

Summary

Acute coronary syndromes (ACS) remain a leading cause of cardiovascular mortality. Treatment outcomes critically depend on dual antiplatelet therapy (DAPT), in which the choice of P2Y₁₂ receptor inhibitor — clopidogrel, prasugrel or ticagrelor — plays a pivotal role. The Fourth Universal Definition of Myocardial Infarction and the 2020 and 2023 ESC Guidelines have substantially modified the structure of diagnoses and therapeutic recommendations.

To assess the evolution of antiplatelet therapy in ACS patients in Poland between 2009 and 2024, including changes in the structure of diagnoses, the frequency of use of individual P2Y₁₂ inhibitors, and comparison of their efficacy and safety during 12-month follow-up.

A retrospective analysis of data collected prospectively within the Polish Registry of Acute Coronary Syndromes (PL-ACS). Patients hospitalised for STEMI, NSTEMI or unstable angina (UA) who received a P2Y₁₂ inhibitor and were discharged with a 12-month DAPT recommendation were included. The structure of diagnoses, the frequency of clopidogrel, prasugrel and ticagrelor use relative to ESC guideline updates, and 12-month clinical outcomes — efficacy, safety and net clinical benefit — were analysed.

A significant reclassification within NSTEMI-ACS was observed — an increase in NSTEMI diagnoses and a decrease in UA, with no significant change in STEMI frequency. Ticagrelor and prasugrel progressively replaced clopidogrel, most clearly in the STEMI population, whereas implementation of ESC recommendations remained markedly insufficient in NSTEMI and UA patients. Prasugrel and ticagrelor showed superior ischaemic efficacy versus clopidogrel, with no clinically relevant differences between them. Ticagrelor demonstrated a more favourable safety profile and better net clinical outcome. Use of clopidogrel instead of prasugrel or ticagrelor was associated with a substantial estimated loss of achievable clinical benefit.

Excessive use of clopidogrel instead of prasugrel and ticagrelor — contrary to ESC recommendations — substantially reduces achievable clinical benefit in ACS patients. Further optimisation of individualised P2Y₁₂ therapy and better alignment of routine practice with current evidence are needed.

Keywords: *acute coronary syndromes, P2Y₁₂ inhibitors, clopidogrel, prasugrel, ticagrelor, PL-ACS registry*