INTERVENTION

Does PCI reduce long-term cardiovascular risks?

Randomized, controlled trials have shown that, compared with fibrinolytic therapy, primary percutaneous coronary intervention (PCI) reduces the risk of adverse cardiovascular events and mortality in patients with ST-segment elevation myocardial infarction (STEMI). However, observational studies have cast doubt on whether the risk reduction is maintained in the long term.

Randomized, controlled studies of PCI have several limitations that raise questions about their applicability to a 'real-world' setting. These studies are generally performed at expert PCI centers, and tend to include more males than females and younger, healthier participants, compared with patients usually seen with STEMI. Observational studies are generally thought to be less reliable than randomized, controlled trials but, if well-designed, can provide meaningful results that are more representative of a routine clinical setting.

At the request of The Quebec Agency of Technology and Modes of Intervention, a technology assessment agency, a group of researchers coordinated by Thao Huynh from McGill University, Canada, conducted a meta-analysis of data from randomized, controlled trials and observational studies.

All such studies published in peer-reviewed journals up to 1 May 2008 that compared primary PCI with fibrinolytic therapy were considered for the analysis. After screening for various inclusion and exclusion criteria, 23 randomized, controlled trials (8,140 patients) and 32 observational studies (185,900 patients) were included in the analysis. End points were analyzed as distinct events instead of composite end points in which each end point contributes equally to the composite, regardless of clinical relevance. Both types of studies showed comparable reductions in short-term (≤ 6 weeks after PCI) reinfarction and mortality, confirming

the benefits of PCI. At a follow-up period of 1 year or more, the reductions in adverse outcomes were still apparent in the randomized, controlled trials, whereas observational studies showed inconclusive results. "These results confirm those of previous meta-analyses of randomized clinical trials and obviate their limitations by examining the results of fibrinolytic therapy and primary PCI in real-life settings," says Huynh. The researchers plan to undertake a meta-analysis of prehospital fibrinolysis compared with primary PCI, with a view to improving treatment of patients with STEMI.

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