DEBATE: INTERVENTION VS. BEST MEDICAL THERAPY IN ASYMPTOMATIC CAROTID STENOSIS - BEST MEDICAL THERAPY

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In the United States, 90% of carotid intervention (endarterectomy and stenting) is now for asymptomatic carotid stenosis. This inappropriate practice is being justified on the basis of comparing the results from the CREST trial (a modern study with no medical arm, with the medical arms of two studies that were done before intensive statin therapy (ACAS and ACST)). Such comparisons across studies are not legitimate.

The risks in CREST for asymptomatic patients – a procedural (30-day) risk of stroke or death of 2.5% for stenting and 1.4% for endarterectomy, and a 4-year risk of 4.5% with stenting and 2.7% with endarterectomy may seem reasonable compared to the 10% 5-year risk (or 2% per year) in ACAS and ACST.

However, with modern medical therapy, the risk of stroke or death has markedly declined since 2005. A prospective population-based study in the UK, a Canadian study of patients attending a stroke prevention clinic and a meta-analysis all showed that the risk of stroke or death in asymptomatic patients is now 0.5% per year. Concerns that the earlier meta-analysis did not take into account severity of stenosis were answered by Naylor in a later meta-analysis.

Cardiologists, who account for 30% of those performing carotid stenting, account for more than half the procedures. They seem to think, perhaps based on coronary anatomy, that opening up arteries to restore blood flow is a good thing. However, the brain is protected by the Circle of Willis; carotid endarterectomy and stenting are not about restoring blood flow; they are about preventing embolization from the proximal stenosis. Shoving a stent into a narrow carotid artery produces a shower of emboli into the brain, frequently resulting in small diffusion-weighted lesions in the brain on MRI. Stenting carries twice the risk of stroke compared to endarterectomy.

It is possible to identify, among patients with asymptomatic carotid stenosis, the 10% of patients who have a high enough risk to benefit from intervention. The best supported method is transcranial Doppler embolus detection. Other promising approaches include ulceration on 3-dimensional ultrasound and echolucency on ultrasound. Additional methods for imaging vulnerable plaque, including MRI plaque composition and plaque inflammation on PET/CT scans, are under investigation. For now, however, it must be understood that 90% of patients with asymptomatic stenosis would be better off with intensive medical therapy.

Lifestyle changes are far more important than most physicians realize. Best medical therapy includes smoking cessation, a Mediterranean diet, and moderate exercise. It also includes blood pressure control (including angiotensin converting enzyme inhibitors or angiotensin receptor blockers unless they are contraindicated), diabetes control, antplatelet therapy, intensive statin therapy (and addition of ezetimibe for patients whose plaque burden is progressing despite statins).

Until a modern randomized trial comparing stenting, endarterectomy and best medical therapy is carried out, widespread endarterectomy or stenting of asymptomatic carotid stenosis for unselected patients with asymptomatic carotid stenosis should be regarded as malpractice. It is to be hoped that the proposed CREST-2 trial, which includes a medical arm, will be funded.

References


