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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I 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

C.D. Liapis a,*, Sir P.R.F. Bell b, D. Mikhailidis c, J. Sivenius d, A. Nicolaides e, J. Fernandes e Fernandes f, G. Biasi g, L. Norgren h, on behalf of the ESVS Guidelines Collaborators i

- 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].
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, Mass


- 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.
- 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.
- 219 carotid stroke patients with previously ≥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
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

Kosmas I. Paraskevas, MD, PhD,\textsuperscript{a} Frank J. Veith, MD, FACS,\textsuperscript{b,c} and Jean-Baptiste Ricco, MD, PhD, FEBVS,\textsuperscript{d}

\textit{London, United Kingdom; New York, NY; Cleveland, Ohio; and Poitiers, France}

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\textbf{IS MT ADEQUATE FOR STROKE PREVENTION IN ALL ACS PATIENTS?}

\textbf{NOT ALL PATIENTS WITH ACS CARRY THE SAME RISK OF STROKE}
Identifying Which Patients With Asymptomatic Carotid Stenosis Could Benefit From Intervention

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

*Stroke*. 2014;45:3720-3724; originally published online October 30, 2014;
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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%.
Management of Atherosclerotic Carotid and Vertebral Artery Disease: 2017 Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS)


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<thead>
<tr>
<th>Recommendation 17</th>
<th>Class</th>
<th>Level</th>
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<tbody>
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<td>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, provided documented perioperative stroke/death rates are &lt;3% and the patient’s life expectancy exceeds 5 years</td>
<td>IIA</td>
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<td>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, carotid stenting may be an alternative to carotid endarterectomy, provided documented perioperative stroke/death rates are &lt;3% and the patient’s life expectancy exceeds 5 years</td>
<td>IIb</td>
<td>B</td>
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<tr>
<td>Imaging/clinical parameter and stenosis severity Type of study</td>
<td>Annual rate of ipsilateral stroke</td>
<td>OR/HR (95% CI) ρ =</td>
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<td>-------------------------------------------------------------</td>
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| Silent infarction on CT<sup>84</sup> 60—99% stenoses Multicentre, observational | Yes = 3.6%  
No = 1.0% | 3.0 (1.46—6.29)  
ρ = .002 |
| Stenosis progression<sup>85</sup> 50—99% stenoses Multicentre, observational | Regression = 0.0%  
Unchanged = 1.1%  
Progression = 2.0% | 1.92 (1.14—3.25)  
ρ = .05 |
| Stenosis progression<sup>86</sup> 70—99% stenoses Multicentre, RCT | Regression  
No change  
Progression 1  
Progression 2 | 0.7 (0.4—1.3)  
Comperator  
1.6 (1.1—2.4)  
4.7 (2.3—9.6) |
| Plaque area on computerised plaque analysis<sup>87</sup> 70—99% Multicentre, observational | <40 mm<sup>2</sup> = 1.0%  
40—80 mm<sup>2</sup> = 1.4%  
>80 mm<sup>2</sup> = 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<sup>88</sup> 50—99% stenoses Multicentre, observational | <4 mm<sup>2</sup> = 0.4%  
4—8 mm<sup>2</sup> = 1.4%  
8—10 mm<sup>2</sup> = 3.2%  
>10 mm<sup>2</sup> = 5.0% | Trend ρ < .001 |
“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