RECOMMENDATIONS

Summary of recommendations on percutaneous coronary intervention for the reperfusion of acute ST elevation myocardial infarction

G Montalescot, H R Andersen, D Antoniucci, A Betriu, M J de Boer, L Grip, F J Neumann, M T Rothman

Since primary percutaneous coronary intervention (PCI) is the mainstay of reperfusion in acute myocardial infarction (AMI), and because AMI represents the most urgent situation for PCI, recommendations based on scientific evidence and expert experience would be useful for centres practising primary PCI or those looking to set up a primary PCI programme. With this in mind, a group of eight European interventional cardiologists (all based at high volume centres) formed an expert consensus to provide recommendations on this subject.

The recommendations are intended for specialists who possess the necessary knowledge, experience, and skills to perform PCI, and who work in environments with appropriate resources and facilities.

RECOMMENDATIONS FOR PCI IN AMI

When performed by experienced operators, we strongly recommend PCI as the reperfusion strategy of choice for patients with AMI. When thrombolysis is contraindicated or has failed, or when patients are in cardiogenic shock, rapid transfer to a secondary unit should be ensured. Studies have shown that, where facilities are available, most AMI patients are candidates for PCI, and that PCI is effective in re-establishing coronary artery perfusion and in providing a good outcome in both the short and long term.

We strongly recommend that PCI for AMI is performed swiftly, with a door-to-balloon time of <2 hours. The benefit of reperfusion with primary PCI is maximal within two hours of symptom onset, but appears to be present in a time of reperfusion with primary PCI is maximal within two hours. The benefit of reperfusion 90 minutes after starting the therapy, transfer for rescue PCI should be considered. A number of studies and a recent meta-analysis have demonstrated the feasibility and efficacy of abciximab in reducing ischaemic complications after coronary angioplasty is widely accepted and therefore aspirin should be given as early as possible, with a recommended starting dose >160 mg; intravenous administration is preferable.

Whenever possible, a loading dose of 300–600 mg clopidogrel is recommended before intervention and a daily dose of at least 75 mg clopidogrel for at least one month post-intervention.

To date, abciximab is the only glycoprotein IIb/IIIa inhibitor proven to be clinically effective in PCI for AMI. Trials, including RAPPORT, ISAR-2, ADMIRAL, CADILLAC, and ACE, have demonstrated the efficacy of abciximab during PCI for AMI. All five trials testing abciximab in primary angioplasty showed significant reductions in ischaemic events at 30 days. Therefore, immediate administration of abciximab on first presentation is recommended for AMI patients scheduled for primary PCI.

We recommend the administration of heparin at a dose adjusted to weight and/or activated clotting time (ACT).

Abbreviations: ACT, activated clotting time; AMI, acute myocardial infarction; IABP, intra-aortic balloon pump; PCI, percutaneous coronary intervention; UFH, unfractionated heparin.
recommend 70 U of unfractionated heparin (UFH) per kilogram in patients undergoing PCI with adjuvant glycoprotein IIb/IIIa inhibitors. Higher doses of UFH used together with glycoprotein IIb/IIIa inhibitors are associated with a risk of over-anticoagulation. Substitution of low molecular weight heparin for UFH appears promising but firm recommendations cannot be given at this time.

The American College of Cardiology recommends that patients not receiving glycoprotein IIb/IIIa inhibitors should be given sufficient UFH during coronary angioplasty to achieve an ACT of 250–300 s and 300–350 s. The UFH bolus should be reduced when glycoprotein IIb/IIIa inhibitors are given to achieve a target ACT of 200 s.1

CONCLUSION
This is the first paper to draw together a full range of recommendations for PCI in AMI including timing, adjunc-
tive pharmacological therapies and length of hospital stay post-PCI. More detailed analysis of the evidence supporting these recommendations can be found in the electronic version of this paper.

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Table 1 Recommendations for specific cases and post-PCI

| Case                        | Recommendation                                                                 |
|-----------------------------|-------------------------------------------------------------------------------|
| Facilitated PCI             | Facilitated PCI with pharmacological treatment helps establish early reperfusion |
|                            | before catheterisation                                                        |
|                            | Facilitation with abciximab is the only recommendation based on published     |
|                            | positive studies                                                              |
| PCI in coronary artery      | When dilating a saphenous vein graft, the use of distal protection devices or   |
| bypass grafts               | thrombectomy devices may help prevent post-procedural events, such as no     |
|                            | reflow and cardiogenic shock                                                  |
| Culprit vessel versus all   | Considering the limited options available, PCI is a valid therapeutic strategy in |
| vessel intervention         | these patients                                                                |
| Cardiogenic shock           | Given the lack of conclusive supporting evidence, the consensus among experts   |
|                            | is that “culprit only” intervention should be the recommended strategy. However, |
|                            | all accessible vessels should be treated in patients with shock               |
|                            | We recommend careful assessment of the risk of developing cardiogenic shock    |
|                            | in each patient to ensure early diagnosis and to allow rapid transfer and      |
|                            | adequate intervention                                                         |
| No reflow and myocardial   | Glyceryl trinitrate, verapamil, papaverine, nitroprusside, and adenosine are not |
| blush below grade 3         | recommended at this time. Optimal treatment for no reflow remains              |
|                            | undetermined                                                                  |
| Elderly patients            | Elderly patients are generally good candidates for angioplasty (and less so for |
|                            | thrombolysis                                                                  |
| Post-PCI                    | Early discharge (day 3) after optimal PCI for uncomplicated AMI in low risk    |
| Length of hospital stay     | Early discharge is not recommended in high risk patients or following any      |
|                            | complication or unsatisfactory procedure.                                     |

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