was associated with the lowest MI risk (adjusted OR 0.49 [0.35 – 0.68] for any use in 24 months preceding the index date) followed by simvastatin (0.62 [0.46 – 0.84]).

Conclusions: In this first major population-based observational study we reproduced the results observed in recent meta-analyses accounting for real life compliance and population variability. The results could be of interest and applicable to other industrialised countries as the observed risk reduction was constant across MI risk levels.