

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Multiple Technology Appraisal

Prasugrel with percutaneous coronary intervention for treating acute coronary syndrome (review of TA182)

Final scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of prasugrel in combination with aspirin within its licensed indication for the treatment of acute coronary artery syndromes (review of TA182).

Background

Acute coronary syndrome (ACS) refers to a group of symptoms associated with acute myocardial ischaemia. It encompasses a spectrum of disorders or syndromes including acute myocardial infarction (MI) and unstable angina pectoris. ACS is usually the result of an acute or sub-acute primary reduction of myocardial oxygen supply provoked by disruption of an atherosclerotic plaque (build-up of material within heart vessel) associated with inflammation, thrombosis, vasoconstriction and microembolisation. ACS becomes more prevalent with increasing age and incidence is higher in men than women. In England, there were approximately 40,000 hospital admissions for unstable angina in 2009/10 and 58,247 hospital admissions for actual or suspected myocardial infarction in 2011/12.

The presence of ST-segment-elevation myocardial infarction (STEMI) on an electrocardiogram usually indicates total occlusion of the affected artery, resulting in necrosis of the tissue supplied by that artery (acute MI). This condition is treated immediately with reperfusion therapy (thrombolysis or percutaneous coronary intervention [PCI]). ACS without STEMI is classified as either unstable angina (UA) or non-ST-segment-elevation myocardial infarction (NSTEMI). NSTEMI differs from unstable angina primarily in the severity of myocardial ischaemia. In NSTEMI, the ischaemia is severe enough to result in the release of biochemical markers of myocardial injury into the blood. Immediate treatment for these conditions aims to prevent progression to total occlusion of the artery and, for people at high risk of MI, may include coronary revascularisation, either by means of PCI or coronary artery bypass graft.

Long term management of ACS includes the use of aspirin plus a thienopyridine (clopidogrel, prasugrel) or a cyclopentyl-triazolo-pyrimidine (ticagrelor). NICE has produced clinical guidelines on secondary prevention in primary and secondary care for patients following an MI (NICE clinical guideline 48) and the early management of unstable angina and non-ST-segment-elevation myocardial infarction (NICE clinical guideline 94). NICE clinical guideline 48 recommends that after STEMI, patients treated with

clopidogrel in combination with aspirin during the first 24 hours after the MI should continue this treatment for at least 4 weeks. Thereafter, standard treatment including low-dose aspirin should be given, unless there are other indications to continue clopidogrel in combination with aspirin. According to clinical guideline 94, NICE recommends that clopidogrel in combination with low-dose aspirin should be continued for 12 months after the most recent acute episode of NSTEMI. Thereafter, standard care, including treatment with low-dose aspirin alone is recommended, unless there are other indications to continue clopidogrel in combination with aspirin.

Since the publication of NICE clinical guideline 48, NICE has recommended prasugrel in combination with aspirin as an option for preventing atherothrombotic events in people with acute coronary syndromes having PCI, only when: immediate primary PCI for STEMI is necessary, stent thrombosis has occurred during clopidogrel treatment or the patient has diabetes mellitus (NICE technology appraisal guidance 182). NICE also recommends ticagrelor in combination with low-dose aspirin for up to 12 months as an option for people with STEMI who are to be treated with PCI, NSTEMI or unstable angina (NICE technology appraisal guidance 236).

The technology

Prasugrel (Efient, Lilly UK) is an oral inhibitor of platelet activation and aggregation through the irreversible binding of its active metabolite to the P2Y₁₂ class of adenosine diphosphate receptors on platelets.

In February 2009, the European Medicines Agency granted a marketing authorisation for prasugrel when co-administered with aspirin for the prevention of atherothrombotic events in patients with acute coronary syndrome undergoing primary or delayed percutaneous coronary intervention.

Intervention(s)	Prasugrel in combination with aspirin
Population(s)	Patients with acute coronary syndrome undergoing primary or delayed percutaneous coronary intervention
Comparators	<ul style="list-style-type: none"> • clopidogrel in combination with low-dose aspirin • ticagrelor in combination with low-dose aspirin
Outcomes	<p>The outcome measures to be considered include:</p> <ul style="list-style-type: none"> • non-fatal and fatal cardiovascular events • mortality (from any cause) • atherothrombotic events • incidence of revascularisation procedures • adverse effects of treatment (including bleeding

	<p>events)</p> <ul style="list-style-type: none"> health-related quality of life.
Economic analysis	<p>The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year.</p> <p>The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared.</p> <p>Costs will be considered from an NHS and Personal Social Services perspective.</p>
Other considerations	<p>If the evidence allows the following subgroups will be considered:</p> <ul style="list-style-type: none"> people with unstable angina or non-ST-segment-elevation myocardial infarction (UA/NSTEMI); ST-segment-elevation myocardial infarction (STEMI); people with diabetes mellitus; <p>Guidance will only be issued in accordance with the marketing authorisation.</p>
Related NICE recommendations	<p>Related Technology Appraisals:</p> <p>Technology Appraisal No. 182, October 2009, 'Prasugrel for the treatment of acute coronary syndromes with percutaneous coronary intervention'.</p> <p>Technology Appraisal No. 230, July 2011, 'Bivalirudin for the treatment of ST-segment elevation myocardial infarction (STEMI)'. Review proposal date July 2014.</p> <p>Technology Appraisal No. 236, 'Ticagrelor for the treatment of acute coronary syndromes (ACS)'. Review proposal date March 2013.</p> <p>Related Guidelines:</p> <p>Clinical Guideline No. 48, May 2007, 'Secondary prevention in primary and secondary care for patients following a myocardial infarction'. Under review.</p> <p>Clinical Guideline No. 94, March 2010, 'Unstable angina and NSTEMI: the early management of unstable angina and non-ST-segment-elevation myocardial infarction'. Review proposal date March 2013.</p> <p>Clinical Guideline in Preparation, 'Myocardial infarction</p>

	with ST-segment-elevation (STEMI): the acute management of myocardial infarction with ST-segment-elevation (STEMI)'. Earliest anticipated date of publication July 2013.
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