CORONARY ARTERY DISEASE

Stents should not precede optimal medical therapy in stable CAD

A new meta-analysis of eight randomized, controlled trials (RCTs) has confirmed that percutaneous coronary intervention (PCI) should not be the first treatment option pursued in patients with stable coronary artery disease (CAD). Initial stent implantation was shown to provide no benefit over optimal medical therapy (OMT). “Given that 500,000 PCIs for stable CAD are performed in the US each year, at a cost of about \$10 billion, significant savings to the health-care system could be realized by the practice of evidence-based medicine,” highlights Dr David Brown (Stony Brook University Medical Center, New York, USA) who is one of the authors of the meta-analysis.

The benefit of revascularization in the setting of acute coronary syndromes is clear, but the benefit of PCI in the setting of stable CAD has been refuted by evidence from multiple RCTs. “Despite the conclusive findings of recent studies such as COURAGE and BARI 2D, cardiologists continue to refer patients with stable CAD for PCI,” notes Dr Brown.

In an editorial that accompanied the meta-analysis published in *Archives of Internal Medicine*, Dr William Boden agreed that too many patients are undergoing PCI before receiving OMT. He lamented that “while physicians outwardly worship at the altar of evidence-based medicine, in reality, we more often tend to practice selective evidenced-based medicine

... [where] we ignore or disdain the results of studies that are unpopular, conflict with our existing clinical practice beliefs, or collide with the conventional wisdom.”

Because many physicians are continuing to use a PCI-first strategy in patients with stable CAD, Dr Brown and Dr Kathleen Stergiopoulos decided to perform a meta-analysis to determine whether a signal of benefit exists for stenting as compared with OMT in this setting. They included data from eight prospective RCTs comparing PCI plus OMT with OMT alone in patients with stable CAD. All patients had been enrolled between 1997 and 2005. To conform to the inclusion criteria for the meta-analysis, the studies had to have reported individual outcomes of death and nonfatal myocardial infarctions and involve a minimum of 1 year follow-up. Additionally, at least 50% of the PCI procedures had to have involved stent implantation.

In total, the investigators assessed data for 3,617 and 3,612 patients randomly assigned to stent treatment and OMT, respectively. Mean follow-up was 4.3 years. No statistical differences in mortality (8.9% vs 9.1%), nonfatal myocardial infarction (8.9% vs 8.1%), unplanned revascularization (21.4% vs 30.7%), or persistent angina (29% vs 33%) were found.

“Prior meta-analyses have yielded conflicting results on this topic,” notes Dr Brown. “However, those studies included older studies that compared outdated PCI

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techniques (plain old balloon angioplasty) and medical therapies ... this is the only meta-analysis that compares contemporary interventional techniques and medical therapies.” On the basis of the findings from this and previous analyses, Dr Brown concludes that patients with stable CAD should initially be treated with medical therapy and should only be referred for PCI in situations where symptoms are intolerable despite OMT.

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Original article Stergiopoulos, K. & Brown, D. L. Initial coronary stent implantation with medical therapy vs medical therapy alone for stable coronary artery disease: meta-analysis of randomized controlled trials. *Arch. Intern. Med.* 172, 312–319 (2012)