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**European Society of Cardiology releases the first  
European Guidelines on Percutaneous Coronary Interventions (PCI)**

**Sophia Antipolis, France, 22 March 2005:** The European Society of Cardiology (ESC) releases the first European Guidelines on Percutaneous Coronary Interventions (PCI), pre-published and accessible on the ESC Web Site<sup>(1)</sup>. According to these Guidelines, PCI can now be regarded as the first option for a larger group of patients with acute coronary syndromes (ACS) than before. Recent technical and pharmacological improvements have developed PCI into a procedure that can be safely and effectively applied to patients with various types of coronary lesions and patients with and without myocardial infarction.

The ESC Guidelines on PCI represent the consensus of a Task Force of European experts<sup>(1)</sup>, chaired by Professor Sigmund Silber of the Gemeinschaftspraxis Hospital, Munich, Germany, Fellow of the ESC. Professor Silber outlines the highlights of the Guidelines and summarises the recommendations, whilst outlining the rationale behind their timing and their relevance to the European healthcare arena.

**ESC PCI Guidelines highlights**

One of the most pertinent points of the ESC guidelines is that thrombolysis for myocardial infarction can be administered within the first 3 hours after onset of chest pain, if no catheter lab is accessible, preferably within 90 minutes. Thrombolysis, however, should not be regarded as the final treatment stage: even if successful, thrombolysis should still be followed by invasive diagnosis and treatment, if applicable. A patient may feel fine after thrombolysis, but there is significant evidence that he/she should still undergo cardiac catheterisation, optimally within 24 hours after successful thrombolysis.

Due to the differences in the infrastructure between the USA and Europe, the ESC Guidelines differ from those of the USA (issued by the American College of Cardiology and American Heart Association)<sup>(2)</sup> when addressing issues of time and distance to catheter laboratories. The European Guidelines are based on the likelihood that most patients can reach a catheter laboratory, preferably within 90 minutes after first medical contact, if an appropriate network logistic has been established. Furthermore, the ESC Guidelines do not demand cardiac surgery on-site for PCI, since so many more hospitals are in a position to offer high-quality PCI. But the number one rule, worldwide, is: as soon as the patients feel chest pain, like a heart attack (especially those patients who have previously had a heart attack), they must immediately call or let somebody call for an ambulance. Even the best physician cannot help if the delay is too great.

### **Summary of ESC PCI Guidelines**

These Guidelines aim to present all the relevant evidence on PCI in order to help physicians weigh the risks and benefits of diagnostic and therapeutic procedures in their daily clinical decision-making. 30 pages of practically-oriented recommendations address when to perform PCI on the basis of currently available, peer-reviewed, published data, derived from randomised and nonrandomised clinical studies. A top-line summary of these recommendations follows:

1. PCI can be considered a valuable initial mode of revascularisation in all coronary artery disease patients with objective large ischaemia, and this is the case for every lesion subset except chronic total occlusions that cannot be crossed.
2. The addition of stents and newer adjunctive medications has improved PCI outcome. The decision to recommend PCI or CABG surgery will be guided by technical improvements in cardiology or surgery, local expertise and patients' preference.
3. Until proven otherwise, PCI should be used only with reservation in diabetics with multi-vessel disease and in patients with unprotected left main stenosis (although developments in drug-eluting stents may eventually alter this situation).
4. Patients presenting with NSTEMI-ACS (unstable angina or myocardial infarction without ST-segment elevation) have to be stratified first for their risk of acute thrombotic complications. A clear benefit from early angiography (<48 hours) and, when needed, PCI or CABG surgery, has been reported only in the high-risk groups.

5. Deferral of intervention does not improve outcome. Routine stenting is recommended on the basis of the predictability of the results and its immediate safety.
6. In patients with STEMI (ST-segment elevation - myocardial infarction), primary PCI within 12 hours after onset of chest pain should be the treatment of choice in patients presenting in a hospital with PCI facility and an experienced team.
7. Patients with contra-indications to thrombolysis or no signs that thrombolysis is working within 45–60 minutes after administration should be immediately transferred for PCI, as this might be their only option in order to ensure the swift opening up of the coronary artery.
8. In cardiogenic shock, emergency PCI for complete revascularisation may be life-saving and should be considered at an early stage.
9. Randomised trials that transfer the patients for primary PCI to a 'heart attack centre' have observed a better clinical outcome than thrombolysis. This has been observed despite the delay, due to transportation, between randomisation and the start of the treatment.
10. The superiority of primary PCI over thrombolysis seems to be especially clinically relevant, for the time interval between 3 and 12 hours after onset of chest pain or other symptoms, on the basis of its superior preservation of myocardium. Furthermore, with increasing time to presentation, major-adverse-cardiac-event rates increase after thrombolysis, but appear to remain relatively stable after primary PCI. Within the first 3 hours after onset of chest pain or other symptoms, both reperfusion strategies seem equally effective in reducing infarct size and mortality. Therefore, thrombolysis is still a viable alternative to primary PCI, provided that it can be delivered within 3 hours after onset of chest pain or other symptoms.
11. Primary PCI compared with thrombolysis significantly reduced stroke. Overall, the recommendation is for primary PCI over thrombolysis in the first 3 hours of chest pain, in order to prevent stroke, and in patients presenting 3-12 hours after the onset of chest pain, to salvage myocardium as well as preventing stroke.
12. At present, there is no evidence to recommend facilitated PCI.
13. After successful thrombolysis, to improve patient outcome, the use of routine coronary angiography within 24 hours and PCI (if applicable) is recommended. This applies even if the patient is asymptomatic and without demonstrable ischaemia.

14. If a PCI centre is not available within 24 hours, patients who have received successful thrombolysis, with evidence of spontaneous or inducible ischaemia before discharge, should be referred to coronary angiography and revascularised accordingly – independent of 'maximal' medical therapy.

### **Optimal time for PCI Guidelines**

"The field of PCI is constantly and rapidly evolving," explains Professor Silber, "We are always waiting for the next study and development. Following each new study, we need to re-evaluate our thinking and clinical practice".

With the wealth of recent landmark studies and developments in the field of PCI, the ESC feels that it is the appropriate moment to review the data released to date and offer guidance on the recommended procedures.

"We [the Task Force on PCI of the ESC] believe it is time to set the European Guidelines on PCI. We want to acknowledge and present the incredible amount of recent developments, studies and data on PCI. Following this recent peak in activity, it is the optimal moment to issue these Guidelines and we expect that our recommendations should remain valid for at least two to three years", says Professor Silber.<sup>(3)</sup>

### **Importance of Guidelines**

Guidelines are crucial to appropriate clinical practice, comprising specific recommendations on treatment methods, collated by senior European experts and opinion leaders in the field. For maximal relevance, Guidelines must be well presented, practical and relevant to the clinician on both a national and local level. The formulation and continual update of such Guidelines is one of the primary activities of the ESC. The ESC aims to produce Guidelines that both encompass and allow for national variations across Europe and works with its National Cardiac Society members to facilitate national adaptations and translations of each Guideline issued.

\*Ends\*

### **Notes to editors:**

For the full text of the ESC PCI Guidelines, see the following link to the ESC Web Site:  
<http://www.escardio.org/knowledge/guidelines/PCI-Guidelines.htm?1703>

## **The European Society of Cardiology (ESC)**

The European Society of Cardiology (ESC) represents more than 45,000 cardiology professionals across Europe and the Mediterranean. Its mission is to improve the quality of life of the European population by reducing the impact of cardiovascular disease.

The ESC achieves this through a variety of scientific and educational activities including the coordination of: clinical practice guidelines, education courses and initiatives, pan-European surveys on specific disease areas and the ESC Annual Congress, the largest medical meeting in Europe. Furthermore, the ESC promotes cardiovascular disease prevention messages to the general public, most notably during its annual 'For Your Heart's Sake' event, a fun yet educational event offering risk assessment and prevention advice, held in parallel to the Congress each year.

The ESC comprises 2 Councils, 4 Associations, 21 Working Groups and 49 National Cardiac Societies. Both the ESC Congress and 'For Your Heart's Sake' take place in late August / early September each year in a European 'Heart-Healthy City'. The next ESC Congress will be held from 3-7 September 2005 in Stockholm, Sweden.

The ESC administrative headquarters are based at the European Heart House, Sophia Antipolis, France. For more information on the ESC, Congress and initiatives, see [www.escardio.org](http://www.escardio.org).

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### **References**

<sup>(1)</sup> Guidelines for Percutaneous Coronary Interventions of the European Society of Cardiology: Sigmund Silber, Chairperson (Germany), Per Albertsson (Sweden), Francisco F Avilés (Spain), Paolo G Camici (UK), Antonio Colombo (Italy), Christian Hamm (Germany), Erik Jørgensen (Denmark), Jean Marco (France), Jan-Erik Nordrehaug (Norway), Witold Ruzyllo (Poland), Philip Urban (Switzerland), Gregg W Stone (USA), William Wijns (Belgium). <http://www.escardio.org>

<sup>(2)</sup> Smith Et Al., ACC/AHA Guidelines For Percutaneous Coronary Intervention (Revision Of The 1993 PTCA Guidelines), Jacc Vol. 37, No. 8, June 2001:2215-38

<sup>(3)</sup> <http://www.sigmund-silber.com>