

# Lipid-lowering Therapy Patterns and Low-density Lipoprotein-Cholesterol Management Among Patients with Acute Myocardial Infarction in Alberta, Canada

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## BACKGROUND

- Acute myocardial infarction (AMI) is a leading cause of morbidity and mortality worldwide.
- While lipid-lowering therapy (LLT) may reduce AMI risk,<sup>1</sup> there is limited real-world evidence on the management of low-density lipoprotein-cholesterol (LDL-C) in patients with AMI in Canada.

**Objective:** To describe LLT patterns and LDL-C management in patients with AMI using health system data from Alberta, Canada.

## METHODS

- Study Design:** Retrospective observational study utilizing several provincial health system databases.
- Inclusion Criteria:** Patients ≥18 years of age with at least one AMI diagnostic code between April 1, 2011 – March 31, 2015.
- Outcomes:**
  - LLT use:** statins (low-, moderate-, and high-intensity), fibrates, bile acid sequestrants, nicotinic acid and derivatives, and other lipid modifying agents (omega-3-triglycerides, other esters and acids, ezetimibe, evolocumab, and alirocumab).
    - LLT use was defined as a prescription dispense within one-year pre- or post-AMI.
  - LDL-C threshold levels:** recommended LDL-C treatment goals were defined as <2.0 mmol/L or 50% reduction aligned with 2016 Canadian Cardiovascular Society recommendations.<sup>1</sup>

## RESULTS

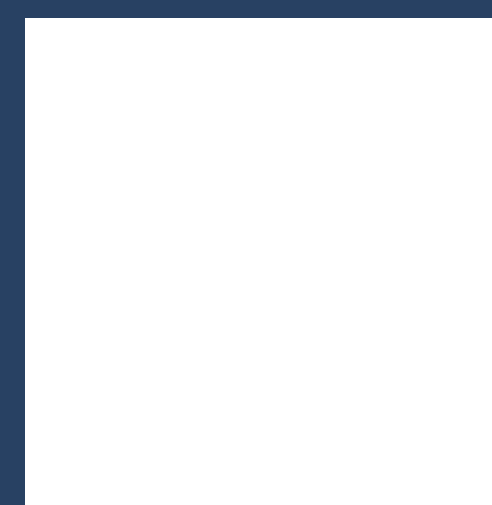
- Pre-AMI, 60.7% of patients were not on any LLTs; among patients on LLT, 57.2% had moderate-intensity statins
- Post-AMI, 22.6% of patients were not on any LLTs; among patients on LLT, 76.0% were on high-intensity statins
- Pre-AMI and post-AMI (last test in follow-up), 63.5% and 29.8% did not achieve guideline-specified threshold levels, respectively.

## CONCLUSION

- Despite an AMI, over 20% of patients were still not on LLT.
- Nearly one third of the patients who received LLT post-AMI did not achieve guideline-specified LDL-C threshold levels.

This study highlights a treatment and LDL-C management gap in patients with AMI.

Alternative strategies to aggressively reduce LDL-C in AMI patients in Alberta are warranted.



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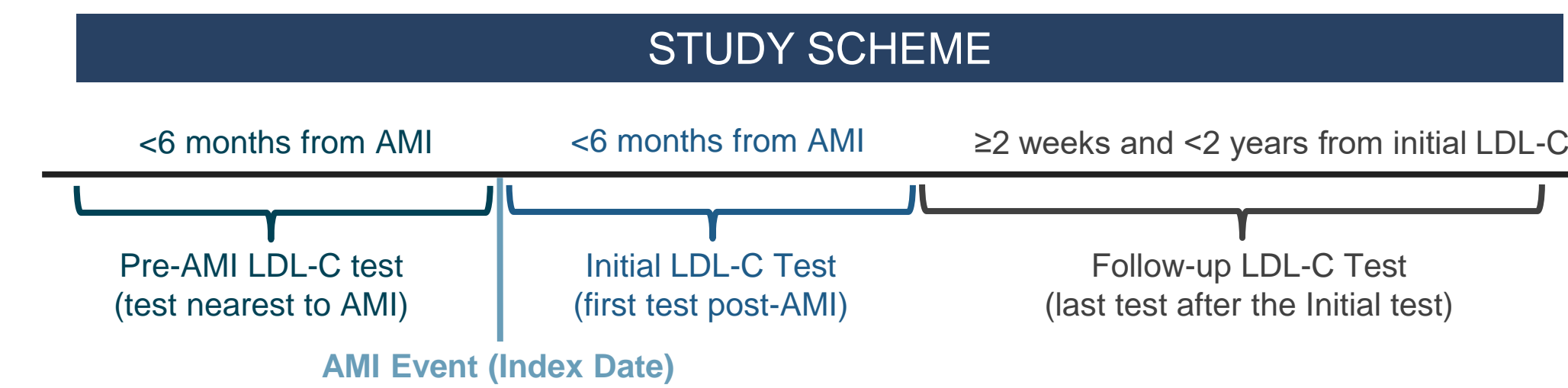


FIGURE 1

Flow Diagram of Study Cohort

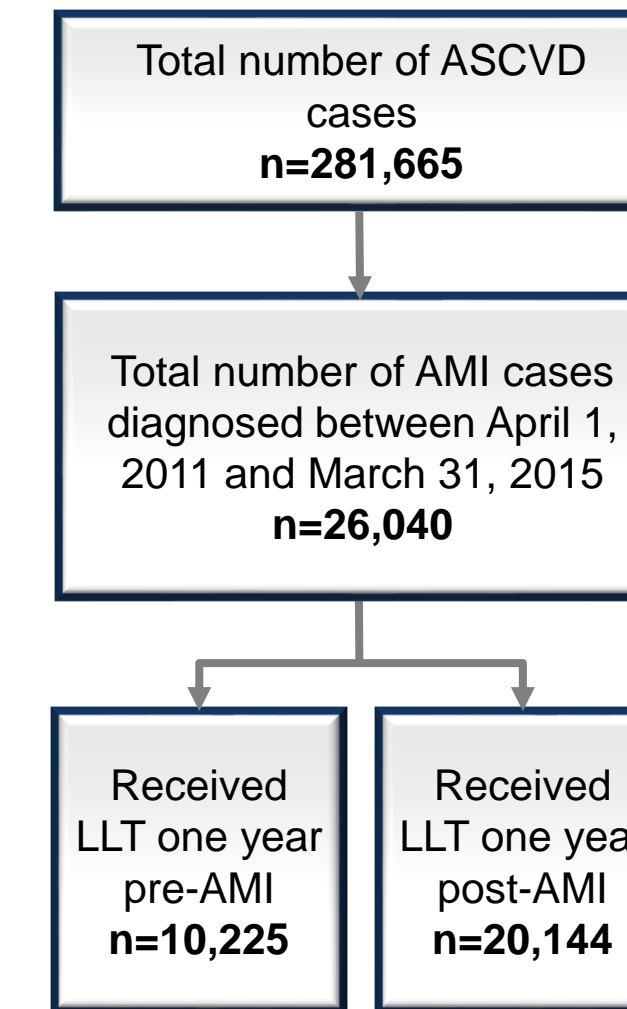


TABLE 1

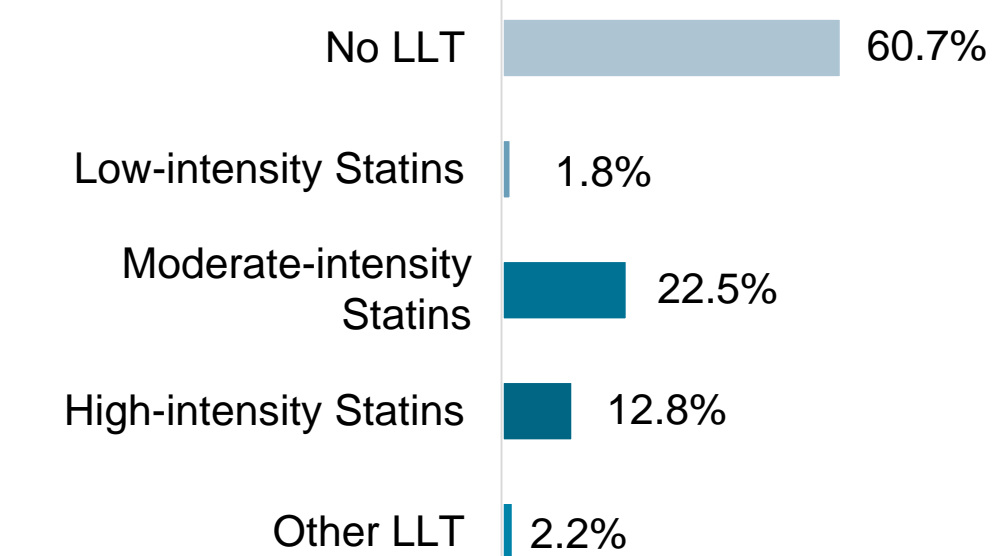
Patient Characteristics (n=26,040)

Characteristic	All AMI (n=26,040)	Received LLT (n=10,225)	No LLT (n=15,815)
Age, mean (SD)	68.3 (14.4)	71.3 (12.4)	66.3 (15.2)
Sex, n (%)			
Female	8,923 (34.3)	3,563 (34.8)	5,360 (33.9)
Male	17,117 (65.7)	6,662 (65.2)	10,455 (66.1)
Comorbidities <sup>a</sup> , n (%)			
CKD	4,063 (15.6)	2,284 (22.3)	1,779 (11.2)
COPD	7,372 (28.3)	3,369 (32.9)	4,003 (25.3)
CHF	9,250 (35.5)	4,645 (45.4)	4,605 (29.1)
Diabetes	8,281 (31.8)	4,865 (47.6)	3,416 (21.6)
Hypertension	20,551 (78.9)	9,288 (90.8)	11,263 (71.2)
Ischemic stroke	1,139 (4.4)	627 (6.1)	512 (3.2)
PAD	1,388 (5.3)	866 (8.5)	522 (3.3)

<sup>a</sup> Not mutually exclusive. Abbreviations: AMI = acute myocardial infarction; CHF: congestive heart failure; CKD: chronic kidney disease; COPD: chronic obstructive pulmonary disease; PAD: peripheral arterial disease; SD: standard deviation

FIGURE 2

LLT Patterns Pre-AMI (n=26,040)



LLT Patterns Post-AMI (n=26,040)

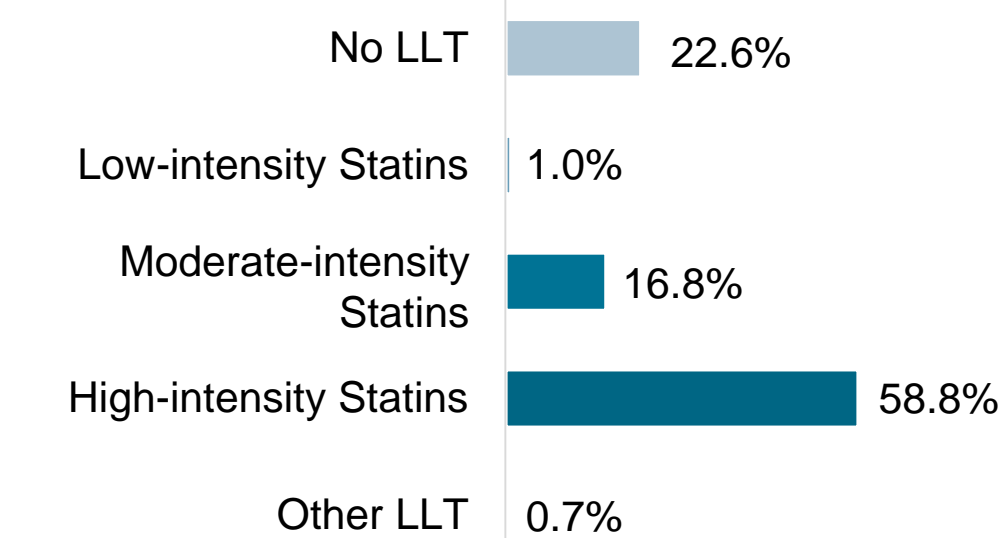
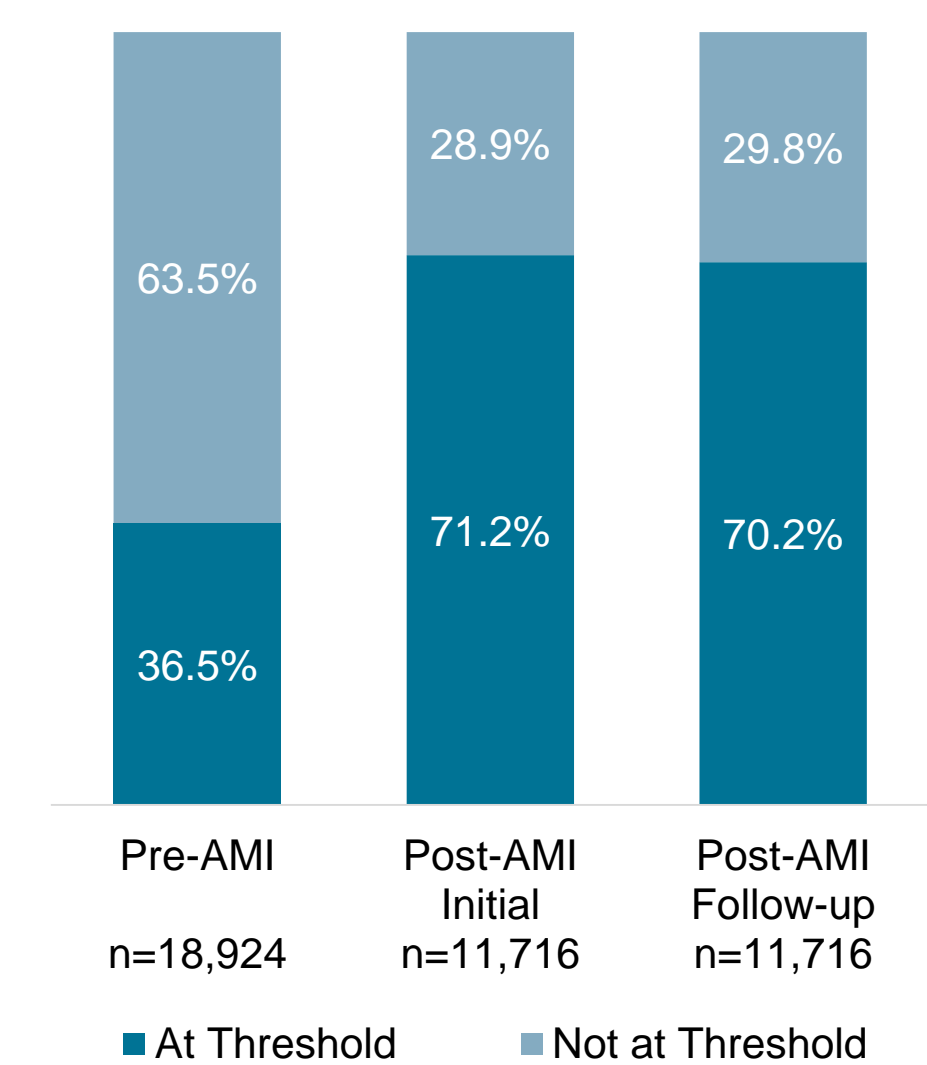


FIGURE 3

Proportion of patients achieving threshold LDL-C levels within two years post-AMI



## REFERENCES and DISCLOSURES

**REFERENCES:** (1) Anderson TJ, et al. 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. Can J Cardiol 2016; 32(11): 1263-82.

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**DISCLOSURES:** Scory T, Farris MS and Cowling T are employed by Medlior which received funding for the study from Amgen. Chen G is a consultant for Medlior which received funding for the study from Amgen. Shih YH and Pinto L are/were employed by Amgen who funded this study and hold Amgen stock.