2018 MID-ATLANTIC
CONFERENCE

8th ANNUAL CURRENT CONCEPTS IN
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Carotid Debate:

High-Grade Asymptomatic Carotid Stenosis Should Never Get Repaired

Two of the Largest and Most Important Multicenter Randomized Clinical Trials

- ACAS (Asymptomatic Carotid Atherosclerosis Study)
  - North America
  - 1662 patients
  - 1987-1993
  - 5 year risk of ipsilateral stroke, perioperative stroke, or death
    - 5.1 % in the endarterectomy group
    - 11.0 % in the medically managed group
- ACST (Asymptomatic Carotid Surgery Trial)
  - Europe
  - 3120 patients
  - 1993-2003
  - 5 year risk of stroke or perioperative death
    - 6.4 % in the endarterectomy group
    - 11.8 % in the medicvally managed group
- Combined analysis of the 2 studies failed to show benefit of CEA in women

Revascularization Volume in Asymptomatic Patients with Carotid Stenosis

- 130,000 CEAs in the US in 1995
- Medicare patients 2004-2006
  - 88% of carotid endarterectomies were for asymptomatic patients
  - 87% of carotid artery stenting procedures were for asymptomatic patients

Change in Stroke Risk Over Time in This Population

- Medically managed patients with asymptomatic carotid stenosis
- 2% before 2000
- 1% by 2010 and in multiple studies since
- Coincident with more aggressive risk factor management
  - Hypertension
  - Dyslipidemia
  - Anti-platelet Utilization

Abbott AL. Medical (nonsurgical) intervention alone is now best for prevention of stroke associated with asymptomatic severe carotid stenosis. *Stroke*. 2009;40(10): e573-e583.

Raman G, Moorthy D, Hadar N, et al. Management strategies for asymptomatic carotid stenosis. *Ann Intern Med.* 2013;158(9):676-685.

Guidelines on Screening for Asymptomatic Carotid Stenosis

- In 2014, the US Preventive Services Task Force recommended against routine screening in the general adult population
- The prevalence of asymptomatic carotid stenosis is only 0.5% in adults over the age of 65
- Guidelines for selected subgroups vary among the various Society and Multi-Society criteria
  - Bruit present, clinically significant vascular disease, intermediate or high risk Framingham score, ≥ 2 vascular risk factors
  - "Reasonable," "May be considered," "Appropriate," "Uncertain," and "Should be considered"
  - None recommended screening for the general population

What About Select Asymptomatic Populations?

- CABG
  - No randomized trials
  - 2011 observational study reported 3% perioperative stroke risk in both patients with and without severe carotid stenosis
  - 2011 meta-analysis indicated a 2% risk of ipsilateral perioperative stroke in patients with asymptomatic carotid stenosis
  - Severe bilateral carotid stenosis may be different (6.5% risk of stroke)
- Progressive Carotid Stenosis on Repeat Imaging
  - 214 patients identified with moderate or severe stenosis
  - Median follow up was 13 years; 68% had progressive stenosis
  - 6.2% of those with progressive stenosis suffered a stroke
  - 14.4% of those with progressive stenosis had a TIA

Naylor,AR, Brown MJ. Stroke after cardiac surgery and its association with asymptomatic carotid disease. Eur J Vasc Endovasc. 2011;41(5):607-624.
Mahmoudi M, et al. Patients with sevre asymptomatic carotid artery stenosis do not have a higher risk of stroke and mortality after CABG. Stroke. 2011;42(10):2801-2805.
Singh TD, et al. Asymptomatic carotid stenosis: Risk of progression and development of symptoms. Cerebrovasc Dis. 2015;40:236-243.

What Are We Trying To Prevent?

- Carotid Occlusion?
  - Risk of stroke with occlusion is low!!!
  - 1990 – 2014, 3681 patients followed by carotid ultrasonography
  - 316 progressed to occlusion
  - Only 3 (0.9%) patients had an ipsilateral stroke
  - Only 1 (0.3%) patient had a stroke at the time of occlusion
  - All strokes were before 2005
- Artery to Artery Emboli
  - Echolucent plaques and microemboli on TCD of MCA correlated with higher stroke risk
  - Microemboli are reduced with both CEA and intensive medical therapy

Yang C, et al. Risk of stroke at the time of carotid occlusion. JAMA Neurology 2015: Nov;72(11):1261-1267.

Where Do We Go From Here?

- CREST-2 should help clarify whether CEA or stenting is superior to intensive medical management in asymptomatic carotid stenosis
- None of the previous trials addressing this question utilized intensive medical therapy
- 2 separate studies
  - 1240 patients randomized in each
  - Intensive medical therapy alone vs CEA plus intensive medical therapy
  - Intensive medical therapy alone vs carotid stenting plus intensive medical therapy
  - LDL < 70
  - Systolic BP < 140
  - High grade carotid stenosis >70%

Summary

- Older studies of stroke risk and intervention in asymptomatic carotid stenosis prior to intensive medical management strategies favored intervention
- More recent studies examining stroke risk in patients treated with intensive medical management raise the distinct possibility that intervention in this group may be ill-advised
- CREST-2 should clarify whether or not invasive procedures are superior to intensive medical management alone

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