

Title:	Carotid Percutaneous Transluminal Angioplasty with Stenting
Agency:	Medical Services Advisory Committee (MSAC) Department of Health and Ageing GPO Box 9848 Canberra ACT 2601 Australia
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Aim

To assess the safety, effectiveness, and cost-effectiveness of carotid percutaneous transluminal angioplasty with stenting compared with carotid endarterectomy.

Conclusions and results

Safety

Neuroprotection: In the single randomised controlled trial to use neuroprotection there was no statistically significant difference between carotid PTAS and CEA in the incidence of 30 day, 1 year or 2 year mortality. No difference was seen in 30 day stroke, 30 day combined stroke or death. At 1 year there was a significantly higher occurrence of myocardial infarction (MI) in CEA patients on as treated, but not on intention to treat (ITT), analysis. There was no significant difference in MI at 30 days or 2 years. There was also no significant difference in the occurrence of major adverse clinical events (MACE) at 30 days, 12 months or 2 years. Comparisons of carotid PTAS with and without neuroprotection indicate that neuroprotection has a significant benefit over no neuroprotection, particularly in reducing the number of strokes after carotid PTAS.

Effectiveness

The incidence of all strokes at 12 months (an indicator of the ability of the intervention to prevent strokes) did not show a statistically significant difference between carotid PTAS and CEA in the only RCT to use neuroprotection. In the large registry study, new ipsilateral neurological events (including TIA, major and minor stroke and neurologic-related deaths) at 12 months were 1.2%, with a cumulative new event rate of 4.2% after 3 years. Clear benefits of carotid PTAS for restenosis could not be demonstrated for either the RCTs or the non-randomised comparative studies, partly due to incomplete measurement methods. Other effectiveness outcomes (including hospital stay) did not generally show clear or consistent differences between carotid PTAS and CEA.

Cost-effectiveness and cost impact

Since the superiority of carotid PTAS compared to CEA could not be established in this review, a cost minimisation analysis from a health system perspective was done. This showed carotid PTAS to be more costly than CEA.

Recommendation

MSAC found that the safety and effectiveness of carotid percutaneous transluminal angioplasty with stenting (CPTAS) neuroprotection is equivalent to carotid endarterectomy (CEA) in patients who meet the usual clinical indications for CEA. Additional effectiveness has not been demonstrated for CPTAS over CEA. Neuroprotection devices should be used for CPTAS where feasible.

The unmeasured value of patient preference has been recognised. However, direct health care costs of CPTAS are higher, without a measurable improvement in outcome.

CPTAS should be funded for patients who meet the criteria for CEA but are unfit for open surgery (CEA). At current costs, public funding for CPTAS is not recommended for other patient groups.

The Minister for Health and Ageing accepted this recommendation on 4 July 2005.