Stenting was noninferior to endarterectomy in patients with severe carotid artery stenosis and coexisting conditions


**Main Results**
Carotid artery stenting with an emboli-protection device was not inferior to carotid endarterectomy in preventing the cumulative incidence of death, stroke, or MI at 30 days plus death or ipsilateral stroke between 31 days and 1 year (Table).

**Conclusion**
In patients with severe carotid artery stenosis and coexisting conditions, carotid artery stenting with an emboli-protection device was noninferior to carotid endarterectomy.

**Commentary**
Before the SAPPHIRE trial, 4 small randomized trials (1–4) suggested that angioplasty, stenting, or both were associated with a slightly higher procedural risk than endarterectomy and a higher rate of restenosis. However, improvements in cerebral protection devices promised to reduce the procedural risks and prompted evaluation in SAPPHIRE and larger ongoing trials.

The SAPPHIRE trial suggests that stenting with a protection device is an appropriate alternative to endarterectomy in patients at increased risk for perioperative stroke or MI. However, the overall estimates of benefit and risk are imprecise due to the small sample size; further, the long-term effects of stenting beyond 1 year are not known. Moreover, the results of SAPPHIRE are not generalizable to patients at lower risk or to interventionalists who have not achieved comparable results after prospective and independent audit (5).

The use of carotid stenting is likely to increase, but whether it will be confined to cases in which endarterectomy is technically difficult or risky will depend on the overall results of larger trials comparing the short- and long-term benefits and risks of stenting and endarterectomy and the results of prespecified analyses of subgroups (e.g., neurologically symptomatic and asymptomatic stenosis, severity of stenosis, time since symptoms, age, sex, and antiplatelet regimen) (6).