ACE agency for care effectiveness

ACE impact

$P2Y_{12}$ inhibitors with aspirin (dual antiplatelet therapy) for patients with acute coronary syndrome (ACS)

PUBLISHED DECEMBER 2024

P2Y12 inhibitors with aspirin (dual antiplatelet therapy) for patients with acute coronary syndrome (ACS)

EXPANDING ANTIPLATELET OPTIONS FOR PATIENTS WITH ACS

Acute coronary syndrome (ACS) is a term used to describe heart conditions where blood flow to the heart is reduced or blocked, typically due to plaque build-up in the coronary arteries.[1] The conditions include heart attacks (acute myocardial infarction) and unstable angina.

After an ACS event, clinicians recommend that patients take two types of blood-thinning medications — aspirin and a P2Y12 inhibitor — for at least 12 months.[2, 3] This treatment combination helps to reduce the risk of new blood clots forming. The P2Y12 inhibitor, clopidogrel, is listed on the Ministry of Health Standard Drug List. However, clopidogrel may not always work the same for everyone.

To provide treatment alternatives for patients with ACS, ACE conducted a health technology assessment (HTA) to inform subsidy recommendations for ticagrelor, another P2Y12 inhibitor. Value-based pricing negotiations were conducted alongside the HTA to improve the cost-effectiveness of this medication. On 2 January 2019, ticagrelor was listed on the Medication Assistance Fund (MAF) due to clinical need, favourable clinical effectiveness and acceptable cost-effectiveness compared to clopidogrel.

DID YOU KNOW?

Around **30 to 40 people** in Singapore are diagnosed with acute myocardial infarction each day, and this number is increasing each year.[5]

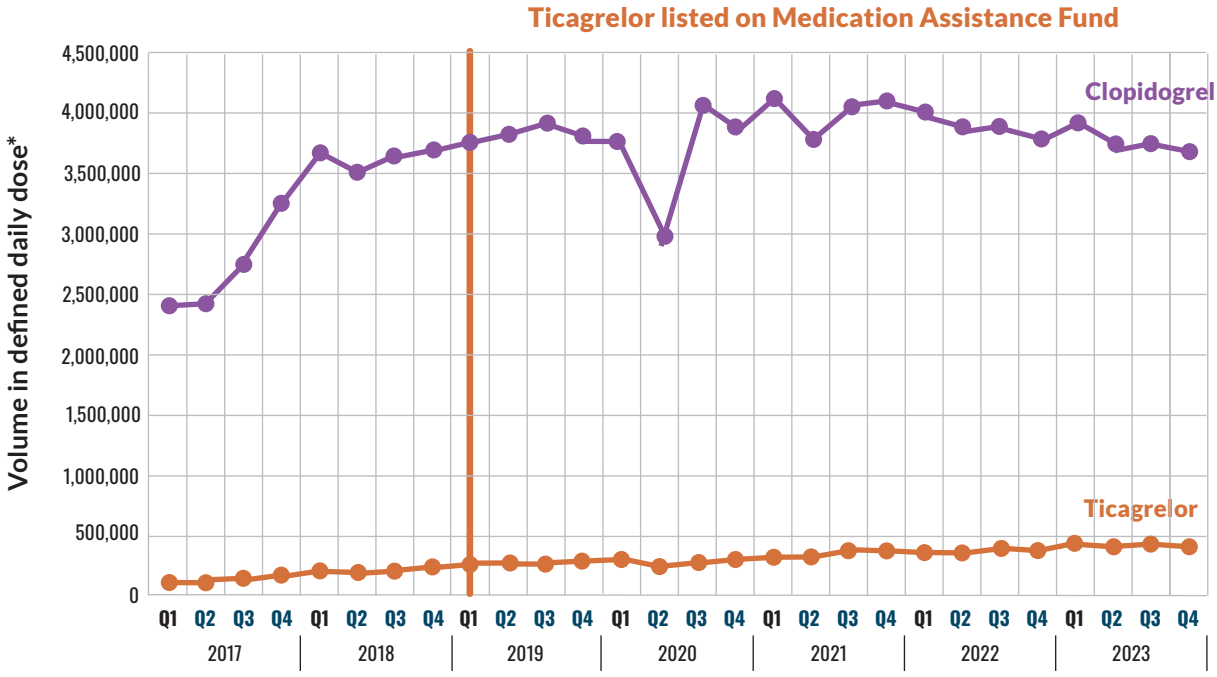
In the Asia-Pacific region, about **5%** of people with ACS die while in the hospital, and up to 10% die within one year post-discharge.[4]

Among the different heart conditions, non-ST elevation myocardial infarction is about **3 times more** common than ST-elevation myocardial infarction.[5]

SUBSIDY LED TO HIGHER UPTAKE AND POSITIVE OUTCOMES

Ticagrelor was listed on the MAF for subsidy in January 2019. Prior to this, local use of both clopidogrel and ticagrelor had increased, likely due to international treatment guidelines recommending dual antiplatelet therapy for stroke prevention and patients with ACS. Following the subsidy, the use of ticagrelor in public healthcare institutions continued to increase by over 80%, while the use of clopidogrel remained stable. The increase in ticagrelor use was particularly evident among ACS patients post-subsidy, in line with subsidy recommendations.

Utilisation of ticagrelor vs. clopidogrel



*Defined daily dose, assigned by the World Health Organization, is the assumed average maintenance dose per day for a drug used for its main indication in adults.

A real-world retrospective study by ACE showed that after 12 months of follow-up, patients with ACS started on ticagrelor had a 14% lower risk of major adverse cardiovascular events (MACE) — comprising all-cause death, acute myocardial infarction, and stroke or transient ischaemic attack — compared to those on clopidogrel. The lower risk was mainly due to lower mortality among ticagrelor users.

Based on actual and projected numbers of local patients with ACS starting on ticagrelor in the first five years after the subsidy listing, ACE estimated that 68 MACE were avoided, and about $350,000 was saved from hospitalisations avoided.

References:

1 American Heart Association (AHA). Acute Coronary Syndrome. Retrieved from: https://www.heart.org/en/health-topics/heart-attack/about-heart-attacks/acute-coronary-syndrome

2 Levine GN, Bates ER, Bittl JA, et al. 2016 ACC/ AHA guideline focused update on duration of dual antiplatelet therapy in patients with coronary artery disease. Circulation. 2016; 134 (10): e123–55. doi: 10.1161/CIR.0000000000000404.

3 Valgimigli M, Bueno H, Byrne RA, et al. 2017 ESC focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS: The Task Force for dual antiplatelet therapy in coronary artery disease of the European Society of Cardiology (ESC) and of the European Association for Cardio-Thoracic Surgery (EACTS). Eur Heart J. 2018; 39 (3): 213–260. https://doi.org/10.1093/eurheartj/ehx419 (ESC)

4 Chan MY, et al. Acute coronary syndrome in the Asia-Pacific region. Int J Cardiol. 2016; 202: 861–869.

5 National Registry of Diseases Office. Singapore Myocardial Infarction Registry Annual Report 2021. Retrieved from: https://nrdo.gov.sg/docs/librariesprovider3/default-document-library/smir-annual-report-2021-(web)_final.pdf?sfvrsn=3418ed95_0

We would like to thank the public healthcare institutions mentioned for supporting us in carrying out the study.
Published December 2024

For enquiries regarding this report, please contact **ace_hta@moh.gov.sg**.