

1. What is the role of clopidogrel in ST-elevation myocardial infarction (STEMI)?

Question submitted by: Dr. Berringer, Vancouver, British Columbia.

Platelet aggregation on a ruptured coronary plaque can trigger the coagulation cascade and lead to an occlusive thrombus; the consequence is STEMI. In this situation, early and complete restoration of flow in the infarct-related artery (IRA) improves patient survival. However, reocclusion of the IRA may reduce survival. Thus, achieving and maintaining patency of the IRA are important objectives.

Because platelets play a pivotal role in STEMI, reperfusion strategies using combined antiplatelet therapy may improve outcomes. Acetylsalicylic acid (ASA) reduces reocclusion of the IRA by 40%, and death by 19% when added to thrombolysis. Clopidogrel also reduces platelet aggregation. Combining clopidogrel and ASA clearly reduces cardiac events in patients with unstable angina or non-STEMI, and in patients needing percutaneous coronary intervention (PCI). However, clopidogrel has not been well studied in the context of STEMI. It is given as a replacement in patients allergic to ASA. Clopidogrel added to ASA may improve patency achieved with thrombolysis, and may also prevent reocclusion. However, this combination may be associated with major bleeding, particularly in the elderly, who are more susceptible to intracranial bleeding.

Two ongoing studies have been evaluating the clopidogrel strategy. The Clopidogrel as

Adjunctive Reperfusion Therapy/Thrombolysis In Myocardial Infarction—Study 28 (CLARITY/TIMI-28) will enroll 2,200 patients to determine if the addition of clopidogrel enhances patency of the IRA. CLARITY/TIMI-28 will also assess clinical events and monitor safety. The Chinese Clopidogrel and Metoprolol Myocardial Infarction Trial (COMMIT) study will randomize 40,000 patients, who have had STEMI within the last 24 hours, to clopidogrel, metoprolol, or placebo, with death as the primary end point.

With primary PCI, both ASA and clopidogrel should be given as soon as possible to prevent abrupt vessel closure after the intervention. However, some cardiologists may withhold clopidogrel until the coronary anatomy is known, in case bypass surgery is warranted.

Combining clopidogrel and ASA is likely safe and effective with intravenous platelet GP IIb/IIIa receptor blockers.

Answered by:

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2. What is the current role of cardiac resynchronization therapy (CRT) in the overall management of severe congestive heart failure (CHF) in Canada today?

Question submitted by: Dr. Mosakoski, Hamilton, Ontario.


These days, CRT is playing an increasing role in the management of heart failure in Canada. We have a good setup in that our heart failure and pacemaker specialists work very closely with each other. They have same-day clinics on the same floor, and are often able to see the patient in the same setting.

CRT is used in heart failure patients who are severely symptomatic (Class 3 to Class 4) despite optimal medical therapy, such as beta blockers, angiotensin-converting enzyme (ACE) inhibitors, spironolactone, and diuretics, and who have a QRS duration > 120 ms, and an ejection fraction < 35%. A "six-minute walk" test is used as a screening tool. After bi-ventricular pacemaker implantation, a close followup is performed in both clinics, and the six-minute walk test is repeated. With this therapy, a number of patients have noticed a marked improvement in their symptoms.

The recently released trials, such as the Multicentre In sync Randomized Clinical Evaluation (MIRACLE)¹ and the Comparison of Medical Therapy, Pacing, and Defibrillation in Chronic Heart Failure (COMPANION)² study, provide very good scientific evidence that CRT:

- improves quality of life,
- improves walking distance,
- improves left ventricular performance,

- reduces hospitalizations, and
- possibly reduces mortality.

I believe all patients who are not doing well, despite optimal medical/surgical therapy, should be considered for CRT if they meet current criteria. Further scientific study is required to help identify exactly which patients may benefit from CRT and how to optimally program these devices. We are currently examining the use of tissue, Doppler imaging, tissue velocity, and strain, in an attempt to answer these questions. 

Answered by:

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References

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