



TEXAS A&M - SCOTT & WHITE
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THE TEXAS A&M UNIVERSITY SYSTEM
HEALTH SCIENCE CENTER



Asymptomatic Carotid Stenosis: Surgery, Angioplasty or Medical Treatment

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SMSE 2015
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DEPARTMENT OF VETERANS AFFAIRS

Disclosure

I have no relevant financial relationships with proprietary entities producing health care goods or services related to the content of this presentation.

I participate in research for Endologix, Medtronic and Gore

Content may not reflect position of US Government

Perspective From A Conservative Vascular Surgeon

What to do with hemodynamically significant asymptomatic carotid stenosis?

- **When** to treat?
- **Treatment** method?
 - Best medical therapy
 - Endarterectomy – CEA
 - Angioplasty & stent - CAS

Historical Evidence for Decision Process

- Current practice management for carotid stenoses **based on 30+ year old clinical trials**
- Compared available medical management to CEA
 - **Symptomatic** 70-99% stenoses – Randomized trial 1981-1994 – NACET
 - **Asymptomatic** 50-99% stenoses – Randomized trial 1983-2003 - ACAS

Historical Evidence for Decision Process

- **Medical management**
 - Risk factor modification + ASA
 - No Statin or current antiplatelet therapies
 - No modern agents for managing comorbidities

Historical Evidence for Decision Process

- **Results**
 - **Symptomatic stenoses**
 - 3%/yr prevention benefit from CEA
 - 6% stroke/death risk @ 30 days
 - **Asymptomatic stenoses**
 - 0.5-1%/yr. prevention benefit from CEA
 - 3% stroke/death risk @ 30 days

Current Evidence for Decision Process

- **Medical management** - better today
 - Co-morbidities
 - Risk factors
- **Incidence of stroke in general population**
 - Progressively declining over past 30 years
 - Stroke risk ~ 0.5%/year now

Current Evidence for Decision Process

- **CREST Trial**
 - **CEA outcomes improved**
 - Stroke and/or death
 - **Symptomatic** ~ 4.7%
 - **Asymptomatic** ~ 2.7% or less
 - **CAS Outcomes**
 - Stroke and/or death
 - **Symptomatic** – 6.4%
 - **Asymptomatic** – 4.5%
 - **Outcomes of MI and cranial nerve injury**
 - ? relevance

Factoids

- Screening risk stratified populations with Duplex Carotid Imaging – **No Benefit!**
 - No level I or II evidence to support this strategy
- CAS in USA reimbursed only
 - Tx of symptomatic > 50% stenosis/ulceration
 - Cerebral protection device must be used
 - Participation in FDA IDE trial
 - Participation in PMA registry

Asymptomatic
Only

SO-----?

What to Do With the Patient With Symptomatic Carotid Disease

- **Best Overall Therapy**
 - **Aggressive medical management**
 - Statins
 - Antiplatelet agents
 - Optimal risk factor control
 - Optimal comorbidity treatment
 - **CEA or CAS**

SO-----?

What to Do With the Patient With Asymptomatic Carotid Disease

- Aggressive medical management
- Intervention for evidence of disease progression
 - **Worsening of lesion by duplex imaging**
 - Vulnerable plaque – GSM <25
 - Critical stenosis - >80%
 - End diastolic spectral velocity >120cm/sec
 - Acceptable risk for intervention
 - **Onset of cerebral or retinal ischemic symptoms**

Which Intervention is Best for the Asymptomatic Patient with Worsening Carotid Stenosis?

- **CEA & CAS are NOT equivalent for stroke prevention when performed by average surgeon / interventionist**
- **Isolated centers / operators have produced documented equivalence in both symptomatic & asymptomatic patients**

Who Benefits from CEA?

- Asymptomatic patients of low or average risk regardless of age
 - Peri-procedural stroke/death risk ~ 1.4%
- Patients with acute cerebral or retinal SSx who need intervention < 7 days
- Adverse anatomy for CAS
- Cost considerations

Who May Benefit from CAS?

Patients at “high risk” for CEA

- CAS in asymptomatic patients considered high surgical risk or < 70 years of age
 - Peri-procedural stroke/death risk ~2.5%

Cardiac Issues	Vascular Issues
NY Class III/IV CHF	Contralateral carotid occlusion
LVEF < 30%	Recurrent stenosis after CEA
Unstable angina	Neck radiation
Recent MI	Hostile anatomy
	Carotid bifurcation \geq C2

Thank You