Léčba hypertenze u CMP

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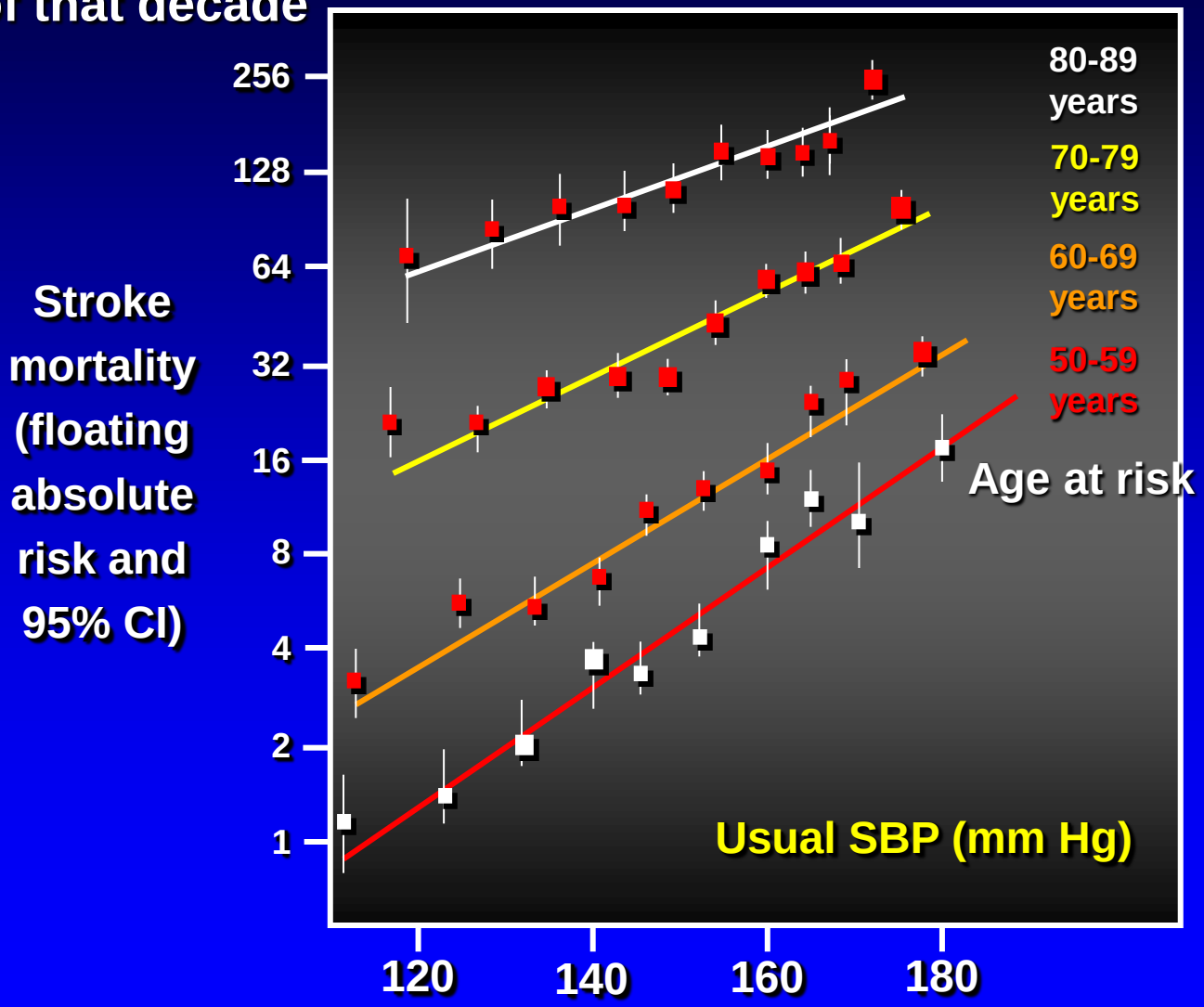
Léčba hypertenze u CMP

- Všeobecné poznámky
- Primární prevence
- Akutní fáze CMP
- Sekundární prevence
- Závěry

Stroke Mortality Related to Systolic Blood Pressure

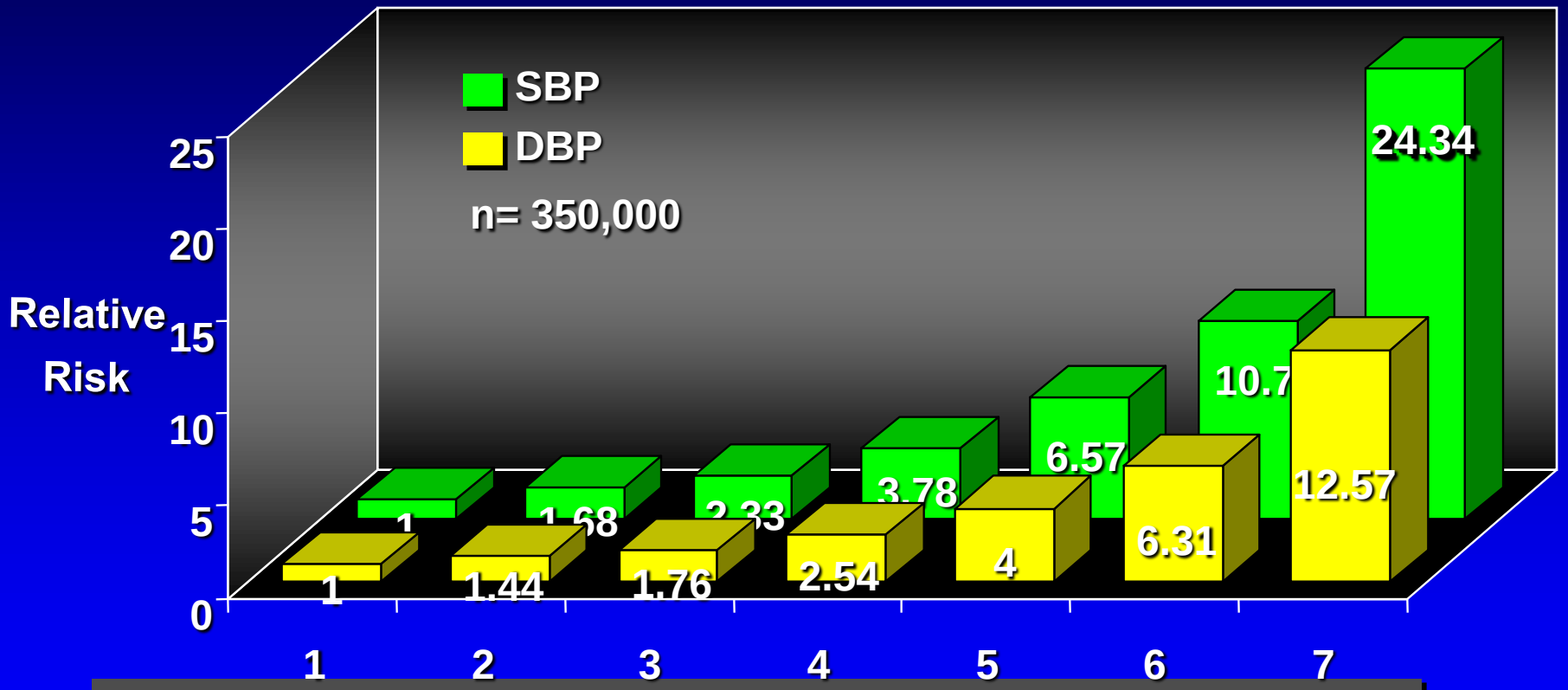
Stroke mortality rate in each decade vs usual SBP at the start of that decade



Lancet 2002; 360: 1903-1913

Stroke Mortality and Blood Pressure

Relative Risk associated with Systolic and Diastolic BP



SBP	<120	120-129	130-139	140-159	160-179	180-209	≥210
DBP	<80	80-84	85-89	90-99	100-109	110-119	≥120

MRFIT. Circulation 1990; 82: 1616-1628

Prevalence hypertenze v klinických studiích FS

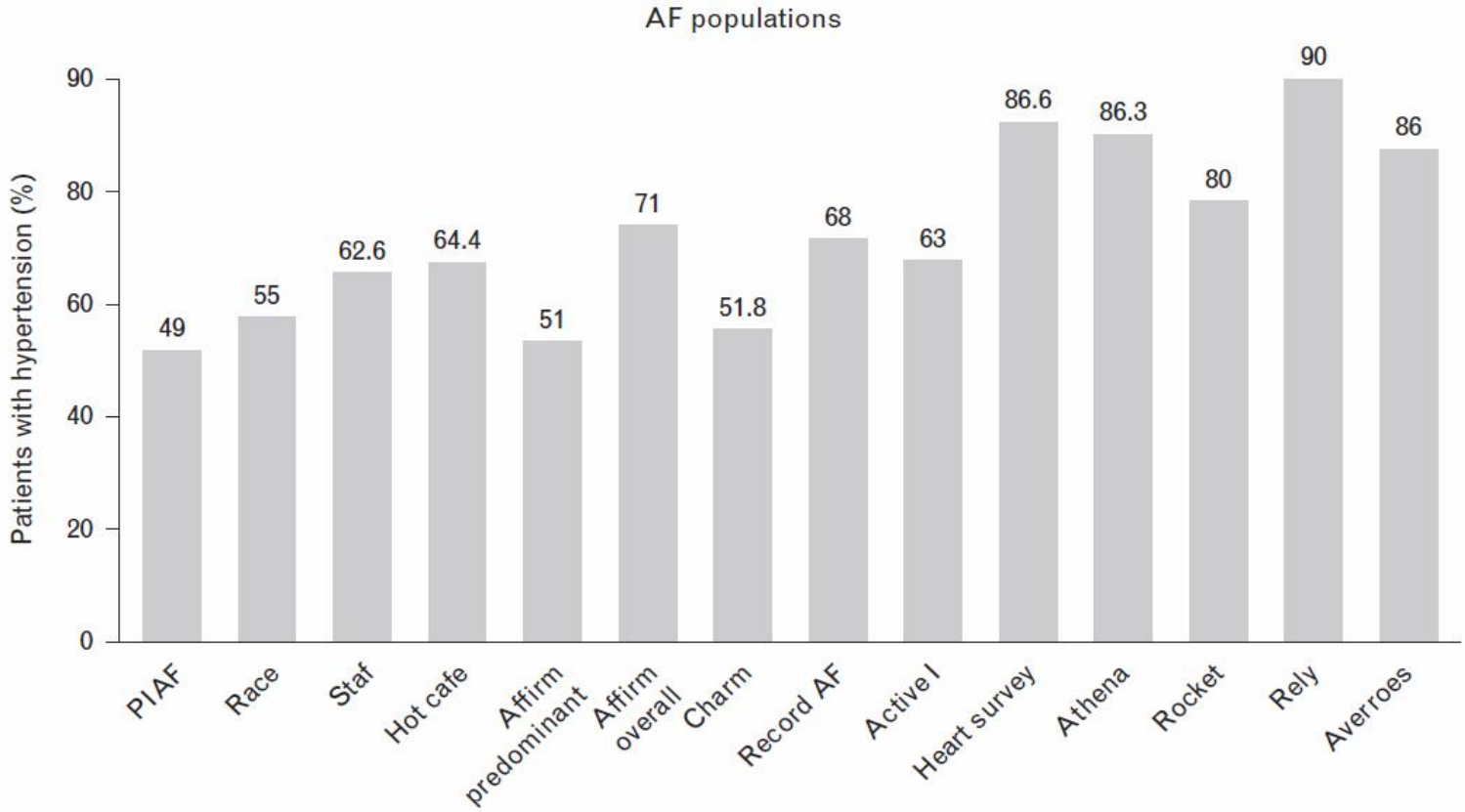
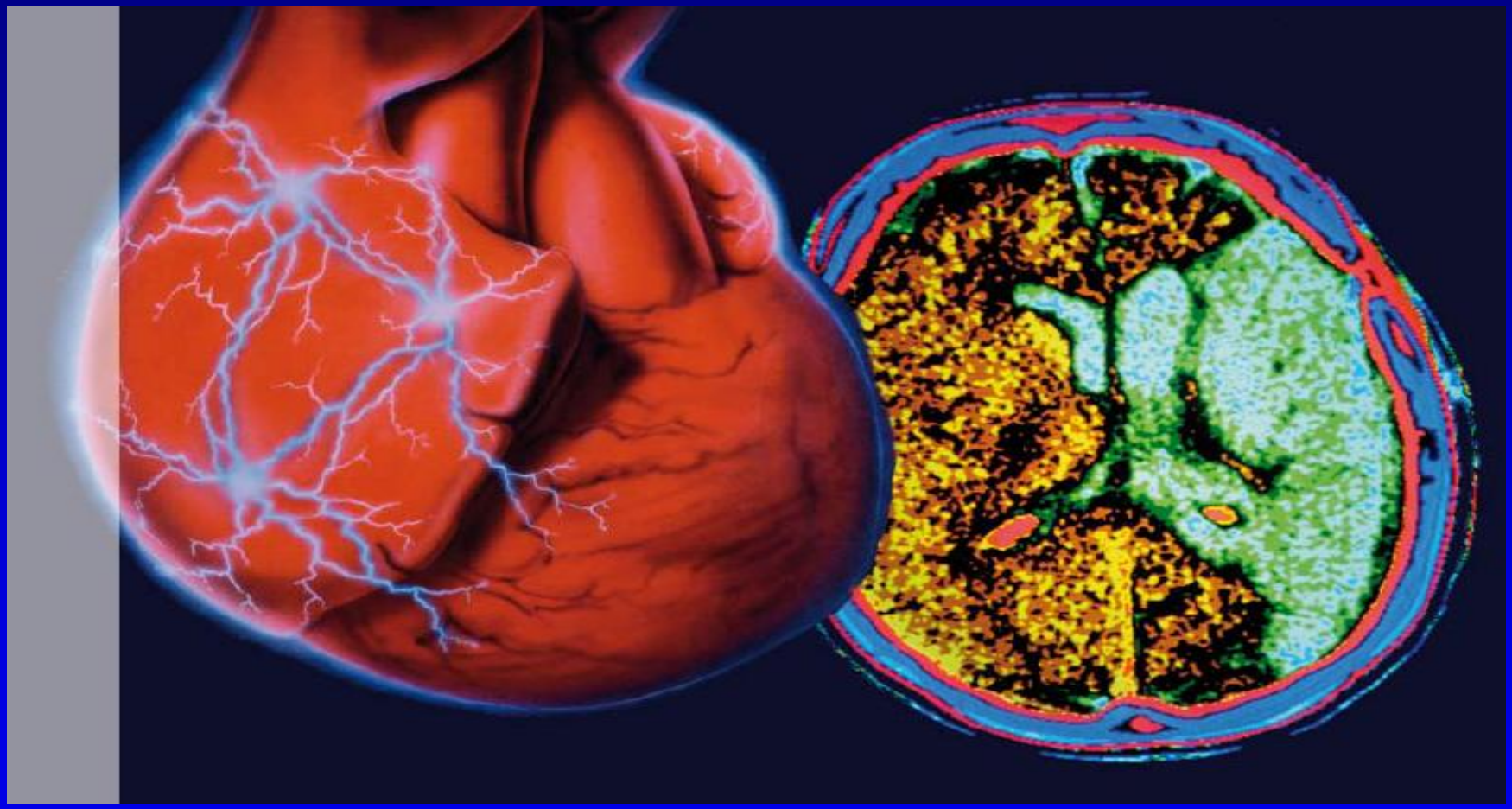


FIGURE 1 Prevalence of hypertension in atrial fibrillation trials.

J Hypertension, 2012,239-252

Hypertenze + fibrilace síní: častá klinická situace zvyšující riziko CMP



Primární aldosteronismus jako nezávislý RF CMP?

	PA (n = 124)	EH (n = 465)	(95% interval spolehlivosti)	p- hodnota
Atrial fibrillation	7,3%	0,6%	12,1 (3,2 – 45,2)	<0,0001
Myocardial infarction	4,0%	0,6%	6,5 (1,5 – 27,4)	<0,005
Stroke	12,9%	3,4%	4,2 (2,0 – 8,6)	<0,001
Left ventricle hypertrophy (ECHO)	32%	14%	2,9 (1,8 – 4,6)	<0,001
Left ventricle hypertrophy (Ecg)	32%	24%	1,6 (1,1 – 2,5)	<0,05

Milliez et al. J Am Coll Cardiol 2005;45:1246

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Benefit snížení TK v placebem kontrolovaných studiích:metaanalýza

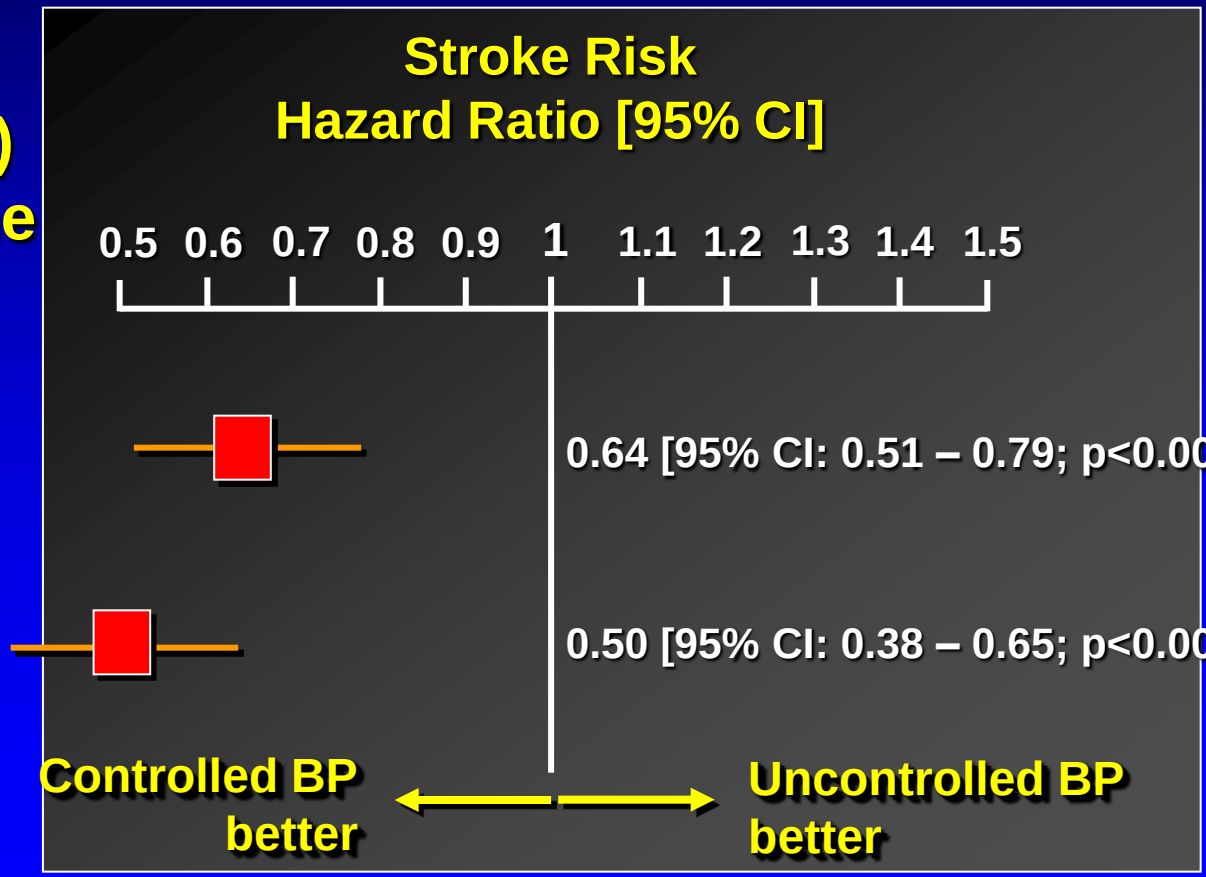
Outcome	No. of Studies	RR (95% CI)	*P* Value	I^2, %	*P* for Cochran *Q*
Recurrent stroke	11	0.73 (0.62–0.87)	<0.001	75	<0.001
Ischemic stroke	2	0.87 (0.70–1.07)	0.19	81	0.02
Hemorrhagic stroke	2	0.65 (0.41–1.05)	0.08	76	0.04
Disabling or fatal stroke	7	0.71 (0.59–0.85)	<0.001	0	0.57
Myocardial Infarction	5	0.77 (0.57–1.03)	0.08	48	0.10
Death from any cause	8	0.92 (0.82–1.03)	0.16	41	0.10
Cardiovascular death	8	0.85 (0.75–0.96)	0.01	17	0.29

Hypertension, January 2017

Kontrola TK a riziko CMP u HT a ICHS: INVEST Study

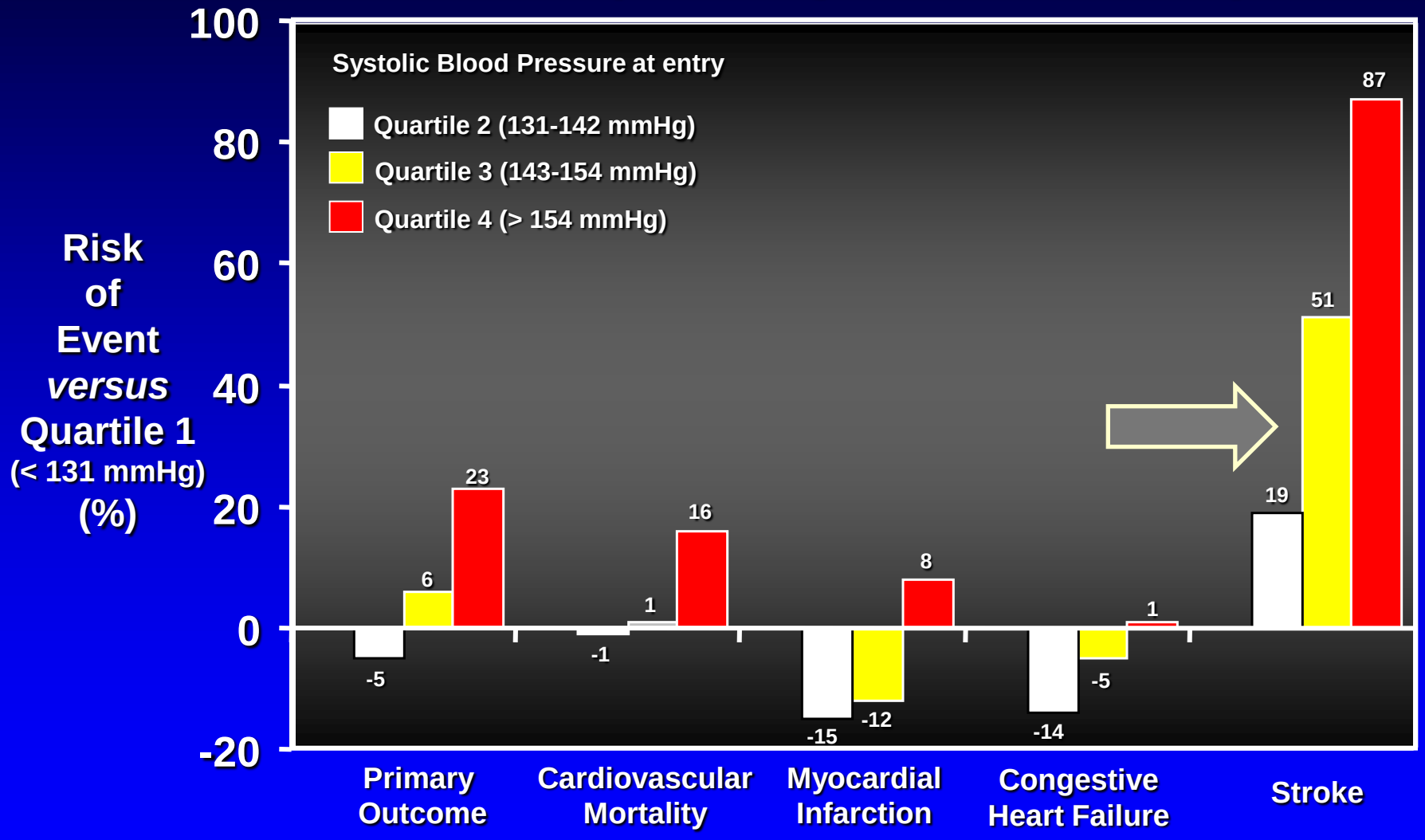
Risk for Stroke during treatment

Mean BP during follow-up (2.7 years) adjusted for baseline covariates

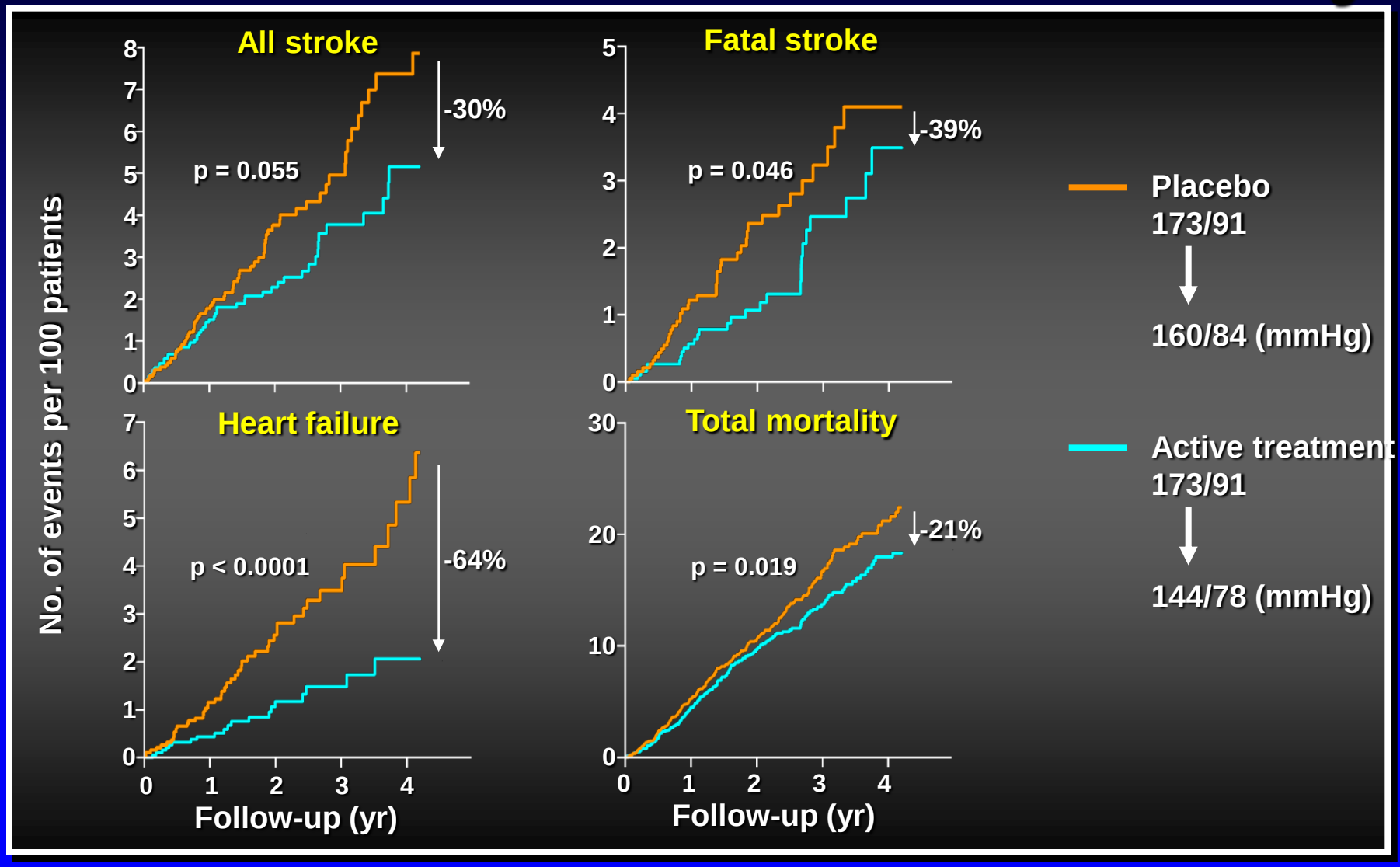


Coca A, et al. Stroke 2008; 39: 343-348

ONTARGET Study: Risk of Events vs. Quartile 1 (Unadjusted Data)



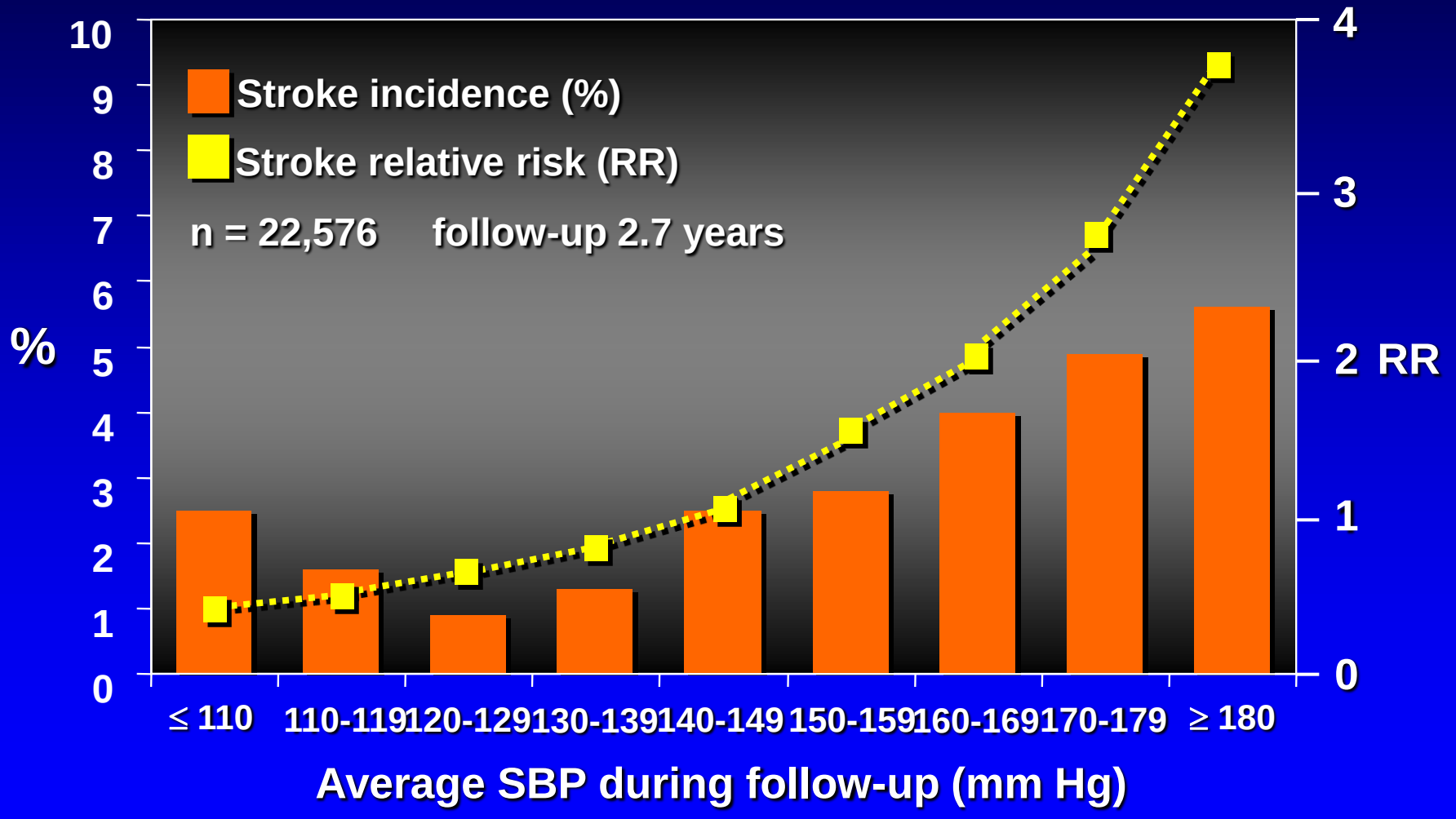
Snížení rizika CMP antihypertenzní léčbou u starších osob: HYVET Study



Beckett et al. N Eng J Med 2008; 358: 1887-1898

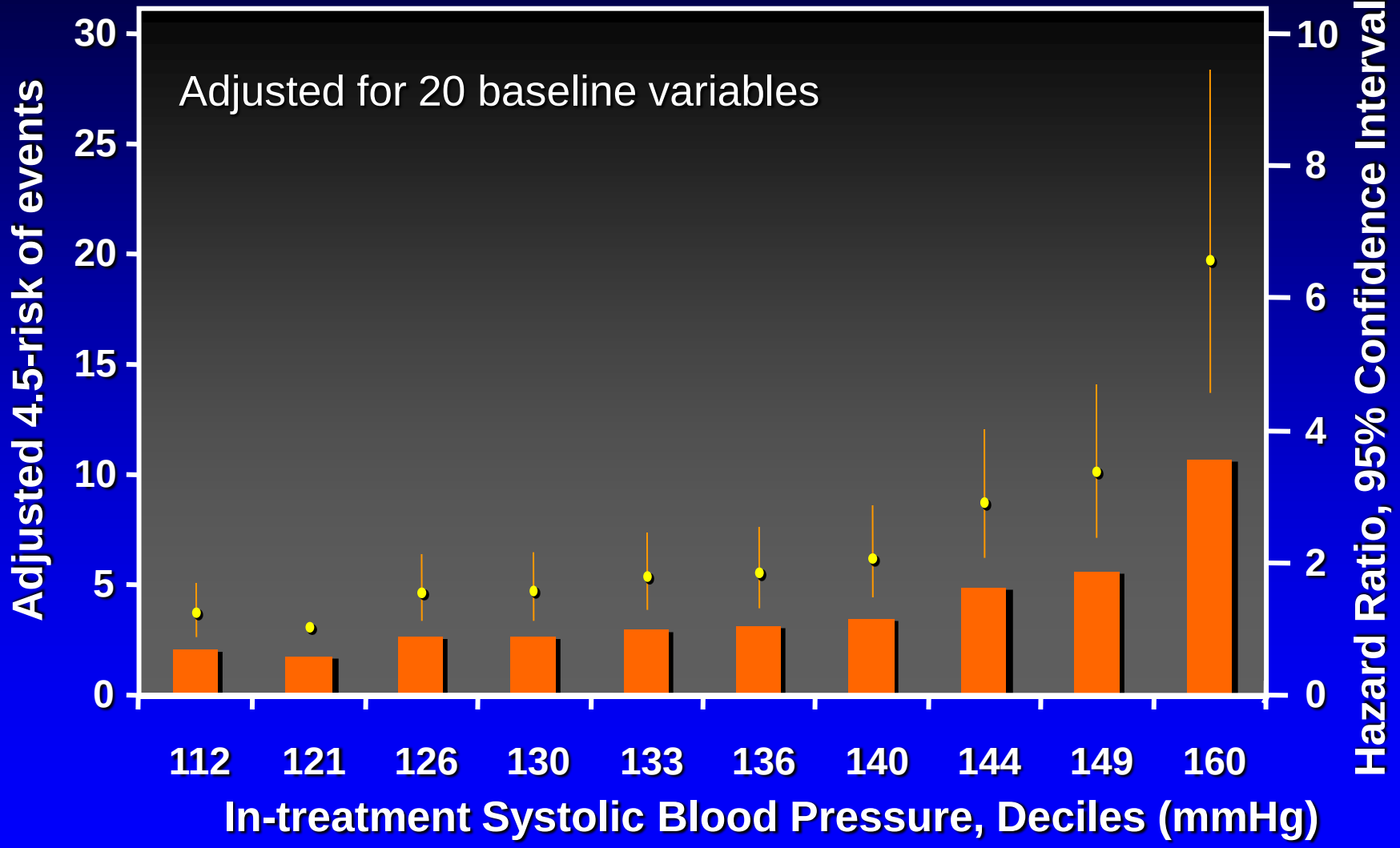
Cílové hodnoty TK v primární prevenci CMP?

Incidence CMP u HT s ICHS: INVEST Study



Coca A, et al. Stroke 2008; 39: 343-348

ONTARGET Study: Incidence CMP ve vztahu k STK



Studie SPRINT: automatické měření TK v ordinaci

Table 2. Primary and Secondary Outcomes and Renal Outcomes.*

Outcome	Intensive Treatment		Standard Treatment		Hazard Ratio (95% CI)	P Value
	no. of patients (%)	*% per year*	*no. of patients (%)*	*% per year*		
All participants	**(N=4678)**		**(N=4683)**			
Primary outcome†	243 (5.2)	1.65	319 (6.8)	2.19	0.75 (0.64–0.89)	<0.001
Secondary outcomes						
Myocardial infarction	97 (2.1)	0.65	116 (2.5)	0.78	0.83 (0.64–1.09)	0.19
Acute coronary syndrome	40 (0.9)	0.27	40 (0.9)	0.27	1.00 (0.64–1.55)	0.99
Stroke	62 (1.3)	0.41	70 (1.5)	0.47	0.89 (0.63–1.25)	0.50
Heart failure	62 (1.3)	0.41	100 (2.1)	0.67	0.62 (0.45–0.84)	0.002
Death from cardiovascular causes	37 (0.8)	0.25	65 (1.4)	0.43	0.57 (0.38–0.85)	0.005
Death from any cause	155 (3.3)	1.03	210 (4.5)	1.40	0.73 (0.60–0.90)	0.003
Primary outcome or death	332 (7.1)	2.25	423 (9.0)	2.90	0.78 (0.67–0.90)	<0.001

Léčba HT u cerebrovaskulárních onemocnění:

- **Primární prevence**
- Pokles výskytu CMP je nejvýraznějším výsledkem dlouhodobé antihypertenzní léčby.
- Výskyt CMP klesá tím více, čím více je snížen TK ve všech terapeutických režimech
- Metaanalýzy- BKK jsou mírně účinnější, ale tento efekt je vyvážen mírným nárůstem srdečního selhání; betablokátory jsou méně účinné
- Antihypertenzní léčba zpomaluje rozvoj kognitivních poruch; nejvíce důkazů -BKK, zejména nitrendipin, data existují i pro ACEI a AT1-blokátory

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- **Akutní fáze CMP**
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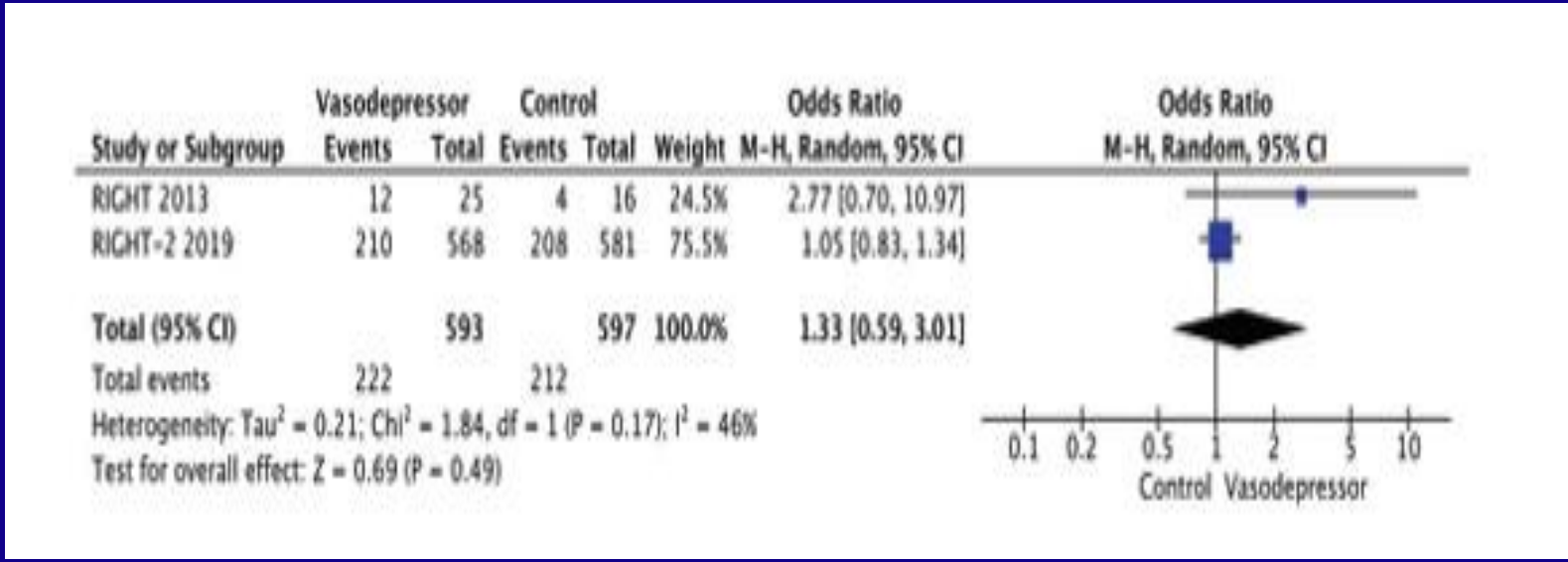
Prehospital management of BP in stroke?



Study or Subgroup	Vasodepressor Events	Total	Control Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
RIGHT 2013	12	25	4	16	24.5%	2.77 [0.70, 10.97]
RIGHT-2 2019	210	568	208	581	75.5%	1.05 [0.83, 1.34]
Total (95% CI)		**593**		**597**	**100.0%**	**1.33 [0.59, 3.01]**
Total events	222		212			

Heterogeneity: $Tau^2 = 0.21$; $Chi^2 = 1.84$, $df = 1$ ($P = 0.17$); $I^2 = 46\%$

Test for overall effect: $Z = 0.69$ ($P = 0.49$)

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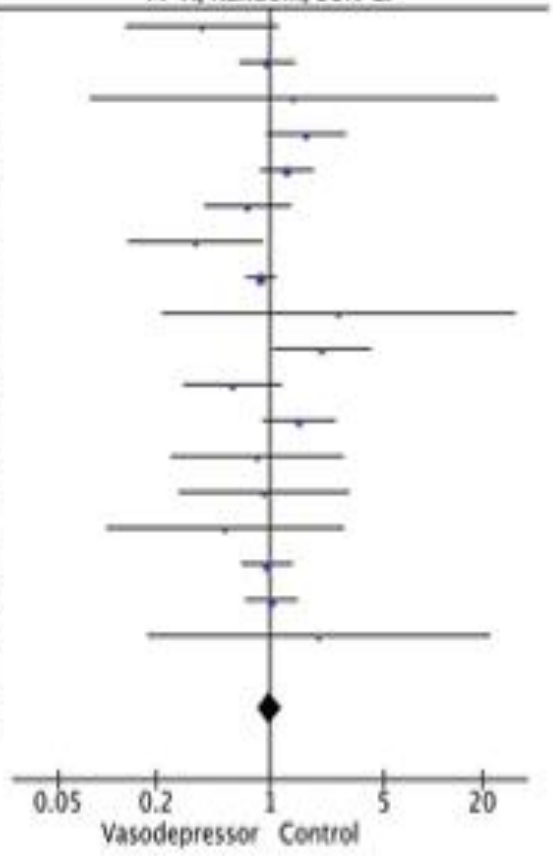
Účinky antihypertenzní léčby na mortalitu u iCMP v období 3-6 M

Study or Subgroup	Vasodepressor Events	Total	Control Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
ACCESS 2003	5	173	12	166	2.4%	0.38 [0.13, 1.11]
ANSG 1992	120	780	42	264	10.2%	0.96 [0.66, 1.41]
Bath 2001	1	14	1	19	0.4%	1.38 [0.08, 24.23]
BEST 1988	67	202	23	100	6.7%	1.66 [0.96, 2.88]
CATIS 2014	68	1988	54	1987	10.7%	1.27 [0.88, 1.82]
CHASE 2020	24	116	33	125	6.0%	0.73 [0.40, 1.33]
CHHIPS 2009	9	95	12	52	2.9%	0.35 [0.14, 0.89]
ENOS 2015 (1)	191	1664	216	1678	15.5%	0.88 [0.71, 1.08]
Eveson 2007	2	18	1	22	0.5%	2.63 [0.22, 31.57]
Fogelholm 2004	27	176	14	174	4.9%	2.07 [1.05, 4.10]
Gelmers 1988	18	93	27	93	4.9%	0.59 [0.30, 1.16]
INWEST 1994	83	195	33	100	7.5%	1.50 [0.91, 2.49]
Li 2018	5	159	6	160	1.9%	0.83 [0.25, 2.79]
PROFESS 2009	5	647	6	713	1.9%	0.92 [0.28, 3.02]
Rashid 2003	3	54	3	30	1.0%	0.53 [0.10, 2.80]
RIGHT-2 2019	70	494	75	510	11.0%	0.96 [0.67, 1.36]
SCAST 2015	66	847	66	864	10.9%	1.02 [0.72, 1.46]
VENTURE 2015	2	187	1	185	0.5%	1.99 [0.18, 22.13]
Total (95% CI)		**7902**		**7242**	**100.0%**	**1.00 [0.84, 1.19]**
Total events	766		625			

Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 26.35$, $df = 17$ ($P = 0.07$); $I^2 = 35\%$

Test for overall effect: $Z = 0.02$ ($P = 0.98$)



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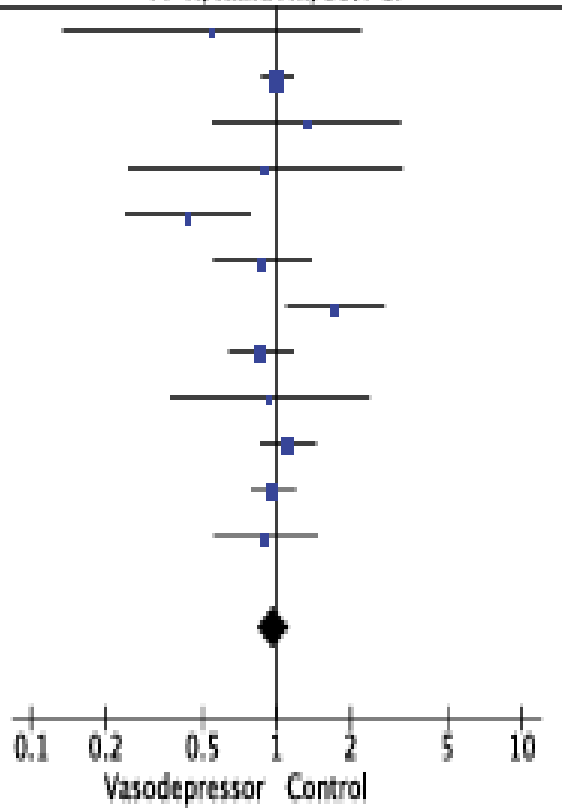
Antihypertenzní léčba po iCMP (3-6M) a vliv na funkční postižení

Study or Subgroup	Vasodepressor Events	Total	Control Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Bath 2001	6	14	11	19	0.9%	0.55 [0.13, 2.20]
CATIS 2014	1488	1988	1485	1987	22.7%	1.01 [0.87, 1.16]
CHASE 2020	12	116	10	125	2.3%	1.33 [0.55, 3.20]
Eveson 2007	11	18	14	22	1.1%	0.90 [0.25, 3.25]
INWEST 2000	30	173	30	92	4.6%	0.43 [0.24, 0.78]
Kaste 1994	67	146	74	150	7.0%	0.87 [0.55, 1.37]
Li 2018	108	159	88	160	7.0%	1.73 [1.10, 2.73]
PRoFESS 2009	541	647	610	713	12.6%	0.86 [0.64, 1.16]
Rashid 2003	19	54	11	30	2.0%	0.94 [0.37, 2.37]
RIGHT-2 2019	204	494	197	510	14.9%	1.12 [0.87, 1.44]
SCAST 2015 (1)	562	847	579	864	18.3%	0.97 [0.79, 1.19]
VENTURE 2015	141	187	143	185	6.5%	0.90 [0.56, 1.45]
Total (95% CI)		4843		4857	100.0%	0.98 [0.85, 1.12]
Total events	3189		3252			

Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 16.81$, df = 11 (P = 0.11); $I^2 = 35\%$

Test for overall effect: Z = 0.35 (P = 0.72)



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Doporučení antihypertenzní léčby u iCMP bez reperfuzní strategie

Recommendations

In hospitalised patients with acute ischaemic stroke and blood pressure < 220/110 mm Hg not treated with intravenous thrombolysis or mechanical thrombectomy, we suggest against the routine use of blood pressure lowering agents at least in first 24 hours following symptom onset, unless this is necessary for a specific comorbid condition.

Quality of evidence: **Moderate** ⊕⊕⊕

Strength of recommendation: Weak ↓?

Antihypertenzní léčba u pacientů s trombolýzou?

Table 4. Evidence profile table for safety and efficacy of intensive systolic blood pressure lowering (target 130–140 mmHg within 1 hour) compared to guideline-recommended systolic blood pressure levels (<180 mm Hg) over 72 hours following symptom onset in acute ischaemic stroke patients receiving intravenous thrombolysis.

Certainty assessment							№ of patients		Effect			
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Experimental arm	Control arm	Relative (95% CI)	Absolute (95% CI)	Certainty	Importance
3 months mortality												
1	Randomised trial	Unclear	N/A	Not serious	Very serious	N/A	102/1081 (9.4%)	88/1115 (7.9%)	OR 1.22 (0.90 to 1.64)	16 more per 1,000 (from 7 fewer to 44 more)	⊕◯◯◯ Very low	Critical
3 months good functional outcome (mRS scores 0–2)												
1	Randomised trial	Unclear	N/A	Not serious	Very serious	N/A	712/1072 (66.4%)	734/1108 (66.4%)	OR 1.00 (0.83 to 1.20)	0 fewer per 1,000 (from 38 fewer to 42 more)	⊕◯◯◯ Very low	Critical
3 months improved mRS scores (shift analysis)												
1	Randomised trial	Unclear	N/A	Not serious	Very serious	N/A	–	–	common OR 1.01 (0.87 to 1.17)	-	⊕◯◯◯ Very low	Critical

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CMP:Antihypertenzní léčba a trombolýza

Recommendations

1. In patients with acute ischaemic stroke undergoing treatment with intravenous thrombolysis (with or without mechanical thrombectomy) we suggest maintaining blood pressure below 185/110 mm Hg before bolus and below 180/105 mm Hg after bolus, and for 24 hours after alteplase infusion. No specific blood pressure-lowering agent can be recommended.

Quality of evidence: Very low⊕

Strength of recommendation: Weak ↑?

2. In patients with acute ischaemic stroke undergoing treatment with intravenous thrombolysis (with or without mechanical thrombectomy) we suggest against lowering systolic blood pressure to a target of 130–140 mm Hg compared to <180 mm Hg during the first 72 hours following of symptom onset.

Quality of evidence: Moderate⊕⊕⊕

Strength of recommendation: Weak ↓?

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Antihypertenzní léčba u mechanické trombektomie?

Study	Location	N patients	Experimental targets	Standard target	Randomization	Period of intervention	Termination date
BEST-II (109)	USA (Cincinnati & Nashville)	120	140–160 mmHg[a] 110–140 mmHg[b]	160–180 mmHg	N/A	24 hours	March 2023
DETECT(111)	Canada (Hamilton)	30	<140 mmHg	<180 mmHg	1 hour	48 hours	June 2022
ENCHANTED2(110)	International	2236	<120 mmHg	140–180 mmHg	3 hours	72 hours	February, 2023
OPTIMAL BP (112)	Korea (multicenter)	644	<140 mmHg	<180 mmHg	0.5-1 hour	24 hours	December 2023
BP-TARGET (113,114)	France (multicenter)	320	<130 mmHg	<185 mmHg	1 hour	24–36 hours	Completed No differences in cl or imaging endpc between the two domization arms

[a]First active comparator arm of BEST-II.

[b]Second active comparator arm of BEST-II.

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Doporučení antihypertenzní léčby u mechanické trombektomie

Recommendations

1. In patients with acute ischaemic stroke due to large vessel occlusion undergoing mechanical thrombectomy (with or without intravenous thrombolysis) we suggest keeping blood pressure below 180/105 mm Hg during, and 24 hours after, mechanical thrombectomy. No specific blood pressure lowering agent can be recommended.
   Quality of evidence: Very low⊕
   Strength of recommendation: Weak ↑?
2. In patients with acute ischaemic stroke due to large vessel occlusion we suggest against actively reducing systolic blood pressure < 130 mm Hg during the first 24 hours following successful mechanical thrombectomy
   Quality of evidence: Moderate⊕⊕⊕
   Strength of recommendation: Weak ↓?
3. In patients with acute ischaemic stroke due to large vessel occlusion undergoing treatment with mechanical thrombectomy (with or without intravenous thrombolysis) systolic blood pressure drops should be avoided.
   Quality of evidence: Very low⊕
   Strength of recommendation: Strong ↓↓

Přerušení nebo pokračování antihypertenzní léčby u i CMP?

Expert consensus statement

In patients with acute ischaemic stroke not treated with reperfusion therapies (intravenous thrombolysis or mechanical thrombectomy) and with clinical deterioration where a haemodynamic mechanism is suspected or shown to be directly responsible for the deterioration, we suggest:

- stopping existing blood pressure lowering therapy,
- administering intravenous fluids and
- introducing non-pharmacological procedures to raise blood pressure

before considering

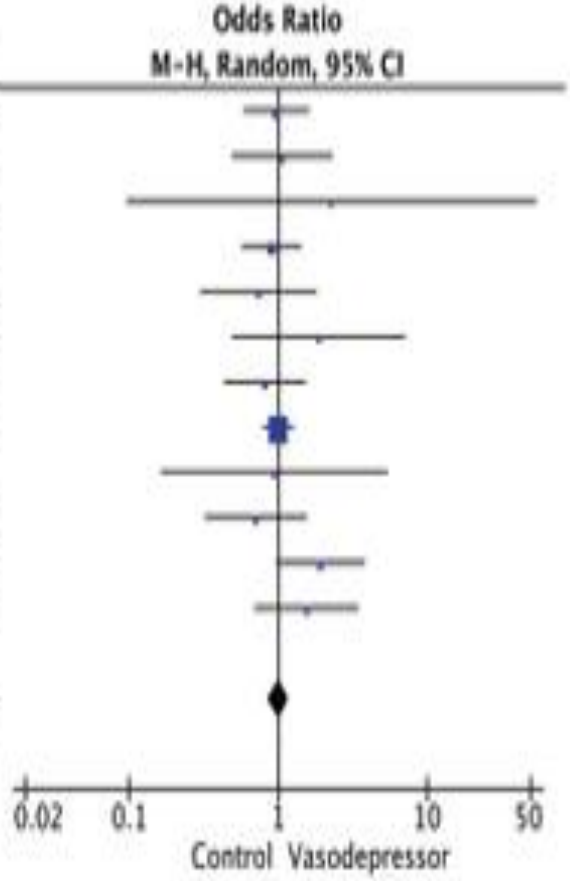
- careful use of vasopressor agents to increase blood pressure with close monitoring of blood pressure values. Vote 10 of 10.

Vliv antihypertenzní léčby na mortalitu u hemorhagických CMP (3-6M)

Study or Subgroup	Vasodepressor Events	Total	Control Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
ATACH-2 2016	33	500	34	500	10.1%	0.97 [0.59, 1.59]
CHASE 2020	16	126	14	116	4.2%	1.06 [0.49, 2.28]
CHHIPS 2009	2	18	0	7	0.2%	2.27 [0.10, 53.39]
ENOS 2016n	42	309	47	316	12.3%	0.90 [0.57, 1.41]
Gupta 2018	11	59	14	59	3.1%	0.74 [0.30, 1.79]
ICH ADAPT 2013	7	37	4	36	1.4%	1.87 [0.50, 7.03]
INTERACT 2008	21	203	25	201	6.5%	0.81 [0.44, 1.50]
INTERACT2 2013	166	1394	170	1421	47.7%	0.99 [0.79, 1.25]
Koch 2008	3	20	3	19	0.8%	0.94 [0.17, 5.36]
PATICH 2017	13	96	18	99	4.1%	0.70 [0.32, 1.53]
RIGHT-2 2019 ich	35	73	23	71	5.4%	1.92 [0.98, 3.78]
SCAST 2014	18	144	11	130	4.0%	1.55 [0.70, 3.41]
Total (95% CI)		**2979**		**2975**	**100.0%**	**1.01 [0.86, 1.18]**
Total events	367		363			

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 7.77$, df = 11 (P = 0.73); $I^2 = 0\%$

Test for overall effect: Z = 0.11 (P = 0.91)



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Snižování TK v akutní fázi hemorhagických CMP

Recommendation

In patients with acute (<24 hours) intracerebral haemorrhage there is continued uncertainty over the benefits and risks (advantages/disadvantages) of intensive blood pressure lowering on functional outcome.
Quality of evidence: **Moderate** ⊕⊕⊕
Strength of recommendation: -

In patients with hyperacute (<6 hours) intracerebral haemorrhage, we suggest lowering blood pressure to below 140 mm Hg (and to keep it above 110 mm Hg) to reduce haematoma expansion.
Quality of evidence: **Moderate** ⊕⊕⊕
Strength of recommendation: Weak ↑

Antihypertenzní léčba u hCMP

Expert consensus statement

In patients with acute intracerebral haemorrhage, we suggest initiating antihypertensive treatment as early as possible and ideally within 2 hours of symptom onset. The decrease of systolic blood pressure should not exceed 90 mm Hg from baseline values. Vote 10 of 10.

In patients with acute intracerebral haemorrhage, we suggest lowering blood pressure according to recommended levels beyond 6 hours after onset of treatment for at least 24 hours and up to 72 hours to reduce haematoma expansion. Vote 10 of 10.

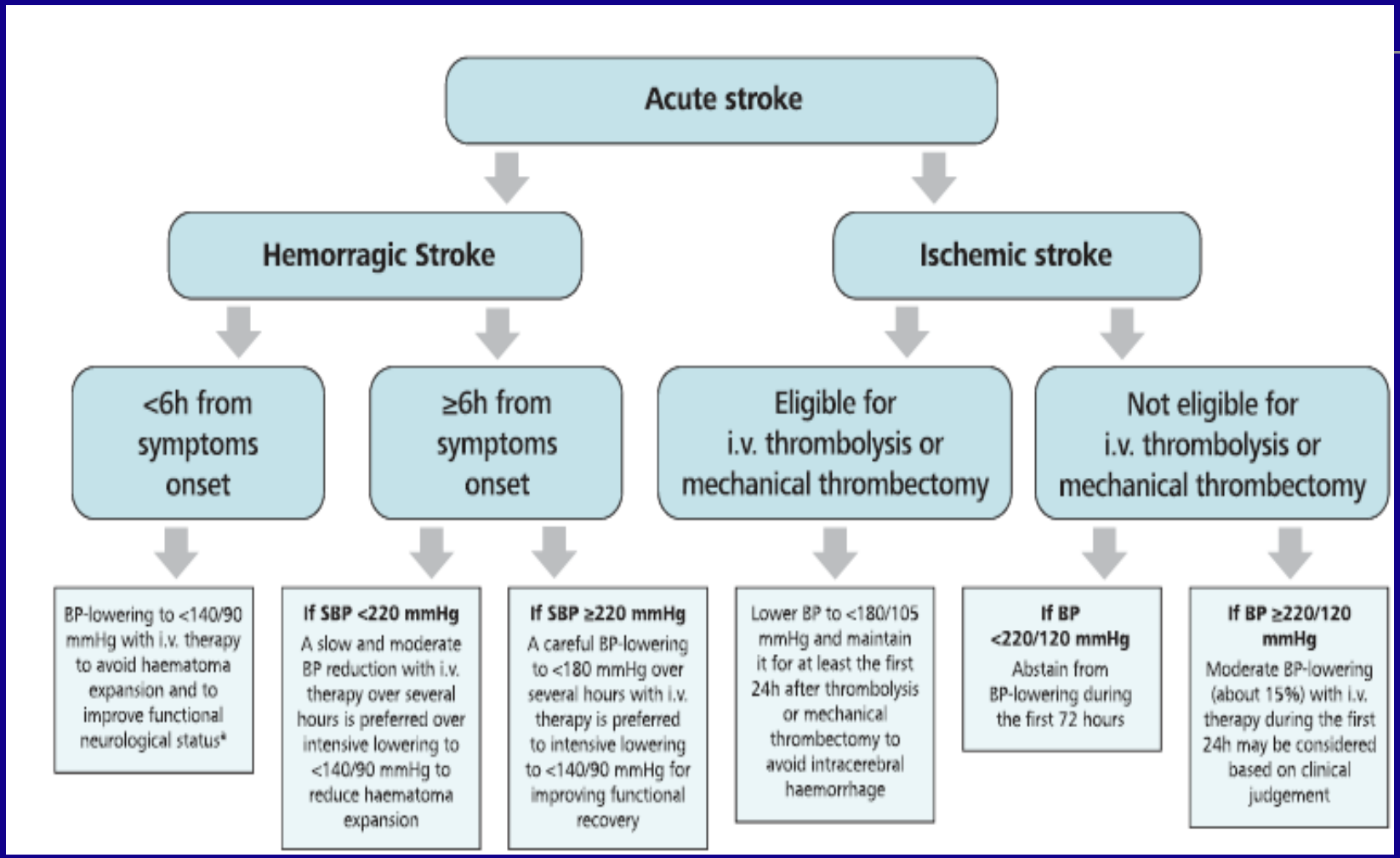
Přerušení nebo pokračování antihypertenzní léčby u hCMP?

Expert consensus statement

In patients acute intracerebral haemorrhage who need blood pressure lowering therapy to maintain blood pressure within the recommended range and who do not have swallowing problems, we suggest continuation of prior oral antihypertensive agents. Vote 10 of 10.

In patients with acute intracerebral haemorrhage who need blood pressure lowering therapy to maintain blood pressure within the recommended range and who have dysphagia or decreased level of consciousness, we suggest temporarily stopping previous oral hypertensive therapy and using intravenous antihypertensive agents until swallowing is restored or a nasogastric tube is in place. Vote 10 of 10.

Léčba HT v akutní fázi CMP



Guidelines ESH 2023

Léčba HT v akutní fázi CMP

Recommendations and statements	CoR	LoE
In patients with hemorraghic stroke and < 6h after symptom onset, a BP <140/90 mmHg can be considered to avoid hematoma expansion.	II	B
In patients with hemorraghic stroke >6h after symptom onset, an SBP ≥220 mmHg may be carefully lowered with i.v. therapy to <180 mmHg. If SBP < 220 mmHg, slow and moderate BP reductions are preferable over intensive BP to <140/90 mmHg.	II	B
In patients with acute ischemic stroke eligible for i.v. thrombolysis (IVT) or mechanical thrombectomy (MT), BP can be carefully lowered and maintained at <180/105 mmHg for at least the first 24 after intervention.	II	B
In patients not eligible for IVT or MT with BP ≥220/120 mmHg, drug therapy may be considered based on clinical judgement, to reduce BP by 15% during the first 24 h after the stroke onset.	II	B
In patients with acute ischemic stroke, routine BP-lowering with antihypertensive therapy is not recommended.	III	A

Guidelines ESH 2023

Léčba hypertenze u CMP

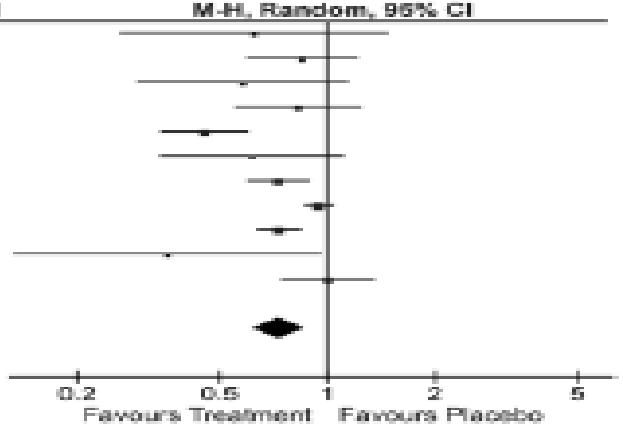
- Všeobecné poznámky
- Primární prevence
- Akutní fáze CMP
- **Sekundární prevence**
- Závěry

Riziko opakovaných CMP a KV mortality po CMP: benefit antihypertenzní léčby

A

Study or Subgroup	Treatment Events	Treatment Total	Placebo Events	Placebo Total	Weight	Risk Ratio M-H, Random, 95% CI
Carter et al	7	49	11	48	3.1%	0.62 [0.26, 1.47]
Dutch TIA	52	732	62	741	9.5%	0.85 [0.60, 1.21]
HOPE	13	580	23	613	4.5%	0.58 [0.30, 1.13]
HSCSG	37	233	42	219	8.5%	0.83 [0.55, 1.24]
Liu et al	87	762	147	758	11.5%	0.45 [0.35, 0.59]
Martí Massó and Lozano	20	170	18	94	5.5%	0.61 [0.34, 1.10]
PATS	159	2841	217	2824	13.4%	0.73 [0.60, 0.89]
PRoFESS	880	10146	934	10186	15.8%	0.95 [0.87, 1.03]
PROGRESS	307	3051	420	3054	14.8%	0.73 [0.64, 0.84]
SCOPE	5	97	14	97	2.5%	0.36 [0.13, 0.95]
TEST	74	372	69	348	10.9%	1.00 [0.75, 1.35]
Total (95% CI)		**18853**		**18882**	**100.0%**	**0.73 [0.62, 0.87]**
Total events	1821		1957			

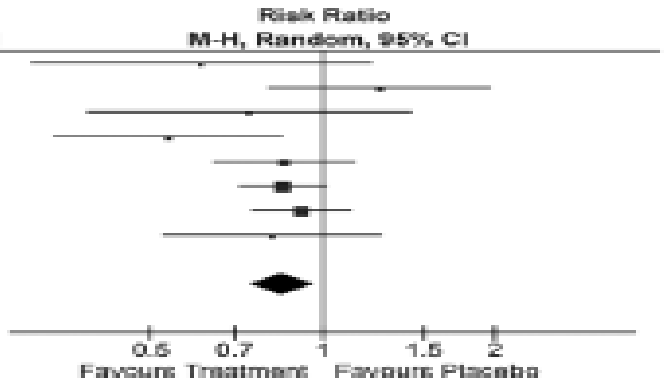
Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 39.47$, df = 10 (P < 0.0001); $I^2 = 75\%$
Test for overall effect: Z = 3.64 (P = 0.0003)



B

Study or Subgroup	Treatment Events	Treatment Total	Placebo Events	Placebo Total	Weight	Risk Ratio M-H, Random, 95% CI
Carter et al	10	49	16	48	3.2%	0.61 [0.31, 1.21]
Dutch TIA	41	732	33	741	7.1%	1.26 [0.80, 1.97]
HSCSG	15	233	19	219	3.5%	0.74 [0.39, 1.42]
Liu et al	27	762	50	758	6.8%	0.54 [0.34, 0.86]
PATS	87	2841	101	2824	15.6%	0.86 [0.65, 1.14]
PRoFESS	223	10146	263	10186	30.0%	0.85 [0.71, 1.02]
PROGRESS	181	3051	198	3054	26.4%	0.92 [0.75, 1.11]
TEST	34	372	39	348	7.4%	0.82 [0.53, 1.26]
Total (95% CI)		**18186**		**18178**	**100.0%**	**0.85 [0.75, 0.96]**
Total events	618		719			

Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 8.45$, df = 7 (P = 0.29); $I^2 = 17\%$
Test for overall effect: Z = 2.56 (P = 0.01)



Hypertension, January 2017

Léčba HT u cerebrovaskulárních onemocnění:

- **Sekundární prevence**
- U nemocných po CMP(ischemické i hemoragické) vede antihypertenzní léčba k významnému snížení rizika její recidivy.
- Léčba je indikována u hypertenze a je vhodné ji podávat i při vysokém normálním TK
- Snížení STK <130 mmHg výhodné- pokles zejména hemoragických iktů
- Nejvíce dokladů o cerebroprotektivitě je u ACE-inhibitorů v kombinaci s diuretikem typu indapamidu
- lze použít také dihydropyridinové BKK nebo sartany. Ze základních antihypertenziv jsou nejméně účinné BB

Léčba hypertenze u CMP

- Všeobecné poznámky
- Primární prevence
- Akutní fáze CMP
- Sekundární prevence
- Závěry

Závěry I

- Hypertenze je nejdůležitějším rizikovým faktorem ischemické i hemorhagické CMP
- Adekvátní kontrola TK výrazně snižuje riziko CMP i recidiv
- Léčba hypertenze v akutní fázi CMP je doprovázena řadou nejasností, odlišnosti u iCMP a hCMP
- Spontánní regrese TK i iCMP v průběhu 3 dní
- Cílový TK pod 140/90 mmHg, pod 130/80mmHg v sekundární prevenci

Kontrola hypertenze a mortalita na CMP

…mortalita na CMP může být použita jako marker kontroly TK v populaci

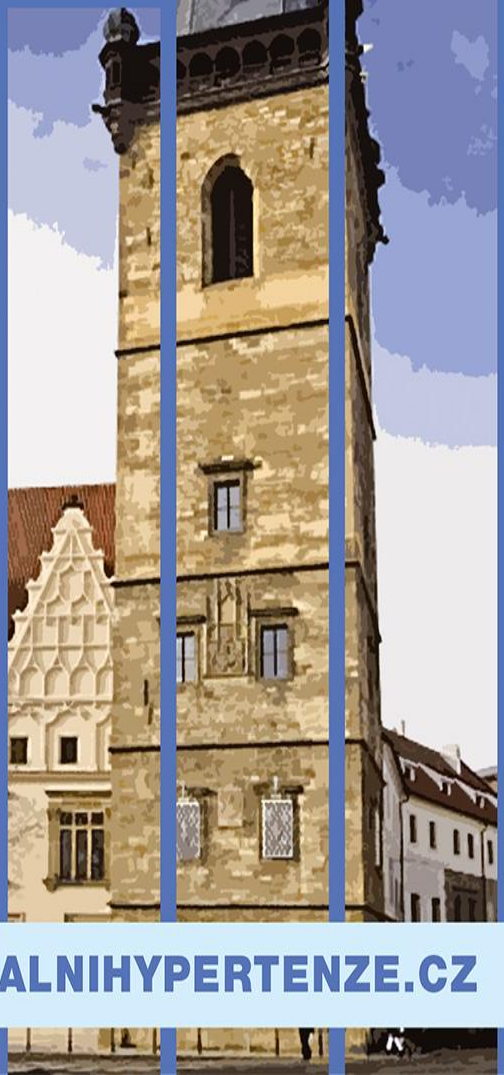
Cooper R. Hypertension 2007; 49: 773-774

Závěry

- Hypolipidemická léčba velmi vhodná, cílové hodnoty LDL pod 1,4 mmol/l v sek. prevenci CMP: Statiny+ ezetimib, ev. PCSK9
- Nejasné cílové hodnoty LDL po kardioembol. Či hemorhag. CMP
- Antidiabetická léčba u CMP- nejasný benefit, rozporné výsledky u gliflozinů navzdory snížení TK
- Antiagregační léčba po iCMP- ASA
- Kombinace ticagrelolu + ASA v sekundární prevenci ? , kombinace vaskulární dávky rivaroxabanu a ASA?
- Abstinence nikotinu

XXII. SYMPOSIUM ARTERIÁLNÍ HYPERTENZE:

současné klinické trendy



Symposium pořádá

Česká společnost pro hypertenzi, z.s.
v odborné spolupráci s Centrem pro výzkum,
diagnostiku a léčbu hypertenze
III. interní kliniky 1. LF UK a VFN v Praze

3. dubna 2024

WWW.ARTERIALNIHYPERTENZE.CZ