2022 MID-ATLANTIC CONFERENCE

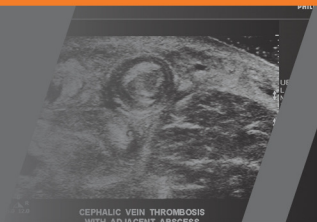
10th ANNUAL CURRENT CONCEPTS IN

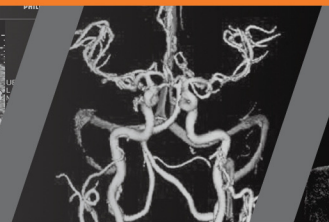
VASCULAR THERAPIES

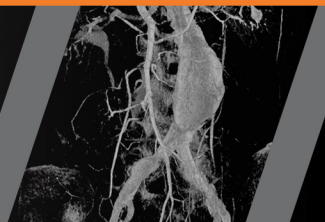
2022

Hilton Virginia Beach Oceanfront
Virginia Beach, Virginia

APRIL 28-30







Sentara Vascular Specialists

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Asymptomatic Critical Carotid Stenosis Should Be Treated with Medical Therapy ONLY

Rasesh M. Shah, MD, FACS

Sentara Vascular Specialists

Who assigned me this topic ??

1. Beware of what will happen if you give up any input into making the agenda !!!!!!!
2. Make the best of it ?
3. Maybe I will learn something !

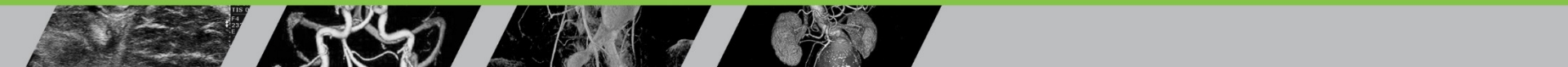

I GIVE UP!
makeameme.org

Asymptomatic Critical Carotid Stenosis Should Always Be Treated Surgically

Professor Anne Abbott

The best intervention is prevention and the best prevention is noninvasive

- A/Prof Abbott's major research discovery was that a person's risk of stroke can be reduced by at least 80% by them adopting a healthy lifestyle and the appropriate use of medication. These measures reduce the risk of stroke and other complications (like heart attack) and reduce the need for surgical procedures by reducing or eliminating the deleterious effects of 'risk factors' such as high blood pressure, high cholesterol, diabetes, smoking or physical inactivity.

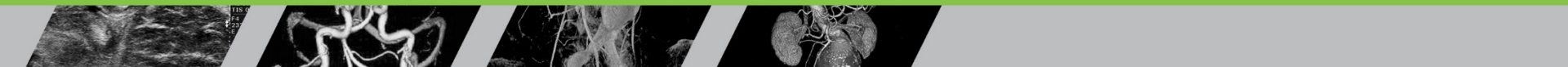


Is this even a problem ??

- 10 – 15 % of patients > 80 yrs of age will have '>50% carotid stenosis'
- Responsible for 12-20% of acute anterior circulation ischemic strokes

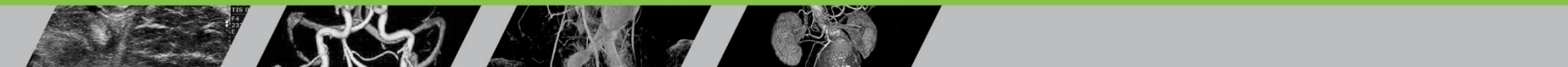
- In many countries surgery [CEA] for asymptomatic severe carotid stenosis is supported by best practice guidelines and commonly recommended or performed to prevent stroke. This is largely because of the results of 3 major randomized surgical trials: the Veterans' AffairsCooperativeStudy (VACS), the Asymptomatic Carotid Atherosclerosis Study (ACAS), and the Asymptomatic Carotid Surgery Trial (ACST) conducted 1983 to 2003.

Anne L. Abbott
Originally published20 Aug 2009 https://doi.org/10.1161/STROKEAHA.109.556068Stroke. 2009;40:e573–e583



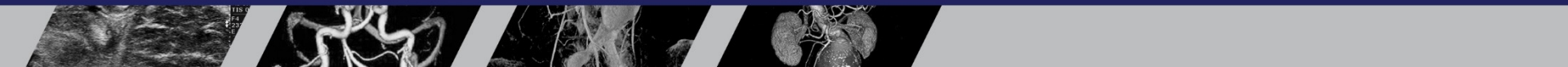
- There was an overall reduction of ≈1% in average annual absolute stroke risk among patients who received CEA plus medical intervention

- The key findings of this systematic review and analysis included significant falls in reported average annual rates of stroke associated with isolated medical intervention for asymptomatic severe proximal ICA stenosis since the mid-1980s. From 2001, average annual rates of ipsilateral stroke among patients receiving vascular disease medical intervention alone fell below those of patients who received CEA in ACAS



Questions to Ponder

- What degree of stenosis is ‘critical’
  - >60% - got you into ACAS
  - >70% - got you into TransFemoral CAS trials
  - >80% - got you into Roadster TCAR trials
- Plaque morphology
  - Heterogenous – ‘nasty, ugly’
  - Echolucent – ‘smooth, benign’



Surgically ?????

- Carotid Endarterectomy
- TransFemoral Stenting
- TCAR

Optimal Medical Therapy

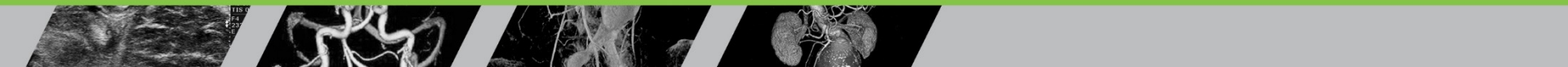
ACAS trial, published 1995. Carotid endarterectomy for 5-year ipsilateral stroke in asymptomatic patients.
Hypothesis:
Carotid endarterectomy, added to aggressive reduction of modifiable risk factors and administration of aspirin would reduce the 5-year risk of ipsilateral cerebral infarction in individuals with asymptomatic, hemodynamically significant (>60%) carotid artery stenosis.

Drug/Procedures Used:
Carotid endarterectomy
Concomitant Medications:
Aspirin, 325 mg qd (all patients)

Kaplan-Meier estimated 5-year risk of ipsilateral stroke and any periop stroke or death for the surgical group (5.1%) vs medical therapy (11.0%). The reduction in 5-year ipsilateral stroke risk in the surgical group was 53% of the 5-year risk in the medical group (95% CI, 22% to 72%), p = 0.004.

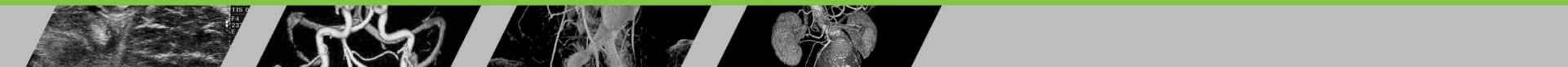
CEA NUMBERS SKYROCKETED !!!!!!!

The surgical group had a 20% reduction in any stroke or death compared to medical therapy, which was not statistically significant (95% CI -2% to 37%).



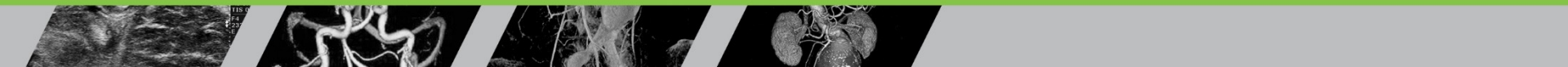
Optimal Medical Therapy

- Hypertension control
  - Each 10 mm decrease in BP will decrease stroke risk 33% (target 130/80)
- Statin therapy
  - Each 10% decrease in LDL will decrease stroke risk 15%
- Smoking cessation
  - Stroke risk doubled in smokers
- Diabetes control
  - Hgb A1c <7% to stabilize plaque
- Antiplatelet and Antithrombotic therapy
  - Optimal regimen unclear but all trials show benefit



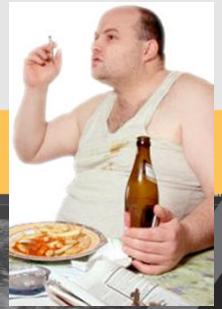
Success of BMT

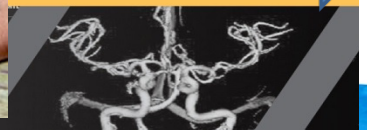
Results indicated loss of a statistically significant surgical advantage in prevention of ipsilateral stroke from the mid-1980s, of ipsilateral stroke/TIA from the early-1990s, of any-territory stroke from the mid-1990s, and of any-territory stroke/TIA from about 2001.



Best Medical Therapy

- STOP SMOKING
- Anti platelet
- Statin
- Hypertensive control
- Diabetes control
- Healthy diet / weight loss / exercise





Success of BMT

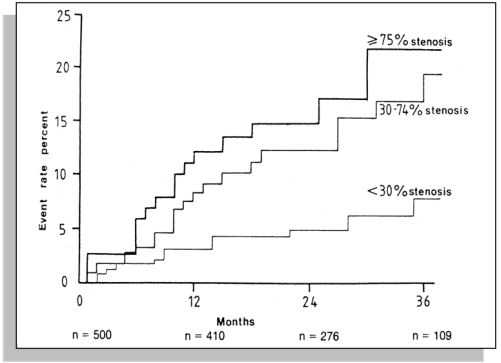
- **Only about 4% to 7%** of people are able to quit smoking on any given attempt without medicines or other help. Studies in medical journals have reported that between about **25% and 33%** of smokers who use medicines can stay smoke-free for over 6 months.
- Sep 27, 2021 · Only about 1 in 4 adults (24%) with hypertension have their condition under control. About half of **adults (45%)** with uncontrolled hypertension have a blood pressure of 140/90 mmHg or higher. This includes 37 million U.S. adults.
- The percentage of adults with diabetes in the United States who are effectively controlling their blood sugar levels dropped to fewer than **51%** in 2018 from just over 57% in 2010, an analysis published June 2021 by the New England Journal of Medicine found.

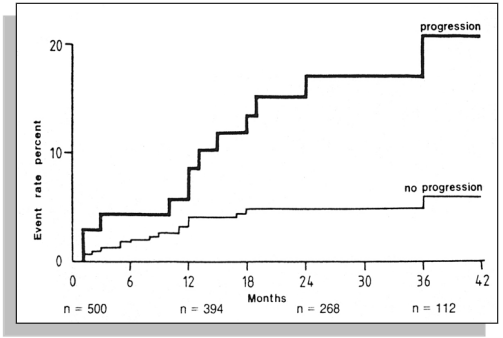
ASYMPTOMATIC STENOSIS: NATURAL HISTORY / RISK STRATIFICATION

- Consistent data

↓

- Stroke risk (5.5% per year if ≥ 75%) increases with increasing degree of stenosis and progression under observation





Chambers, Norris NEJM '86

Natural History
Symptomatic vs. Asymptomatic Lesions

Relationships Between Recent Intraplaque Hemorrhage and Stroke Risk Factors in Patients With Carotid Stenosis
The HIRISC Study

Guillaume Turc, Catherine Oppenheim, Olivier Naggara, Omer F. Eker, David Calvet, Jean-Christophe Lacour, Sophie Crozier, Evelyne Guegan-Massardier, Hilde Hénon, Jean-Philippe Neau, Jean-François Toussaint, Jean-Louis Mas, Jean-François Meder, Emmanuel Touzé, for the HIRISC study investigators

- 114 symptomatic & 120 asymptomatics studied + MRI data correlated with clinical stroke risk factors
- IPH in ≈ 33% overall irrespective of symptoms
- IPH associated with rising % stenosis
  - In asymptomatic % of stenosis useful surrogate

Arterioscler Thromb Vasc Biol. 2012;32:00-00

Risk of stroke in relation to degree of asymptomatic carotid stenosis

Rothwell et al, Lancet Neurology, March 2021

- Rationale: lack of association between the degree of asymptomatic stenosis and stroke risk among current data
- Variation in clinical practice:
  - In the US more than 75% of all endarterectomies are done in patients with asymptomatic disease vs 7% in the UK

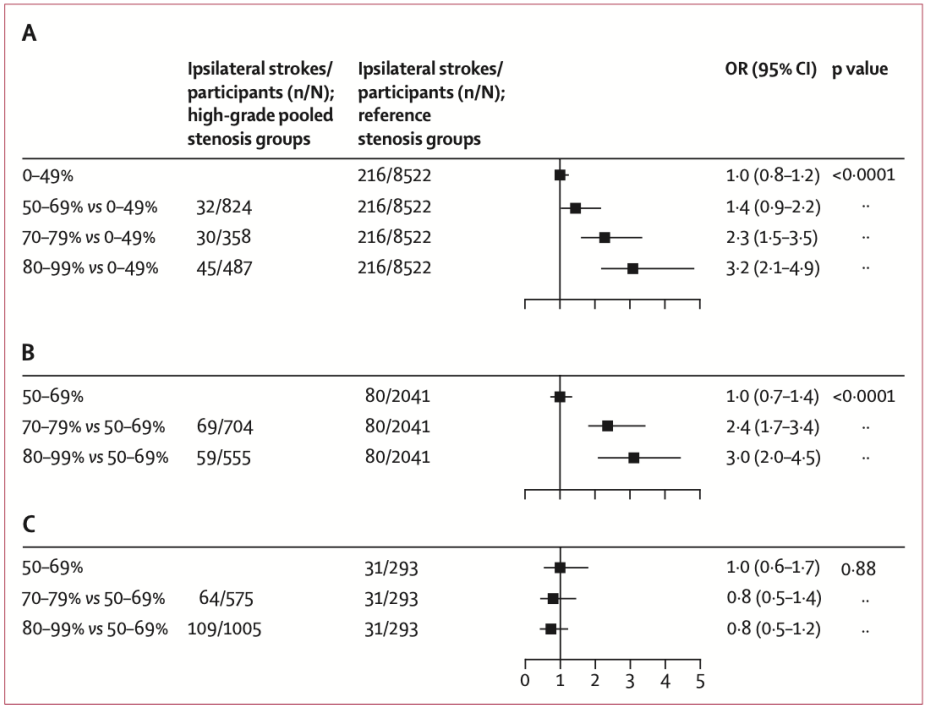
methods

- All patients prescribed “contemporary medical therapy”
  - Antiplatelet
  - Atorvastatin 40-80 mg/d
  - Antihypertensive medications initiated or increased in patients whose BP >130/80 at baseline or follow up
- Follow-up: 1, 6, 12, and 24 months, and 5 and 10 years until 10/1/2020
  - All cerebrovascular events identified
  - Patients reassessed by Neurologist

methods

- Systematic review and meta-analysis of all published studies reporting ipsilateral stroke in patients with asymptomatic carotid stenosis receiving medical therapy
- Studies published from January 1, 1980 to October 1,2020 were eligible
- 56 studies, 13,717 patients

Linear relationship between degree of stenosis and risk of stroke



Key findings

- 5 year ipsilateral stroke risk increased with the degree of stenosis
- Stroke risk at 5 years in patients with moderate **50-69% stenosis <5%**
- Stroke risk at 5 years in patients with severe **70-99% stenosis was ~15%**
- Patients with 80-99% stenosis had a 5-year ipsilateral stroke risk of **18.3%**.

Implications for clinical practice

- Benefit of surgical intervention for high grade stenosis may be underestimated and the benefit of revascularization for moderate stenosis is questionable
- In Europe, intervention rates for high-grade stenosis might be too low vs in the US, intervention rates for moderate stenosis might be too high.
- How will practice guidelines change?

Society for Vascular Surgery clinical practice guidelines for management of extracranial cerebrovascular disease

Ali F AbuRahma [1], Efthymios D Avgerinos [2], Robert W Chang [3], R Clement Darling 3rd [4], Audra A Duncan [5], Thomas L Forbes [6], Mahmoud B Malas [7], Mohammad Hassan Murad [8], Bruce Alan Perler [9], Richard J Powell [10], Caron B Rockman [11], Wei Zhou [12]

DOI: 10.1016/j.jvs.2021.04.073

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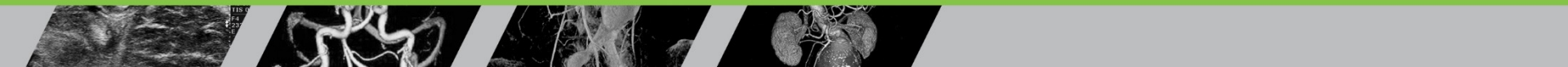
Bottom Line

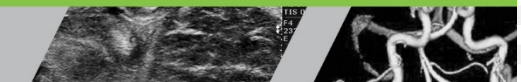
- ALL patients with carotid stenosis MUST RECEIVE BEST MEDICAL THERAPY
- MOST patients with SYMPTOMATIC carotid stenosis >50% should get intervention
- SOME patients with ASYMPTOMATIC carotid stenosis WILL BENEFIT from intervention



Asymptomatic Critical Carotid Stenosis Should ALWAYS Be Treated Surgically

yr old man with 80%
mptomatic LICA stenosis,
g cancer, 6 months to live

CEA under general anesthesia !!!



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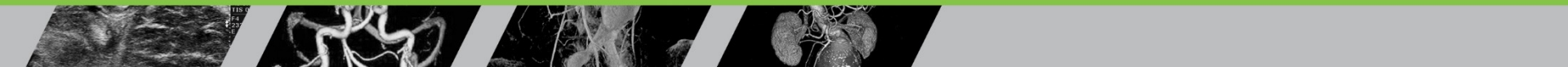

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