Therapeutic gaps in low-density lipoprotein cholesterol management have narrowed over time but remain wide: a wide study of 40,141 acute coronary syndrome patients from 2016 to 2021

H. Sun¹, A. Lai¹, G.M. Tan¹, B. Yan¹
¹The Chinese University of Hong Kong, Hong Kong, China

Funding Acknowledgements: None.

Background: There are significant therapeutic gaps in ‘real-world’ low-density lipoprotein cholesterol (LDL-C) management in very-high risk patients. Understanding these gaps is important for developing strategies to bridge these gaps.

Purpose: We aimed to evaluate trends and identify therapeutic gaps in LDL-C management in very-high risk patients.

Methods: We retrospectively analyzed consecutive patients admitted with a diagnosis of acute coronary syndrome (ACS) to 16 public hospitals in between 2016 and 2021. Baseline and 12-month lipid-lowering therapy (LLT) including statins, ezetimibe and proprotein convertase subtilisin/ kexin type 9 (PCSK9) inhibitor and LDL-C levels were recorded. We evaluated trends-over-time in percentage achievement of guideline Class I recommendations including (i) in-hospital initiation of high-intensity LLT; (ii) lipid-profile at follow-up post discharge; (iii) achieve at least 50% reduction in LDL-C from baseline with a goal of (iv) LDL-C <1.4 mmol/L.

Results: Of 40,141 ACS patients (mean age 71, male 66.5%), 61.2% were statin-naïve on admission. Baseline average LDL-C was 2.35 mmol/L (IQR 1.74 to 3.13 mmol/L). LLT prescription on discharge increased over time from 63.8% in 2016 to 96.2% in 2021. The use of high-intensity statins on discharge also increased over time from 24.7% to 53.7% but still suboptimal. The use of high-intensity statins increased significantly at 12-months (29.4% in 2016 and 59% in 2021) compared to on discharge (44.1% vs. 40.9% overall, p<0.001). The use of combination LLT was very low (1.3%-3.8%). Up to 22% of patients did not have repeated lipid profile after discharge. Of patients who had follow-up lipid profile, the median LDL-C was 1.74 mmol/L with a median LDL-C reduction of 29%. Only 27.5% reached the LDL-C goal of <1.4 mmol/L and 22.5% achieved at least 50% of LDL-C reduction. LDL-C reduction improved over time from 25.8% in 2016 to 31% in 2021, proportion of patients who reached LDL-C goal of <1.4 mmol/L improved over time from 20.8% in 2016 to 28.7% in 2021, and proportion of patients who achieved at least 50% of LDL-C reduction improved over time from 18.5% in 2016 to 24.6% in 2021, respectively.

Conclusion: Despite an increasing trend in the use of high-intensity statins and combination LLT over time, most patients did not reach guideline-recommended LDL-C target. Early up-titration of statin and addition of non-statin LLT may be required in the majority of patients.