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Rizika karotické endarterektomie s ohledem na její načasování po akutní cerebrovaskulární příhodě

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Doporučení

AHA/ASA Guideline

Guidelines for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack

A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association

The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists. Endorsed by the American Association of Neurological Surgeons and Congress of Neurological Surgeons

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When revascularization is indicated for patients with TIA or minor, nondisabling stroke, it is reasonable to perform the procedure within 2 weeks of the index event rather than delay surgery if there are no contraindications to early revascularization (Class IIa; Level of Evidence B).

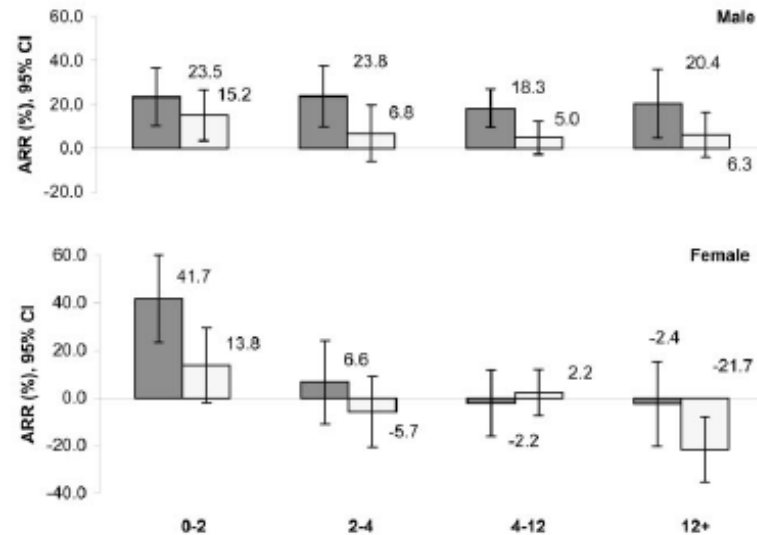
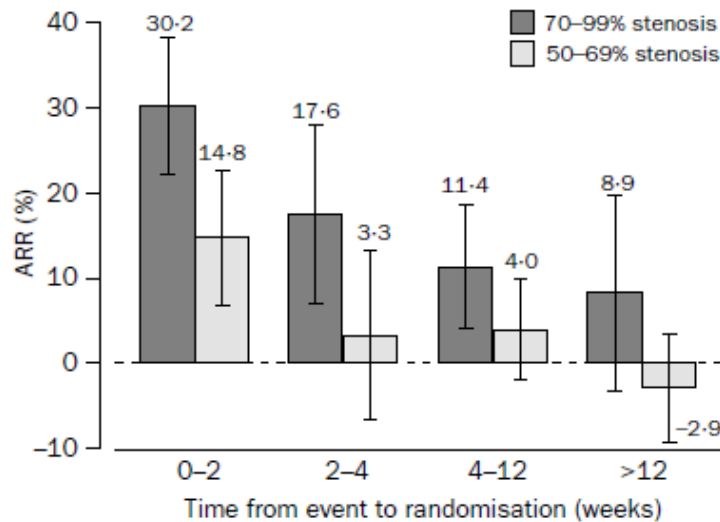
Management of Atherosclerotic Carotid and Vertebral Artery Disease: 2017 Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS)

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

When revascularisation is considered appropriate in symptomatic patients with 50–99% stenoses, it is recommended that this be performed as soon as possible, preferably within 14 days of symptom onset	I	A
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Timing karotických endarterektomií

Evidence Based Medicine



Rothwell et al. Lancet. 2004; 363:915-924.

Rothwell et al. Stroke. 2004;35:2855-2861.

Timing karotických endarterektomií

Evidence Based Medicine

	48 hours	72 hours	7 days	14 days	5 years
ESCT + NASCET + VA ⁵ medical therapy					21%
Fairhead 2005 ²²				20%	
Purroy 2007 ²³			10%		
Ois 2009 ⁴		17%	22%	25%	
Bonifati 2011 ²⁴	8%				
Johansson 2013 ²⁵	5%		8%	11%	
Merwick 2013 ²⁶			8%		
Marnane 2014 ³	5% ^a	9% ^a	9% ^a	16% ^a	

- Naylor et al. Eur J Vasc Endovasc Surg. 2015;49:513-523
- Tsantilas et al. J Cardiovasc Surg. 2015;56:845-852
 - Do 2-3 dnů 6,4% (1,5-23,8%)
 - ≤ 7 dnů 19,5% (12,7 - 28,7%)
 - ≤ 14 dnů 26,1% (20,6 - 32,5%)

Timing karotických endarterektomií

Data z národních registrů

	≤ 2 dny	≤ 7 dnů	≤ 14 dnů
Strömberg, 2012 (Švédsko)	5,7%	36,7%	62,8%
Loftus, 2016 (UK)	3,4%	25,4%	52,5%
Tsantilas, 2016 (Německo)	9,2%	43,2%	72,0%
Kjørstad, 2017 (Norsko)	2,7%	26,6%	61,7%

Timing karotických endarterektomií

Faktory ovlivňující načasování CEA

- **Medicínské** (většinou neovlivnitelné)
- **Organizační** (většinou ovlivnitelné)

Rizika CEA ve vztahu k načasování

30-denní riziko iktu/smrti

	0-2 dny	3-7 dnů	8-14 dnů	15-180 dnů
Strömberg, 2012 (Švédsko)	11,5%	3,6%	4,0%	5,4%
Loftus, 2016 (UK)	3,7%	2,5%	2,1%	2,6%
Tsantilas, 2016 (Německo)	3,0%	2,5%	2,6%	2,3%
Kjørstad, 2017 (Norsko)	0%	2,5%	2,6%	2,3%
Tsantilas, 2017	3%	3%	2%	2%
Sharpe, 2013	2,4%	1,8%	0,8%	0,8%
Rantner, 2015	4,4%	1,8%	4,4%	2,5%
Nordanstig, 2017	8%	3%		
Tsivgoulis, 2014	10,0%	4,1%		5,6%

Výsledky 1.

Základní demografická data, rizikové faktory a komorbidity

- **Období:** leden 2013 - září 2017
- **Medián doby mezi cerebrovaskulární příhodou a CEA:** 7dní (0-179dní)
- **0-2 dny** 27,2% pacientů; **0-7 dnů** 51,7% pacientů; **0-14 dnů** 78,3% pacientů

	Total n=180	Time interval between index event and CEA				p value
		0-2 days n=49 (27.2%)	3-7 days n=44 (24.4%)	8-14 days n=48 (26.7%)	15-180 days n=39 (21.7%)	
Age (years, median, range)	69.5 (39-92)	71 (49-87)	71 (53-85)	68 (46-92)	69 (39-81)	0.320
Gender						
male	133 (73.9%)	35 (71.4%)	31 (70.5%)	35 (72.9%)	32 (82.1%)	0.616
female	47 (26.1%)	14 (28.6%)	13 (29.5%)	13 (27.1%)	7 (17.9%)	
BMI (median, range)	27.7 (20.3-43.2)	27.7 (21.2-42.2)	27.5 (20.7-43.2)	28.0 (20.3-36.8)	27.8 (21.4-36.9)	0.845
ASA category						
ASA II	25 (13.9%)	9 (18.4%)	7 (15.9%)	3 (6.2%)	6 (15.4%)	0.577
ASA III	140 (77.8%)	35 (71.4%)	35 (71.4%)	41 (85.4%)	29 (74.4%)	
ASA IV	15 (8.3%)	5 (10.2%)	2 (4.5%)	4 (8.3%)	4 (10.3%)	
Cardiovascular risk factors						
arterial hypertension	158 (87.8%)	44 (89.8%)	36 (81.8%)	46 (95.8%)	32 (82.1%)	0.125
diabetes mellitus	71 (39.4%)	14 (28.6%)	16 (36.4%)	26 (54.2%)	15 (38.5%)	0.073
hypercholesterolemia	109 (60.6%)	28 (57.1%)	28 (63.6%)	32 (66.7%)	21 (53.8%)	0.594
smoking	95 (52.8%)	26 (53.1%)	25 (56.8%)	26 (54.2%)	18 (46.2%)	0.798
Comorbidities						
coronary artery disease	50 (27.8%)	15 (30.6%)	8 (18.2%)	14 (29.2%)	13 (33.3%)	0.413
atrial fibrillation	20 (11.1%)	4 (8.2%)	8 (18.2%)	7 (14.6%)	1 (2.6%)	0.106
COPD	28 (15.6%)	7 (14.3%)	5 (11.4%)	9 (18.8%)	7 (17.9%)	0.755
renal insufficiency	13 (7.2%)	2 (4.1%)	4 (9.1%)	4 (8.3%)	3 (7.7%)	0.789
history of previous cerebrovascular event	39 (21.7%)	11 (22.4%)	8 (18.2%)	13 (27.1%)	7 (17.9%)	0.687

CEA, carotid endarterectomy; BMI, body mass index; ASA, American Society of Anesthesiologists; COPD, chronic obstructive pulmonary disease

Výsledky 2.

Základní klinická data

	Total n=180	Time interval between index event and CEA				p value
		0-2 days n=49 (27.2%)	3-7 days n=44 (24.4%)	8-14 days n=48 (26.7%)	15-180 days n=39 (21.7%)	
Neurological event						
retinal	18 (10.0%)	5 (10.2%)	4 (9.1%)	3 (6.2%)	6 (15.4%)	0.002
TIA	41 (22.8%)	17 (34.7%)	16 (36.4%)	3 (6.2%)	5 (12.8%)	
stroke	121 (67.2%)	27 (55.1%)	24 (54.5%)	42 (87.5%)	28 (71.8%)	
Ipsilateral degree of stenosis						<0.001
50%-69%	11 (6.1%)	2 (4.1%)	2 (4.5%)	3 (6.2%)	4 (10.3%)	
70%-99%	154 (85.6%)	32 (65.3%)	42 (95.5%)	45 (93.8%)	35 (89.7%)	
occlusion	15 (8.3%)	15 (30.6%)	0 (0%)	0 (0%)	0 (0%)	
Contralateral degree of stenosis						0.881
0%-49%	142 (78.9%)	37 (75.5%)	35 (79.5%)	39 (81.2%)	31 (79.5%)	
50%-69%	20 (11.1%)	5 (10.2%)	5 (11.4%)	5 (10.4%)	5 (12.8%)	
70%-99%	15 (8.3%)	5 (10.2%)	4 (9.1%)	4 (8.3%)	2 (5.1%)	
occlusion	3 (1.7%)	2 (4.1%)	0 (0%)	0 (0%)	1 (2.6%)	
Antiplatelet medication						0.001
mono (ASA)	101 (56.1%)	27 (55.1%)	26 (59.1%)	26 (54.2%)	22 (56.4)	
mono (clopidogrel)	38 (21.1%)	8 (16.3%)	7 (15.9%)	13 (27.1%)	10 (25.6)	
dual (ASA + clopidogrel)	18 (10.0%)	2 (4.1%)	6 (13.6%)	4 (8.3%)	6 (15.4%)	
anticoagulation [†]	14 (7.8%)	3 (6.1%)	5 (11.4%)	5 (10.4%)	1 (2.6%)	
none	9 (5.0%)	9 (18.4%)	0 (0%)	0 (0%)	0 (0%)	
IVT before CEA	29 (16.1%)	14 (28.6%)	2 (4.5%)	6 (12.5%)	7 (17.9%)	0.014

CEA, carotid endarterectomy; TIA, transient ischemic attack; ASA, acetylsalicylic acid; [†] low molecular weight heparin + ASA or clopidogrel

Výsledky 3.

Perioperační data

	Total n=180	Time interval between index event and CEA				p value
		0-2 days n=49 (27.2%)	3-7 days n=44 (24.4%)	8-14 days n=48 (26.7%)	15-180 days n=39 (21.7%)	
Type of anesthesia						
regional anesthesia	156 (86.7%)	33 (67.3%)	41 (93.2%)	47 (97.9%)	35 (87.7%)	<0.001
general anesthesia	24 (13.3%)	16 (32.7%)	3 (6.8%)	1 (2.1%)	4 (10.3%)	
Surgical technique						
eversion CEA	125 (69.4%)	36 (73.5%)	30 (68.2%)	35 (72.9%)	24 (61.5%)	0.825
conventional CEA with patch	30 (16.7%)	8 (16.3%)	7 (15.9%)	8 (16.7%)	7 (17.9%)	
conventional CEA without patch	25 (13.9%)	5 (10.2%)	7 (15.9%)	5 (10.4%)	8 (20.5%)	
Shunt use	21 (11.7%)	7 (14.3%)	4 (9.1%)	4 (8.3%)	6 (15.,4%)	0.648
Clamping time (minutes, median, range)	28 (11-66)	27.5 (11-58)	30 (14-62)	25.5 (14-66)	27 (13-50)	0.775
Duration of operation (minutes, median, range)	80 (50-185)	75 (55-175)	90 (60-185)	85 (50-165)	85 (55-165)	0.517

CEA, carotid endarterectomy

Výsledky 4.

30denní periprocedurální komplikace

	Total n=180	Time interval between index event and CEA				p value
		0-2 days n=49 (27.2%)	3-7 days n=44 (24.4%)	8-14 days n=48 (26.7%)	15-180 days n=39 (21.7%)	
Any stroke/death rate	7 (3.9%)	2 (4.1%)	2 (4.5%)	2 (4.2%)	1 (2.6%)	0.969
Death rate	1 (0.6%)	1 (2.0%)	0 (0%)	0 (0%)	0 (0%)	1.000
Symptomatic intracerebral hemorrhage	2 (1.1%)	0 (0%)	0 (0%)	1 (2.1%)	1 (2.6%)	0.354
Myocardial infarction	2 (1.1%)	0 (0%)	0 (0%)	1 (2.1%)	1 (2.6%)	0.470
Major neck bleeding	6 (3.3%)	0 (0%)	5 (11.4%)	0 (0%)	1 (2.6%)	0.004
Cranial nerve injury	8 (4.4%)	3 (6.1%)	1 (2.3%)	4 (8.3%)	0 (0%)	0.255

CEA, carotid endarterectomy

Výsledky 5.

Detail pacientů s periprocedurálním iktem

Patient	Sex	Age	ASA	Qualifying event	Time interval	Degree of stenosis	Side of stroke	Pathology	Time of event after CEA
1	F	69	3	TIA [†]	116	90	ipsilateral	IH	6
2	F	68	3	Stroke	1	90	ipsilateral	CI, death	0
3	M	73	3	TIA [†]	7	75	ipsilateral	CI	0
4	M	75	3	TIA	2	70	ipsilateral	CI	1
5	M	79	3	TIA [†]	5	70	ipsilateral	CI	0
6	F	79	3	Stroke	8	90	ipsilateral	IH	8
7	M	76	3	AF	8	85	ipsilateral	CI	0

F, female; M, male; ASA, American Society of Anesthesiologists; TIA, transient ischemic attack;

IH, intracerebral hemorrhage; CI, cerebral infarction; † repetitive or crescendo TIA

Závěr

- Stále vysoké % symptomatických pacientů podstupuje CEA mimo doporučený časový interval
- Časná CEA je bezpečná, kontroverzní zůstává CEA do 48 hodin
- CEA by měla být preferována před CAS
- Otázka duální antiagregační terapie s ohledem na snížení rizika rekurence cerebrovaskulární příhody

Děkuji za pozornost

