

CAD 1: Clinical and imaging variables in asymptomatic carotid patients with an increased late stroke risk – a critical review of the 2017 ESVS/ESC guidelines

Grade of carotid stenosis and stenosis progression

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Disclosure

Speaker name:

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have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company

Other(s)



I do not have any potential conflict of interest



ESVS Guidelines. Invasive Treatment for Carotid Stenosis: Indications, Techniques

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A. Nicolaides ^e, J. Fernandes e Fernandes ^f, G. Biasi ^g,
L. Norgren ^h, on behalf of the ESVS Guidelines Collaborators ¹

- CEA can be recommended for asymptomatic men below 75 years with 70–99% stenosis if the risk associated with surgery is less than 3% [A].
- Meanwhile, it is advisable to offer CAS in asymptomatic patients only in high-volume centres with documented low peri-procedural stroke and death rates or within well-conducted clinical trials [C].

Medical (Nonsurgical) Intervention Alone Is Now Best for Prevention of Stroke Associated With Asymptomatic Severe Carotid Stenosis: Results of a Systematic Review and Analysis
Anne L. Abbott

Stroke. 2009;40:e573-e583; originally published online August 20, 2009;
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Asymptomatic carotid artery stenosis—it's time to stop operating

Anne Abbott

Progression of asymptomatic carotid stenosis despite optimal medical therapy

Mark F. Conrad, MD, MMSc, Valy Baloum, MD, Shankha Mukhopadhyay, MS, Ashu Garg, MD, Virendra I. Patel, MD, and Richard P. Cambria, MD, *Boston, Mas*

J Vasc Surg 2013;58:128-35.

- **900 asymptomatic carotid arteries in 794 patients with moderate (50%-70%) ACS.**
- **Mean US follow-up: 3.6 years (range: 0.3 – 7 years).**
- **Plaque progression occurred in 262 carotid arteries and 36 of these (13.7%) developed symptoms.**

Predictors and clinical significance of progression or regression of asymptomatic carotid stenosis

Stavros K. Kakkos, MD, PhD, RVT,^a Andrew N. Nicolaides, MS, PhD, FRCS,^a Ioanna Charalambous,^b Dafydd Thomas, MD, FRCP,^c Argyrios Giannopoulos, MD,^a A. Ross Naylor, MD, FRCS,^d George Geroulakos, MD, PhD,^{a,c} and Anne L. Abbott, MBBS, FRACP, PhD,^{f,g,h} for the Asymptomatic Carotid Stenosis and Risk of Stroke (ACSRS) Study Group, *London and Leicester, United Kingdom; Nicosia, Cyprus and Melbourne, Australia*

(J Vasc Surg 2014;59:956-67.)

- 1121 patients with asymptomatic carotid stenosis of 50%-99% on BMT (mean follow-up: 4 years).
- Plaque **progression** occurred in 222 patients (**19.8%**), **no change** in 856 (**76.4%**) and **regression** in 43 patients (**3.8%**).
- Of the total of 130 ipsilateral cerebral or retinal ischemic events, 88 (**67.7%**) occurred in patients whose stenosis was **unchanged**, 33 (**25.4%**) in those with **progression without occlusion**, 9 (**6.9%**) in those that developed **occlusion** and 0 in those with regression.

From the New England Society for Vascular Surgery

Risk factor profile and anatomic features of previously asymptomatic patients presenting with carotid-related stroke

Derek Klarin, MD,^a Richard P. Cambria, MD,^b Emel A. Ergul, MS,^a Scott B. Silverman, MD,^c Virendra I. Patel, MD, MPH,^d Glenn M. LaMuraglia, MD,^a Mark F. Conrad, MD, MMSc,^a and W. Darrin Clouse, MD,^a *Boston and Brighton, Mass; and New York, NY*

- **219 carotid stroke patients with previously $\geq 50\%$ asymptomatic carotid stenosis**
- **On admission 50% were already on antiplatelets, 55% were already on statins, whereas 35% received both an antiplatelet and a statin**
- **Of the 219 patients, 96 (43%) presented with an occluded ipsilateral carotid artery**

The imperative need to identify stroke risk stratification models for patients with asymptomatic carotid artery stenosis

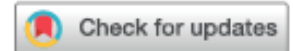
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There is an imperative need to identify appropriate stroke risk stratification models and vascular risk factors able identify specific subgroups of asymptomatic patients in order to guide the selection of ACS patients more likely to benefit from prophylactic carotid endarterectomy.

Best medical treatment alone may not be adequate for all patients with asymptomatic carotid artery stenosis



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IS MT ADEQUATE FOR STROKE PREVENTION IN ALL ACS PATIENTS?

NOT ALL PATIENTS WITH ACS CARRY THE SAME RISK OF STROKE

Stroke

JOURNAL OF THE AMERICAN HEART ASSOCIATION



Identifying Which Patients With Asymptomatic Carotid Stenosis Could Benefit From Intervention

Kosmas I. Paraskevas, J. David Spence, Frank J. Veith and Andrew N. Nicolaides

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Management of Atherosclerotic Carotid and Vertebral Artery Disease: 2017 Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS)

Writing Group ^a, A.R. Naylor, J.-B. Ricco, G.J. de Borst, S. Debus, J. de Haro, A. Halliday, G. Hamilton, J. Kakisis, S. Kakkos, S. Lepidi, H.S. Markus, D.J. McCabe, J. Roy, H. Sillesen, J.C. van den Berg, F. Vermassen, ESVS Guidelines Committee ^b, P. Kolh, N. Chakfe, R.J. Hinchliffe, I. Koncar, J.S. Lindholt, M. Vega de Ceniga, F. Verzini, ESVS Guideline Reviewers ^c, J. Archie, S. Bellmunt, A. Chaudhuri, M. Koelemay, A.-K. Lindahl, F. Padberg, M. Venermo

2.1.1. Burden of stroke. In a European population of 715 million, about 1.4 million strokes occur each year.

Stroke causes 1.1 million deaths annually in Europe, making it the second commonest cause of death.

In Europe, annual stroke costs exceed 38 billion Euros.

Overall, about **10-15%** of all strokes follow thromboembolism from a **previously asymptomatic ICA stenosis >50%**.

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Recommendation 17	Class	Level
In “average surgical risk” patients with an asymptomatic 60–99% stenosis, carotid endarterectomy should be considered in the presence of one or more imaging characteristics that may be associated with an increased risk of late ipsilateral stroke, ^a provided documented perioperative stroke/death rates are <3% and the patient’s life expectancy exceeds 5 years	IIa	B
Recommendation 18		
In “average surgical risk” patients with an asymptomatic 60–99% stenosis in the presence of one or more imaging characteristics that may be associated with an increased risk of late ipsilateral stroke, ^a carotid stenting may be an alternative to carotid endarterectomy, provided documented perioperative stroke/death rates are <3% and the patient’s life expectancy exceeds 5 years	IIb	B

Table 5. Clinical/imaging features associated with an increased risk of late stroke in patients with asymptomatic 50–99% stenoses treated medically.

Imaging/clinical parameter and stenosis severity	Annual rate of ipsilateral stroke	OR/HR (95% CI) <i>p</i> =
Type of study		
Silent infarction on CT ⁸⁴ 60–99% stenoses Multicentre, observational	Yes = 3.6% No = 1.0%	3.0 (1.46–6.29) <i>p</i> = .002
Stenosis progression ⁸⁵ 50–99% stenoses Multicentre, observational	Regression = 0.0% Unchanged = 1.1% Progression = 2.0%	1.92 (1.14–3.25) <i>p</i> = .05
Stenosis progression ⁸⁶ 70–99% stenoses Multicentre, RCT	Regression No change Progression 1 stenosis grade Progression 2 stenosis grades	0.7 (0.4–1.3) Comparator 1.6 (1.1–2.4) 4.7 (2.3–9.6)
Plaque area on computerised plaque analysis ⁸⁷ 70–99% Multicentre, observational	<40 mm ² = 1.0% 40–80 mm ² = 1.4% >80 mm ² = 4.6%	HR 1.0 2.08 (95% CI 1.05–4.12) 5.81 (95% CI 2.67–12.67)
JBA on computerised plaque analysis ⁸⁸ 50–99% stenoses Multicentre, observational	<4 mm ² = 0.4% 4–8 mm ² = 1.4% 8–10 mm ² = 3.2% >10 mm ² = 5.0%	Trend <i>p</i> < .001

Best Medical Treatment for Patients with Carotid Stenosis: Evidence-Based Medicine or Wishful Thinking?

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“The premature cessation of SPACE-2 suggests that it may be hard to convince patients not to take any action (CEA/CAS) to prevent a possible stroke from their carotid stenosis and just continue with BMT”.

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Thank you for your attention