



**Title** Percutaneous Transluminal Coronary Rotational Atherectomy for Lesions of the Coronary Arteries – May 2002

**Agency** MSAC, Medical Services Advisory Committee

Commonwealth Department of Health and Ageing

GPO Box 9848 Canberra ACT 2601 Australia; Tel: +61 2 6289 6811, Fax: +61 2 6289 8799

<http://www.msac.gov.au>

**Reference** MSAC Application 1036. ISBN 0 642 82135 6 February 2003

## Aim

To assess the safety, effectiveness and cost effectiveness of adjunctive percutaneous transluminal coronary rotational atherectomy (PTCRA) with particular reference to noncomplex lesions, complex lesions, in-stent restenosis, and lesions refractory to or contraindicated for coronary angioplasty, relative to the comparator methods of coronary artery bypass graft (CABG) surgery and percutaneous transluminal coronary angioplasty (PTCA).

## Conclusions and results

*Safety:* PTCRA with or without PTCA is no more likely to result in Q-wave infarcts or emergency surgery compared to PTCA alone. Patients are also less likely to experience angiographic dissection or proceed to bailout stenting. PTCRA is as safe as PTCA in the first 24 hours of the procedure. However, minor complications, eg, temporary vessel spasm and slow flow are more likely. The data are insufficient to conclude whether PTCRA is as safe as PTCA in revascularizing different types of coronary artery lesions.

*Effectiveness:* When conventional PTCA with or without stent placement is feasible, PTCRA appears to confer no additional patient benefit. In cases of in-stent restenosis, the evidence is limited but conflicting, and no long-term data support the routine use of rotational atherectomy. Expert clinical opinion indicates that in certain circumstances rotational atherectomy is a useful adjunctive procedure to increase the success of angioplasty in revascularizing complicated or calcified lesions. In cases where conventional angioplasty and stenting cannot be undertaken successfully, or where clinical or angiographic outcome is poor, PTCRA may be an effective adjunctive procedure.

*Cost effectiveness:* Cost effectiveness ratios could not be determined due to limited research data on effectiveness and the paucity of robust cost estimates from high-quality studies.

## Recommendations

MSAC recommended, on the evidence pertaining to percutaneous transluminal coronary rotational atherectomy, that public funding:

- Is supported for revascularization of complex and heavily calcified coronary artery lesions which cannot be treated by PTCA alone or when previous PTCA attempts have not been successful; and for revascularization of complex and heavily calcified coronary artery stenoses where CABG surgery is contraindicated.
- Is not supported for revascularization of coronary artery stenoses which can be satisfactorily treated by PTCA alone, with or without stent placement; and for revascularization of coronary artery in-stent restenoses as a result of prior coronary artery intravascular interventions (since no long-term data exists and short-term data are conflicting).

The Minister for Health and Ageing accepted this recommendation (17 September 2002).

## Methods

The Centre for Clinical Effectiveness systematically reviewed the literature (with eligibility criteria defined a priori) on the role of rotational atherectomy. Sources searched from 1966 to March 2001: MEDLINE, PreMedline, National Library of Medicine Health Services Research Databases, Biological Abstracts, Best Evidence, Current Contents, EMBASE, the Cochrane Library, ISTAHC, and the NHS Databases, DARE, EED, and HTA. Internet and HTA agency sources were searched and studies were identified from MSAC applications and members of the Supporting Committee.

Prepared by Mr Mike McKenzie, Department of Health and Ageing, Australia