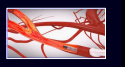
DEBATE

Not So: About 25% of ACS Patients Can Benefit From CEA or CAS And Should Be So Treated and Reimbursed Accordingly



Bruce A. Perler, MD, MBA

FINANCIAL DISCLOSURE

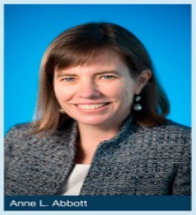
I Have No Financial Relationships to Disclose

Review article

What should we do

Currently, all asymptomatic stenosis patients should be treated medically: just look at the data!

Anne L. Abbott, MD, PhD, FRACP
Knox Private Hospital,
Melbourne, Australia


Anne L. Abbott

Two forms of revascularization intervention are offered in the name of reducing stroke risk associated with carotid arterial disease: procedural (carotid endarterectomy [CEA], trans-aortic carotid angioplasty/stenting [CAS], and trans-carotid arterial revascularization [TCAR]), and non-procedural (medical intervention). Medical intervention consists of lifestyle changes and medication.[1] Medical intervention is the gold standard by which all other interventions should be compared because it is non-invasive and of proven benefit in reducing risk for all arterial disease complications.

currently, all people with asymptomatic stenosis should be treated with medical intervention alone.[1] This is because reported ipsilateral stroke rates are so low with current standards of medical intervention

Good News for All: Stroke Prevention- More Effective, Less Invasive & Cheaper!

Advanced (50-99%) ACS + Non-invasive Intervention Alone

No More Than About 2% of ACS Patients Will Have Stroke Caused by it During Life!

- Average annual ipsilateral stroke rate was 0.8%

1.7% fall in Absolute Rate

≥67 % fall in Relative Rate to 0.8%

1985-2013

CLINICAL PRACTICE GUIDELINES

European Stroke Organisation guideline on endarterectomy and stenting for carotid artery stenosis

Recommendation

In patients with ≥60% asymptomatic carotid artery stenosis considered to be at increased risk of stroke on best medical therapy alone, we recommend carotid endarterectomy.

CLINICAL PRACTICE GUIDELINE DOCUMENT

European Society for Vascular Surgery (ESVS) 2023 Clinical Practice Guidelines on the Management of Atherosclerotic Carotid and Vertebral Artery Disease

For average surgical risk patients with an asymptomatic 60–99% stenosis, carotid endarterectomy should be considered in the presence of one or more imaging or clinical characteristics that may be associated with an increased risk of late stroke*, provided 30 day stroke/death rates are ≤3% and patient life expectancy exceeds five years.

The Society for Vascular Surgery implementation document for management of extracranial cerebrovascular disease

2. Neurologically asymptomatic patients with a 70% or greater diameter stenosis should be considered for CEA, TCAR, or transfemoral CAS for reduction of long-term risk of stroke, provided the patient has a 3- to 5-year life expectancy and perioperative stroke/death rates can be 3% or less.

European Stroke Journal, 2021
Eur J Vasc Endovasc Surg, 2022
J Vasc Surg, 2021

European Stroke Organisation guideline on endarterectomy and stenting for

THE DATA

Level 1 Evidence Establishing that

CEA Provides Superior Lifetime

Stroke Prevention

Compared to Medical Rx

THE DATA

Not All Patients with Asymptomatic Carotid Disease Have a 0.8% or 1% Annual Stroke Risk

…… or a 2% Lifetime Stroke Risk.

In Many Patients the Stroke Risk is Significantly Higher.

Ox… …2021

Risk of stroke in relation to degree of asymptomatic carotid stenosis: a population-based cohort study, systematic review, and meta-analysis

Jasmine F J Howard, Liam Gallacher, Peter M Rothwell, on behalf of the Oxford Vascular Study

5-Year Ipsilateral CVA Rate

Stenosis	No.	Ischemic CVA)	p
50-69%	154	0 (0%)	
70-99%	53	6 (14.6%)	< 0.0001
80-99%	34	5 (18.3%)	< 0.0001

Oxford Vascular Study — *Lancet Neurology* 2021

Results of CEA: Asx Stenosis

THE DATA

The Outcome of CEA is Also Far Better

than Ever Before, and Certainly Better

than in the ACAS and ACST Trials

Editorial

THE DATA

Not All Asymptomatic Patients are Truly Asymptomatic

Asymptomatic Carotid Disease May Contribute to Cognitive Decline

particular theme is selected for emphasis. This year it emphasizes one of the items of the World Stroke Day Agenda: … on the cause, ie, cardiac, cervical and cerebral and associated risk factors.

Stroke 2008

Asymptomatic carotid stenosis is associated with cognitive impairment

Brajesh K. Lal, MD;[1,2] Moira C. Dux, PhD;[1] Siddhartha Sikdar, PhD;[1] Carly Goldstein, BA;[1,3] Amir A. Khan, PhD;[1,2] John Yokemick, BA, RVT;[1] and Limin Zhao, MBBS, RVT;[1,2] *Baltimore, Md. and Fairfax, Va.*

Patients > 50% Asx Stenosis: 82
Controls: 62

Demographics

Risk factor	Patients with asymptomatic carotid stenosis (n = 82)	Controls (n = 62)	P
Age, years	68.9 ± 7	67.8 ± 7	.12
Male sex	97	94	.42
White race	80	50	.005
Diabetes	54	53	.34
Hypertension	85	89	.82
Dyslipidemia	71	73	.32
Coronary artery disease[a]	31	34	.27
Peripheral vascular disease	49	44	.19
Smoking	73	78	.32
Antiplatelet treatment	81.0	70.2	.28
Lipid-lowering treatment[a]	78.3	71.9	.21
Education, years	12.9 ± 2	13.3 ± 2	.11
Estimated depression (CES-D score)	12.2 ± 7.5	12.2 ± 10.2	.90
Estimated intelligence (HART score)	105.5 ± 8.4	104.9 ± 11.0	.72
Stenosis features			
Right	58.6%		
50%-69% stenosis	75.3%		
70%-79% stenosis	13.0%		
80%-99% stenosis	11.7%		

Cognitive Tests

Cognitive domain	Cognitive test
Learning and memory	[a]Hopkins Verbal Learning Test—Revised[57]
	[a]Brief Visuospatial Memory Test—Revised[58]
Motor and processing speed	[a]Trail Making Test—Part A[59]
	[a]Grooved Pegboard Test, dominant vs nondominant hand[60]
Executive and visuospatial function	[a]Trail Making Test—Part B[59]
	[a]Copy trial of the Rey Complex Figure Test[61]
Attention and working memory	[a]Wechsler Adult Intelligence Scale-III: Digit Span Forward[62]
	[a]Wechsler Adult Intelligence Scale-III: Digit Span Backward[62]
Language	[b]Verbal fluency (phonemic and semantic)[63]
	[b]Boston Naming Test, 2nd edition[64]

ACCOF Study — *J Vasc Surg* 2017

Asymptomatic carotid stenosis is associated with cognitive impairment

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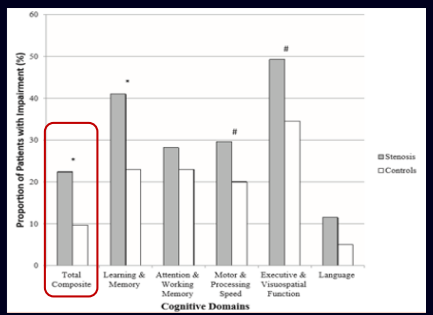
Cognitive Impairment vs Carotid Stenosis



ACCOF Study — *J Vasc Surg* 2017

Asymptomatic internal carotid artery stenosis and cerebrovascular risk stratification

Andrew N. Nicolaides, MS, FRCS, PhD (Hon),[a] Stavros K. Kakkos, MD, MSc, PhD, DIC,[a] Efthyvoulos Kyriacou, BSc, PhD,[b] Maura Griffin, MSc, DIC, PhD,[c] Michael Sabetai, MD, FRCS, PhD,[c] Dafydd J. Thomas, MD, PhD,[c] Thomas Tegos, MD, PhD,[a] George Geroulakos, MD, PhD,[a,d] Nicos Labropoulos, PhD, DSc,[e] [illegible], MSc,[f] Ron Naylor, MD, FRCS,[g] and Anne L. Abbott, MB, BS, FRACP, PhD,[h,i] for the Asymptomatic Carotid Stenosis and Risk of Stroke (ACSRS) Study Group, [illegible] *[a]Nicosia, Cyprus; Sony Brod, NT; and Melbourne, Australia*

Patients: 1,121
50 –99% Stenosis
F/U: 6-96 (Mean, 48) Months
CORI: 130 Events

THE DATA

While Not All Asx Patients Merit Intervention, MANY Do !

ACSRS

J Vasc Surg. 2010

Asymptomatic internal carotid artery stenosis and cerebrovascular risk stratification

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Patients: 1,121
50 –99% Stenosis
F/U: 6-96 (Mean, 48) Months
CORI: 130 Events

923 Patients: ≥ 70% ICA Stenosis

Predicted 5-Year Stroke Risk

< 5%	.....	495
5-9.9%	.....	202
★ 10-19.9%	(2-4%/yr).....	142
★ ≥ 20%	(> 4%/yr)	84

$\frac{226}{923} = 25\%$

J Vasc Surg. 2010

CONCLUSION

REVIEW ARTICLES

Kalea Hughes, MD, PhD, SECTION EDITOR

Recent advances and controversial issues in the optimal management of asymptomatic carotid stenosis

High Risk Factors

- ≥ 80% Asx Stenosis
- Plaque Echolucency
- [illegible]

At Least 25% of Asx Patients

- Increased Size Juxtaluminal Hypoechoic Area
- TCD-Detected Microemboli
- Decreased Cerebrovascular Reserve

J Vasc Surg. 2024