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.

Mortality is also linked to door-to-balloon time, with a significant increase in mortality when times exceed two hours.

We would therefore strongly recommend the transfer of AMI patients to cardiac catheterisation laboratories if the expected time to arrival is likely to be ≤ 2 hours. If the time to catheterisation is likely to exceed three hours, thrombolysis should be regarded as a valid option. If a patient undergoing thrombolytic therapy does not have signs 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 benefit of transferring patients to units with cardiac catheterisation facilities.

**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 

CONCLUSION
This is the first paper to draw together a full range of recommendations for PCI in AMI including timing, adjunctive 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.

ACKNOWLEDGEMENTS
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Table 1

<table>
<thead>
<tr>
<th>Case</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitated PCI</td>
<td>• Facilitated PCI with pharmacological treatment helps establish early reperfusion before catheterisation&lt;br&gt; • Facilitated with abciximab is the only recommendation based on published positive studies</td>
</tr>
<tr>
<td>PCI in coronary artery bypass grafts</td>
<td>• When dilating a saphenous vein graft, the use of distal protection devices or thrombectomy devices may help prevent post-procedural events, such as no reflow and cardiogenic shock&lt;br&gt; • Considering the limited options available, PCI is a valid therapeutic strategy in these patients</td>
</tr>
<tr>
<td>Culprit vessel versus all vessel intervention</td>
<td>• 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</td>
</tr>
<tr>
<td>Cardiogenic shock</td>
<td>• 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</td>
</tr>
<tr>
<td>No reflow and myocardial blush below grade 3</td>
<td>• Glyceryl trinitrate, verapamil, papaverine, nitroprusside, and adenosine are not recommended at this time. Optimal treatment for no reflow remains undetermined</td>
</tr>
<tr>
<td>Elderly patients</td>
<td>• Elderly patients are generally good candidates for angioplasty (and less so for thrombolysis)</td>
</tr>
<tr>
<td>Post-PCI</td>
<td>• Early discharge (day 3) after optimal PCI for uncomplicated AMI in low risk patients is recommended.</td>
</tr>
<tr>
<td>Length of hospital stay</td>
<td>• Early discharge is not recommended in high risk patients or following any complication or unsatisfactory procedure.</td>
</tr>
</tbody>
</table>
Summary of recommendations on percutaneous coronary intervention for the reperfusion of acute ST elevation myocardial infarction

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