

# Therapeutic inertia in achieving targeted levels of LDL after myocardial infarction

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**Introduction:** There are many trials who have demonstrated that lower low-density lipoprotein-cholesterol (LDL-C) levels after acute coronary syndrome (ACS) are associated with lower cardiovascular event rates<sup>1</sup>. The current guidelines for secondary prevention recommend lowering LDL-C to <1.4 mmol/L or ≥50% LDL-C reduction from baseline values<sup>2</sup>. Therapeutic inertia, defined as the failure to initiate or intensify therapy

in a timely manner according to evidence-based clinical guidelines, is a key reason for not achieving those treatment goals. We conducted a study to find out how successful we are in achieving current recommended treatment goals for LDL-C levels in secondary prevention.

**Patients and Methods:** We conducted a single-center registry-based study including patients who were hospitalized between January 2017 and September 2023 with ACS. LDL-C levels were measured and compared at the time of hospitalization and at 12-month follow-up.

**Results:** This single-center registry-based study included 2012 patients admitted with ACS. Baseline characteristics of the study groups are given in **Table 1**. At discharge, statins were prescribed in 99.1% of patients. Alone in 96.5% of patients (96.2% of which at high doses), in 2.6% of cases in combination with ezetimibe and in one case in combination with proprotein convertase subtilisin/kexin type 9 inhibitor (PCSK9). Mean LDL-C level at admission was 3.46±1.16 mmol/L. There was a significant reduction in LDL-C levels on control visit, 3.46±1.16 vs 1.94±0.80, p<0.0001. After a 12 month follow up 678 (33.7%) of patients achieved a target LDL-C <1.4 mmol/L or ≥50% LDL-C reduction from baseline values. In that period only 110 (5.5%) patients had therapy intervention by cardiologist or general practitioner. 49 patients (47.1%) of the patients that had therapy intervention achieved a target LDL-C. 27 patients (50.9%) who started statin in combination with ezetimibe at hospitalization reached therapy

goals. In comparison, 650 patients (33.2%) reached therapy goals on statins only (including high dosage).

**Conclusion:** Our analysis shows that lipid-lowering treatment is suboptimal and needs significant improvement. Earlier control visits with therapeutic interventions should be performed. Also, earlier high intensity statin combination therapy should be encouraged.

## LITERATURE

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**TABLE 1. Baseline characteristics of the study population. Group A, patients who achieved therapy goal of a target LDL-C <1.4 mmol/L or ≥50% LDL-C reduction from baseline values 12 months after acute coronary syndrome. Group B, patients who did not achieve the therapy goal.**

	Group A (n=677)	Group B (n=1335)	Total (n= 2012)
<b>Demographics</b>			
Age, median (IQR) (years)	63 (56-72)	64 (55-71)	63 (55-72)
Age range (years)	20-92	29-96	20-96
<b>Sex</b>			
Male, n (%)	483 (71.3%)	944 (70.7%)	1427 (70.9%)
Female, n (%)	194 (28.7%)	391 (29.3%)	585 (29.1%)
<b>Body mass index, mean±SD (kg/m<sup>2</sup>)</b>			
	28.9±4.9	29.1±4.4	29.0±4.6
<b>Medical history</b>			
Hypertension, n (%)	512 (75.6%)	991 (74.2%)	1503 (74.7%)
Diabetes, n (%)	167 (25.7%)	310 (23.2%)	477 (23.7%)
Coronary artery disease, n (%)	111 (16.4%)	196 (14.7%)	307 (15.3%)
Peripheral artery disease, n (%)	60 (8.9%)	185 (13.9%)	245 (12.2%)
<b>ACS type</b>			
STEMI	384 (56.7%)	724 (54.2%)	1108 (55.1%)
NSTEMI	288 (42.5%)	596 (44.6%)	884 (43.9%)
UAP	5 (0.7%)	15 (1.1%)	20 (1.5%)

ACS = acute coronary syndrome; STEMI = acute ST-elevation myocardial infarction; NSTEMI = non-ST-elevation myocardial infarction; UAP = unstable angina pectoris

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