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Is Carotid Endarterectomy Effective and Safe in Asymptomatic Patients with Carotid Stenosis?

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Question

Is carotid endarterectomy (CEA) effective and safe in asymptomatic patients with carotid stenosis?

Data Source

Cochrane systematic review of randomized controlled trials [1]. Trials were identified by searching Medline, Embase, the Cochrane Stroke databases, reference lists of relevant articles, contact with researchers. The search was updated in August 1999.

Patients

Patients with asymptomatic carotid stenosis, irrespective of the degree of stenosis or the method of determining the degree of stenosis. They were deemed 'asymptomatic' patients with no history of cerebrovascular symptoms, patients with prior symptoms in the vertebrobasilar circulation, and patients with prior carotid territory symptoms or history of CEA on the contralateral side.

Treatment

CEA. Specific surgical techniques, type of anesthesia, and whether surgery was unilateral or bilateral were not addressed. In some trials patients in medical and surgical groups were given aspirin, whereas in others only patients in the medical group received aspirin.

Outcome Measures

Efficacy: Risk reduction of stroke of any territory or type, or death from any cause, during follow-up (2–4 years).

Risk: Risk increase of death from any cause, or disabling stroke of any territory or type, within 30 days after surgery.

Quality of the Studies

Only randomized trials were included in the meta-analysis. Trial data analysis was on an intention-to-treat basis. Main methodological limits were lack of blindness, no standardization among centers for the type of treatment, and the high number of patients lost to follow-up.

Main Results

2,203 patients from 4 out of 7 identified trials were included in the review. 2 trials compared CEA with aspirin, and in the other two trials both treatment groups received aspirin. CEA reduced slightly but not significantly the risk of stroke or death during follow-up, while it significantly increased the risk of perioperative stroke or death (table 1).

Conclusion

There is limited evidence favoring CEA for asymptomatic carotid stenosis, but the effect is at best of borderline significance, and extremely small in terms of absolute risk reduction.

Comment

CEA has proved to be significantly effective in patients with moderate or severe symptomatic carotid stenosis, in whom it reduces the risk of stroke or death during a follow-up period of 6 years [2]. In contrast, the efficacy of CEA is lower and statistically not significant in asymptomatic patients with carotid stenosis, in whom it is associated with a significant risk of perioperative stroke or death. It is

Table 1. Efficacy and risk of CEA in asymptomatic patients with carotid stenosis

Efficacy and risk outcomes	Events/treatment ¹	Events/control ¹	OR (95% CI)	ARR %	NNT or NNH
Any stroke or death during follow-up (2–4 years)	220/1,087 (20)	259/1,116 (23)	0.85 (0.69–1.05)	3	33
Any stroke or death within 30 days after surgery	34/1,087 (3)	5/1,116 (0.4)	4.75 (2.52–8.97)	2.7	37

OR = Odds ratio; ARR = absolute risk reduction; NNT or NNH = number needed to treat or to harm.

¹ Figures in parentheses represent percent.

worth noting that the risk of a new stroke is in fact lower in asymptomatic than in symptomatic patients, and therefore the perioperative risk in asymptomatic patients must be very low to achieve an optimal risk/benefit ratio [3, 4].

References

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