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AORTÁLNÍ DISEKCE

VE SVĚTLE ESC DOPORUČENÍ 2024

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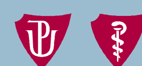
ESC GUIDELINES

2024 ESC Guidelines for the management of peripheral arterial and aortic diseases

Developed by the task force on the management of peripheral arterial and aortic diseases of the European Society of Cardiology (ESC)

Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS), the European Reference Network on Rare Multisystemic Vascular Diseases (VASCERN), and the European Society of Vascular Medicine (ESVM)



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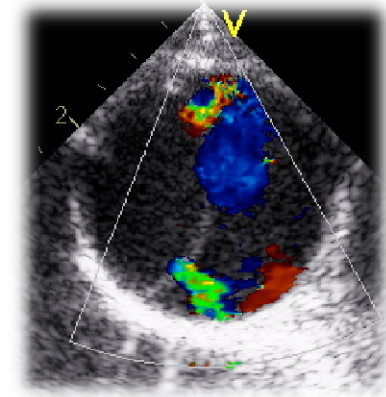
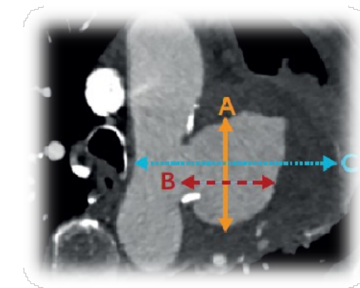
Akutní aortální syndrom

- **AORTÁLNÍ DISEKCE**
- **INTRAMURÁLNÍ HEMATOM**
- **PENETRUJÍCÍ ATEROSKLEROTICKÝ VŘED**
- **AORTÁLNÍ PSEUDOANEURYSMA**
- **TRAUMATICKÉ AORTÁLNÍ LÉZE**





Co se změnilo po 10 letech??

Recommendations for diagnostic work-up of acute aortic syndrome					
TTE is recommended as an initial imaging investigation. In stable patients with a suspicion of AAS, the following imaging modalities are recommended (or should be considered according to local availability and expertise):	I	C	In patients with suspected AAS, focused TTE (with use of contrast if feasible) is recommended during the initial evaluation.	I	C
MRI	I	C	In patients with suspected AAS, CMR should be considered as an alternative imaging technique if CCT is not available.	IIa	C
TOE	IIa	C	In patients with suspected AAS, TOE is recommended to guide peri-operative management and detect complications.	I	C
Recommendations for medical treatment in acute aortic syndromes					
In all patients with AD, medical therapy, including pain relief and blood pressure control is recommended	I	C	Invasive monitoring with an arterial line and continuous three-lead ECG recording, as well as admission to an intensive care unit, is recommended.	I	B

v úvodu fast TTE

MRAg když nelze CTAg

TEE – perioperační management, komplikace

monitorace, léčba bolesti, kontrola hypertenze

Recommendations for diagnostic work-up of acute aortic syndrome		
CCT from neck to pelvis is recommended as the first-line imaging technique in patients with suspected AAS as it is widely available, accurate, and provides information about the entry tear, extension, and possible complications (malperfusion, dilatation, or rupture).	I	C
In patients with suspected AAS, TOE is recommended to guide peri-operative management and detect complications.	I	C
Recommendations for medical treatment in acute aortic syndromes		
In patients with AAS who can be managed conservatively and who achieve haemodynamic targets with i.v. anti-impulse therapy, switching to oral BBs and, if necessary, up-titration of other BP-lowering agents is recommended after 24 h if gastrointestinal transit is preserved.	I	B
If the patient has a contraindication for BBs, a non-dihydropyridine calcium blocker should be considered.	IIa	B

CTAg zlatý standard

Konzervativní léčba – BB i.v., po 24h p.o. + další AH

Aortální disekce

- 80-90% všech AAS
- 3/100 000/rok
- 65% muži…7.dekáda
- RF
  - **Hypertenze**
  - Genetická onem. pojiva
  - BAV, CoA
  - Dilatace/Aneurysma
  - Těhotenství
  - Iatrogenní
- Pohlavní rozdíly….
- V ranní hodinách (8-9h), zimní období
- Vysoká mortalita TAD
  - 55-60% bez operace
  - 22% (hosp. mortalita)
- Mortalita TBD 14%
- Cca 6% pts. necítí bolest

Clinical suspicion of AAS: determine ADD-RS[a]

Aortic dissection detection-risk score (ADD-RS)[a]

High-risk condition

- Marfan syndrome
- Family history of aortic disease
- Known aortic valve disease
- Recent aortic manipulation
- Known aortic aneurysm

If one present = 1 ADD-RS point

High-risk pain feature

- Chest, back, or abdominal pain described as abrupt onset, severe intensity, or ripping/tearing

If present = 1 ADD-RS point

High-risk examination feature

- Haemodynamic instability (hypotension/shock)
- Perfusion deficit (pulse deficit, differential systolic blood pressure)
- Focal neurological deficit
- New AR murmur

If one present = 1 ADD-RS point

High risk: ADD-RS ≥2

CCT neck-pelvis without delay and/or focused TTE[a] + ECG

ECG: exclude STEMI (2023 ESC ACS Guidelines)

Chest X-Ray and laboratory test and POCUS (if available)

POCUS	Chest X-Ray	D-dimer	D-dimer and chest X-Ray
+	+	+	–
CCT	CCT	CCT	Consider alternative diagnosis

CCT:

- \+ → AAS confirmed
- – → AAS excluded → Consider alternative diagnosis

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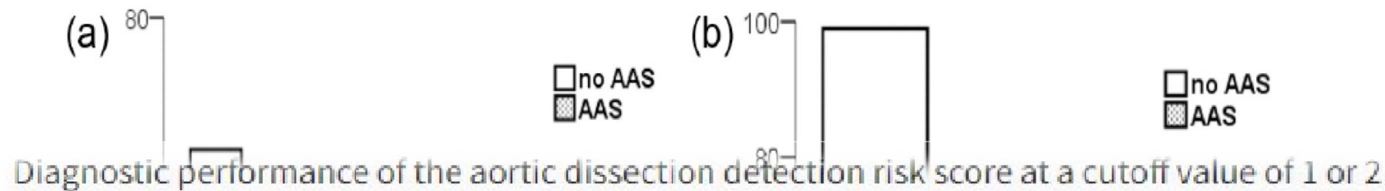
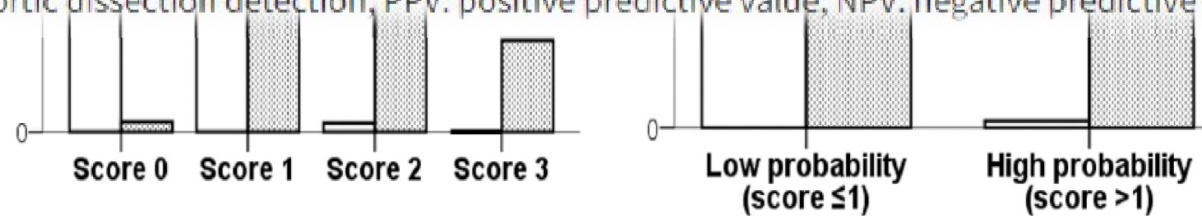
Prevalence of acute aortic syndrome (AAS) in the study population according to the aortic dissection ...



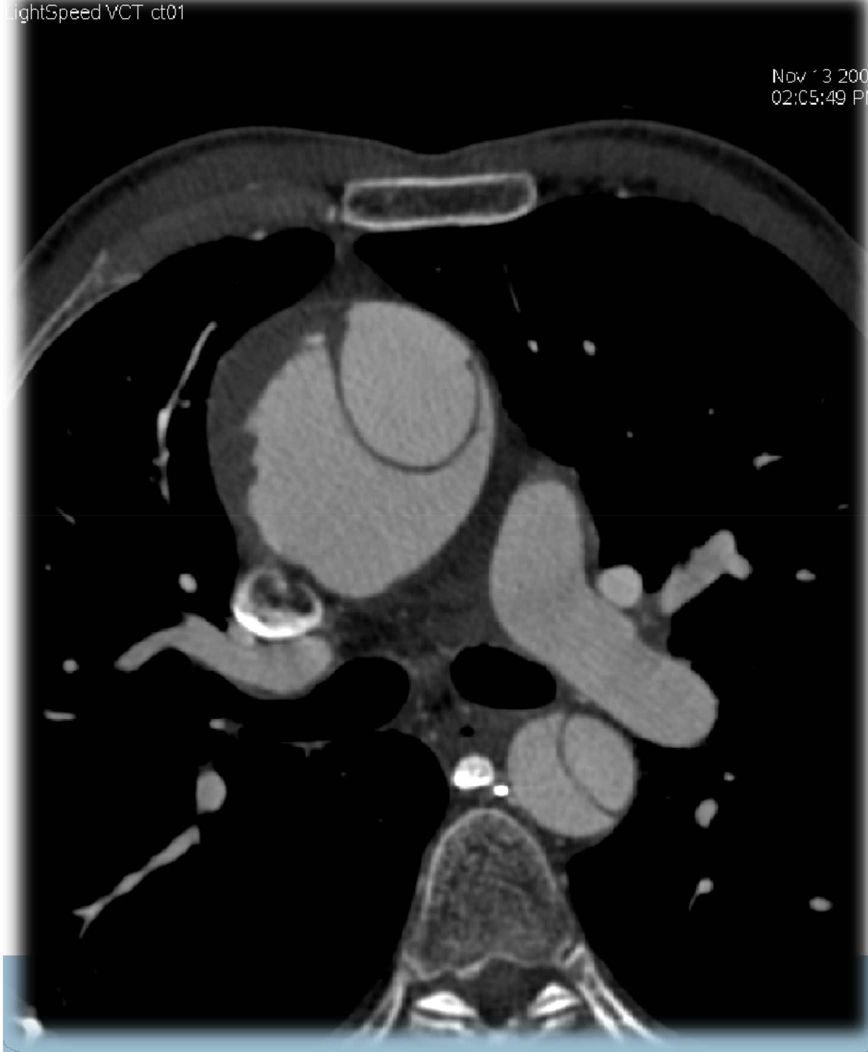
Diagnostic performance of the aortic dissection detection risk score at a cutoff value of 1 or 2

ADD risk score	Sensitivity	Specificity	PPV	NPV	Failure rate
⩾1	98.8%	64.6%	44.9%	99.5%	0.5%
⩾2	63.5%	98.9%	94.7%	87.5%	9.7%

ADD: aortic dissection detection; PPV: positive predictive value; NPV: negative predictive value.



Gorla R, et al., Eur Heart J Acute Cardiovasc Care, Volume 6, Issue 5, 1 August 2017, Pages 371–378,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LightSpeed VCT ct01
Nov 13 2007
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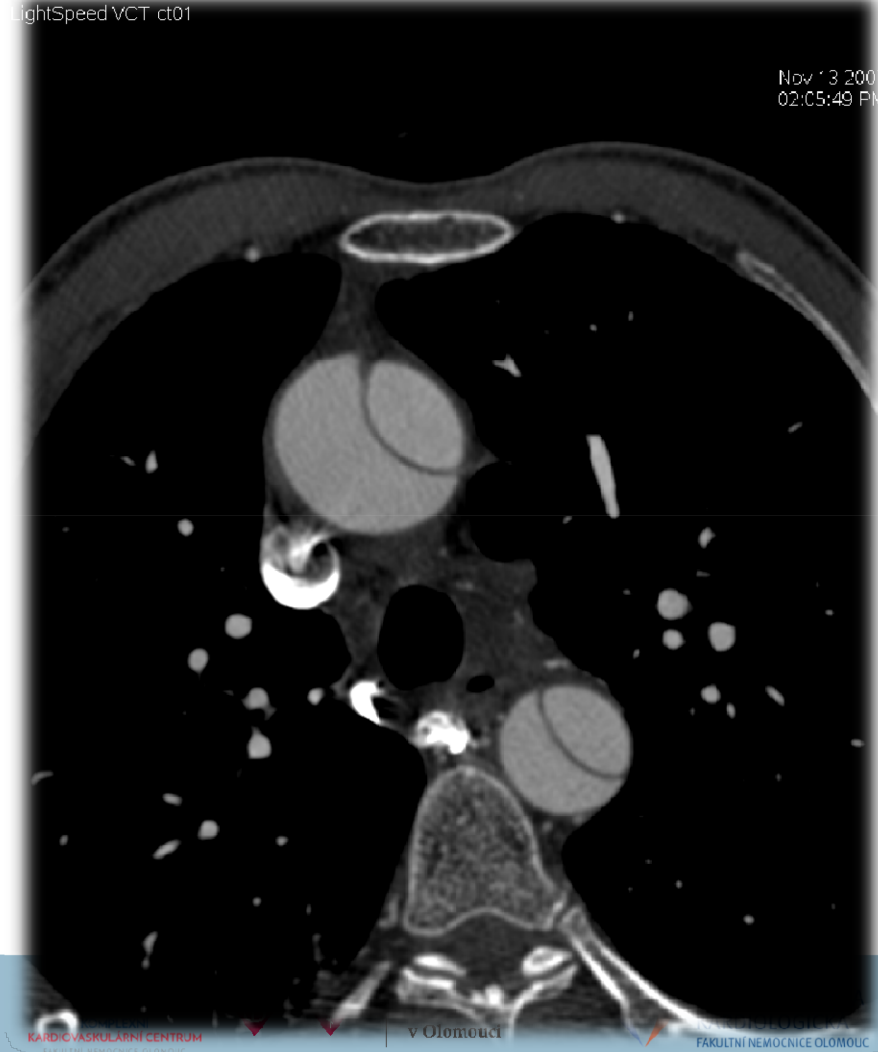
GE MEDICAL SYSTEMS
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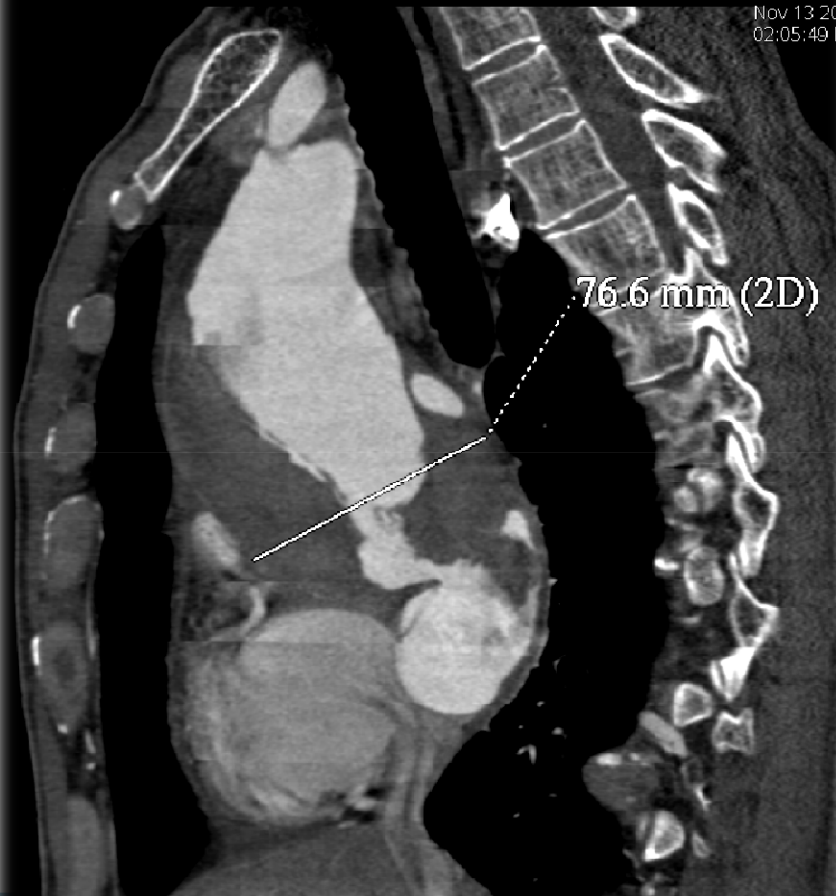
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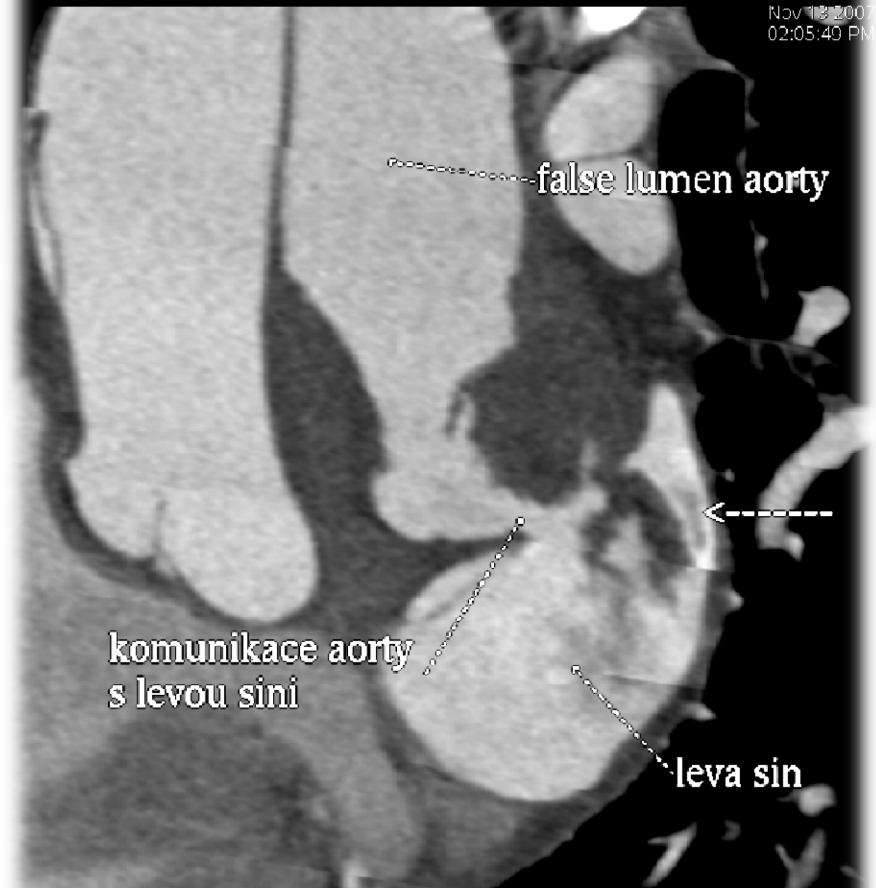
76.6 mm (2D)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komunikace aorty
s levou sini
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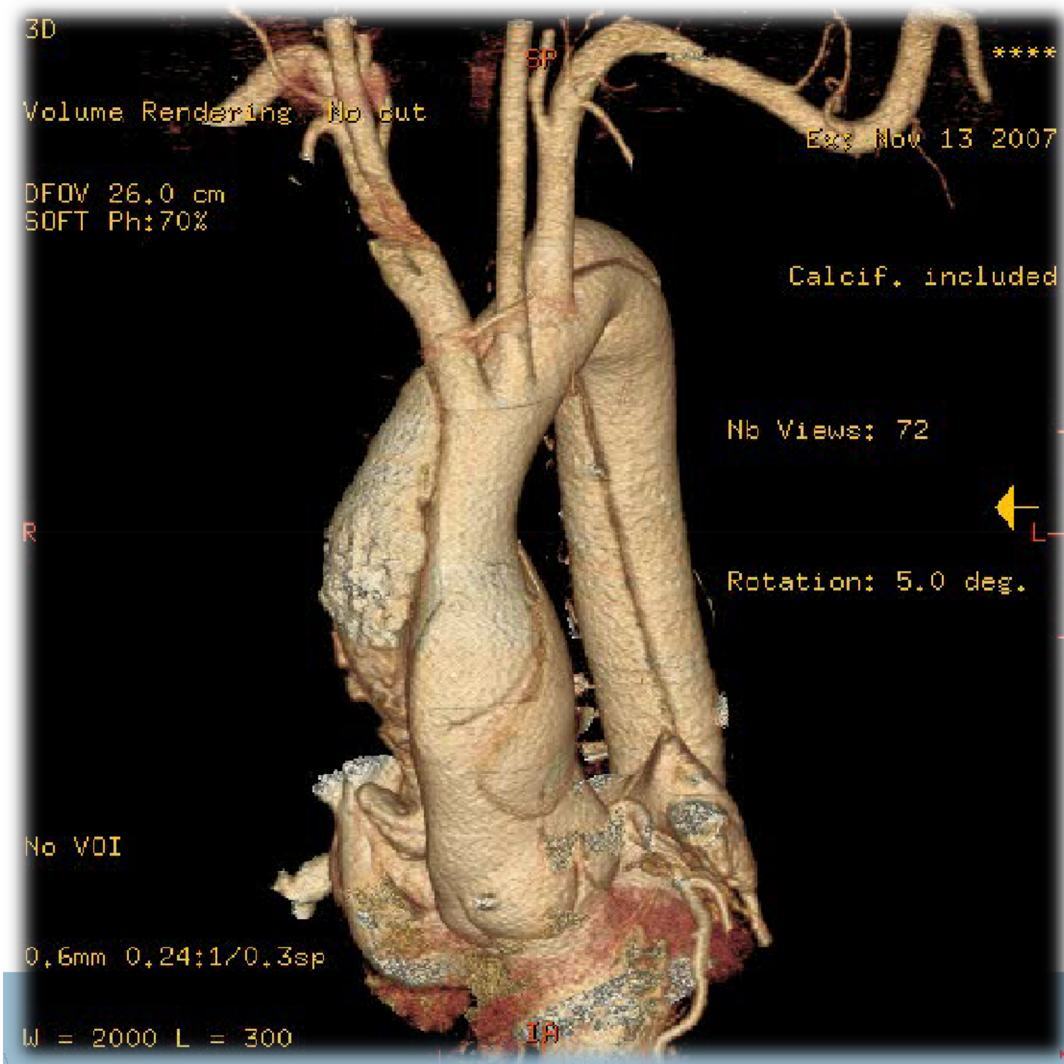
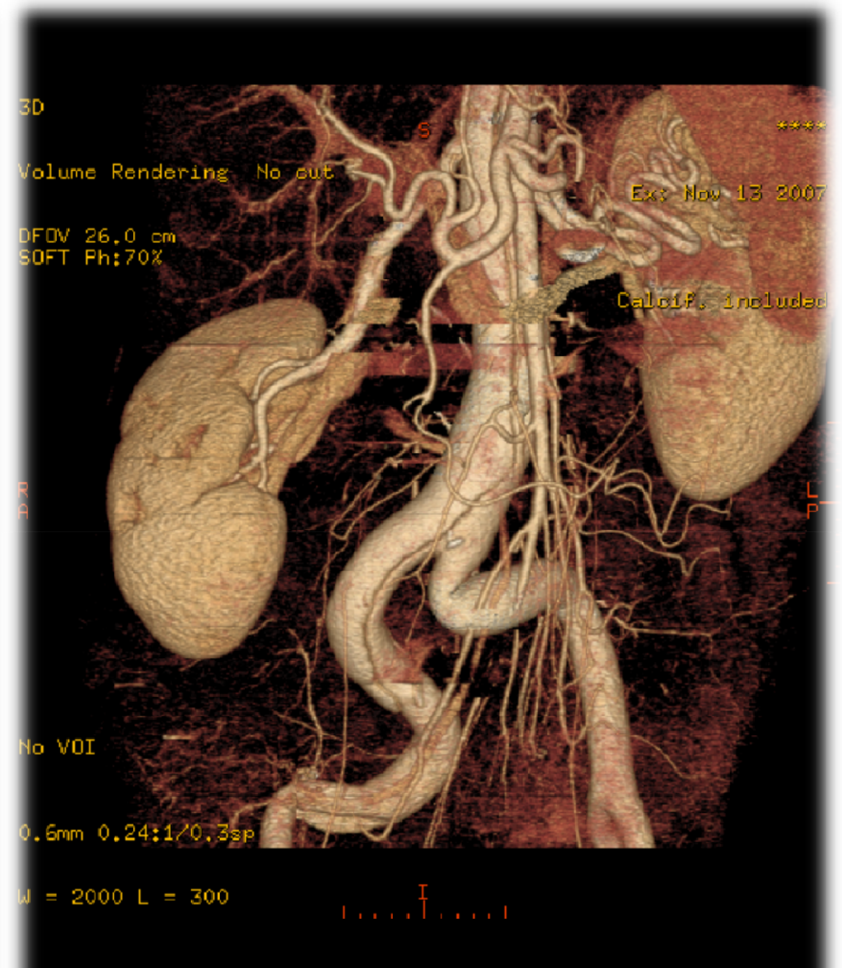

3D
Volume Rendering No cut
DFOV 26.0 cm
SOFT Ph:70%
Ex: Nov 13 2007
Calcif. included
Nb Views: 72
Rotation: 5.0 deg.
No VOI
0.6mm 0.24:1/0.3sp
W = 2000 L = 300


3D
Volume Rendering No cut
DFOV 26.0 cm
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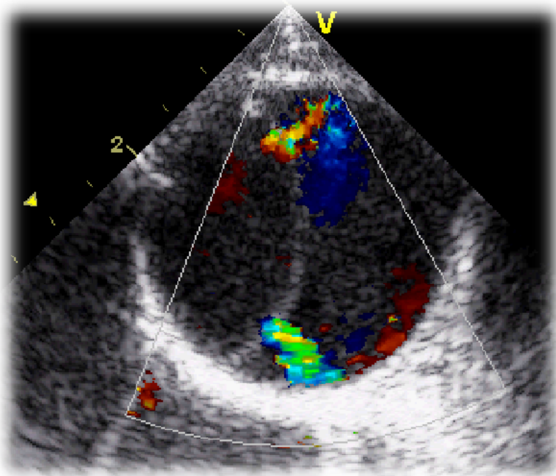
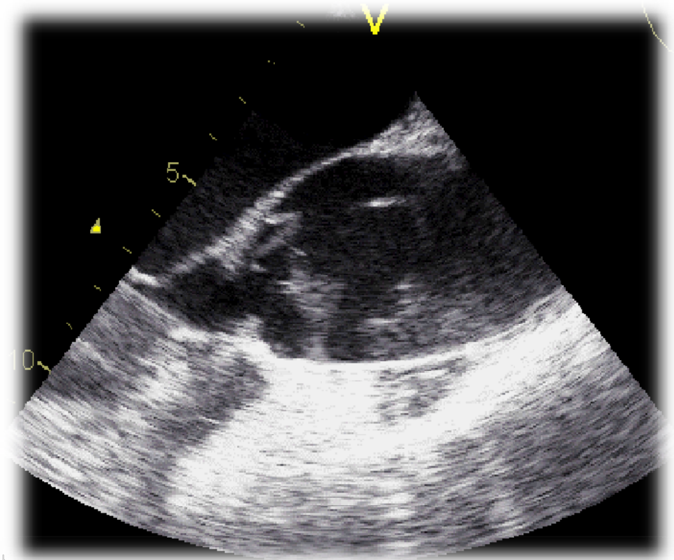
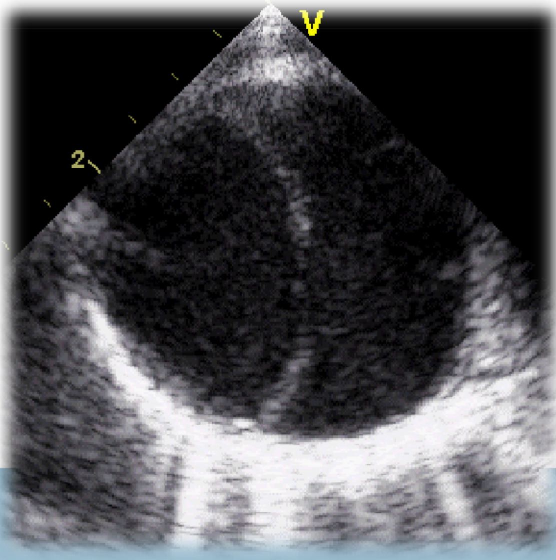
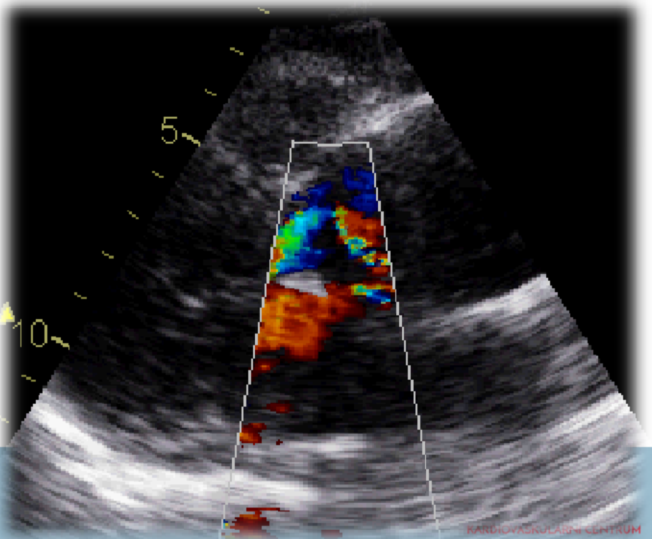
Calcif. included
No VOI
0.6mm 0.24:1/0.3sp
W = 2000 L = 300

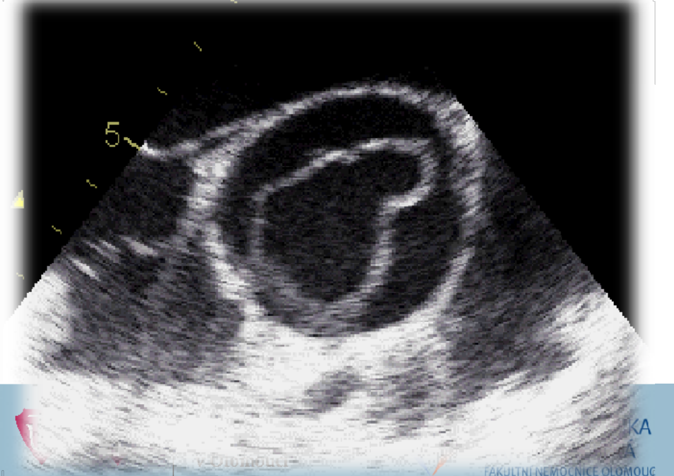
TAAD



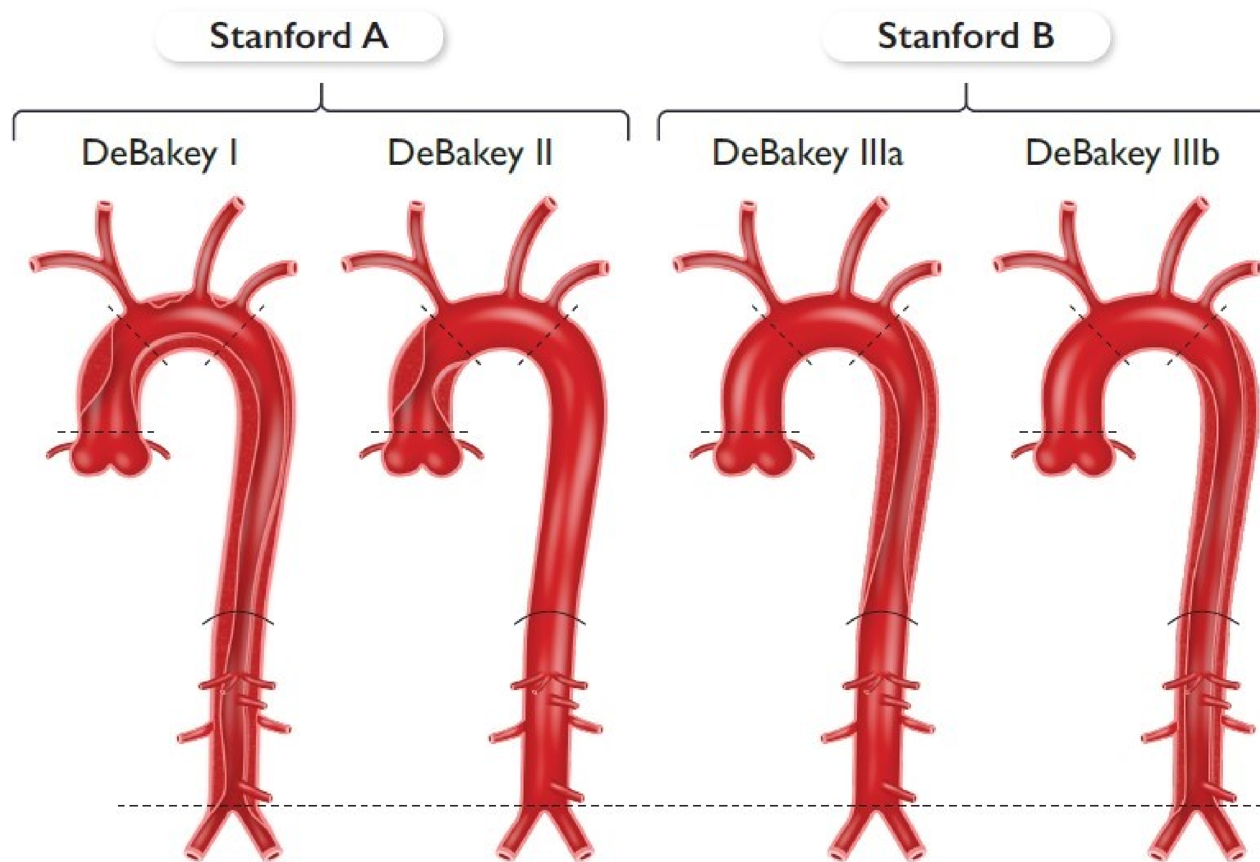








Classification of acute aortic syndromes



Frequency of acute aortic syndrome

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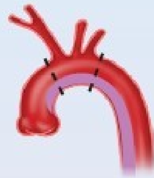
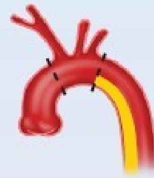
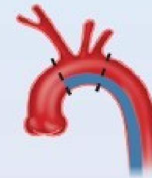
TEM aortic dissection classification

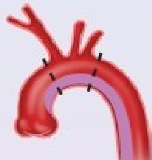
T Type

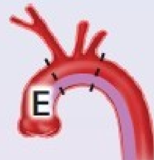

A


B

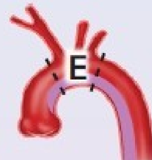

Non-A non-B

E Entry

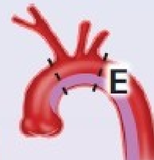

E0



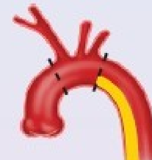
E1

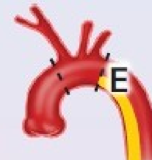


E2

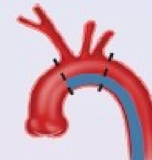


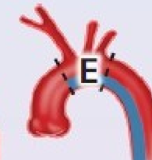
E3


E0

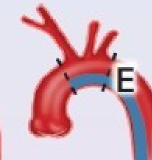


E3


E0



E2

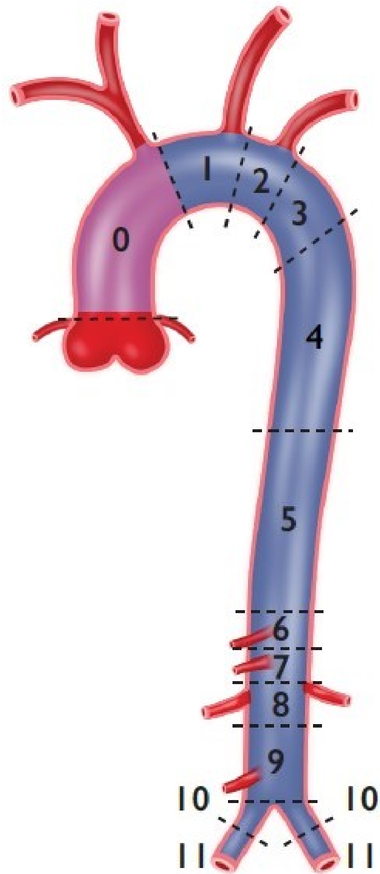


E3

M Malperfusion

M0 - no malperfusion
M1 - coronary
M2 - supra-aortic
M3 - spinal, visceral, iliac

(-) no clinical symptoms
(+) clinical symptoms



Type	Proximal extent	Distal extent
A_D Entry tear: Zone 0	0	0
	1	1
	2	2
	3	3
	4	4
B_{PD} Entry tear: ≥Zone 1	5	5
	6	6
	7	7
	8	8
I_D Unidentified entry tear involving Zone 0	9	9
	10	10
	11	11
	12	12

Aortální disekce - léčba

1 Rate/pressure control

Intravenous labetalol or esmolol
(if contraindication to beta-blockade, substitute with diltiazem or verapamil)

Titrate to heart rate ≤60 b.p.m.

(Class I)

2 Pain control

Intravenous opiates

Titrate to pain control

(Class I)

Continue to step 3 if systolic BP ≥ 120mmHg

3 Pressure control

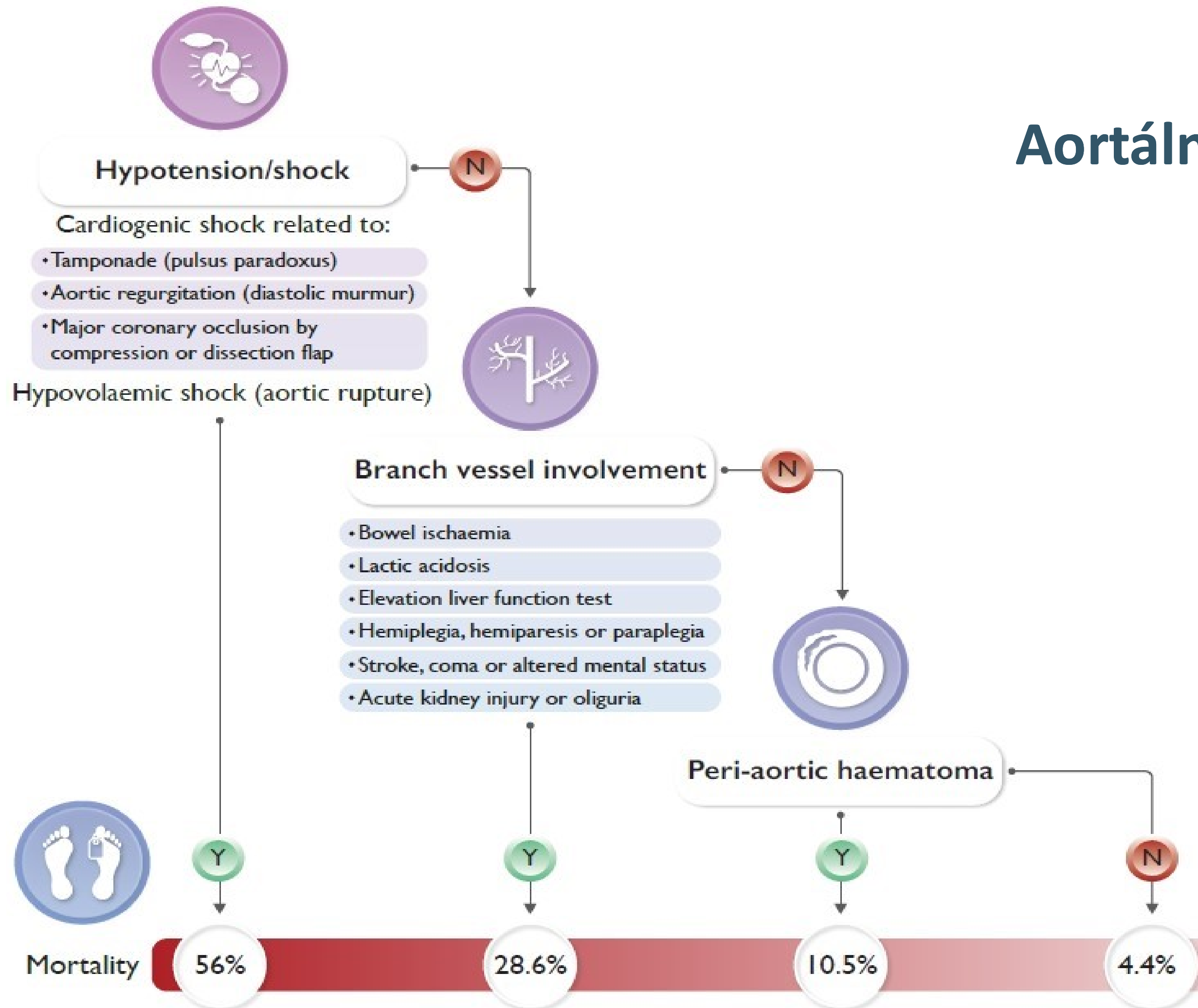
Intravenous vasodilator (nitroprusside or angiotensin-converting enzyme inhibitor)

Titrate to BP <120 mmHg

(Goal is lowest possible BP that maintains adequate organ perfusion)

(Class I)

Aortální disekce - komplikace



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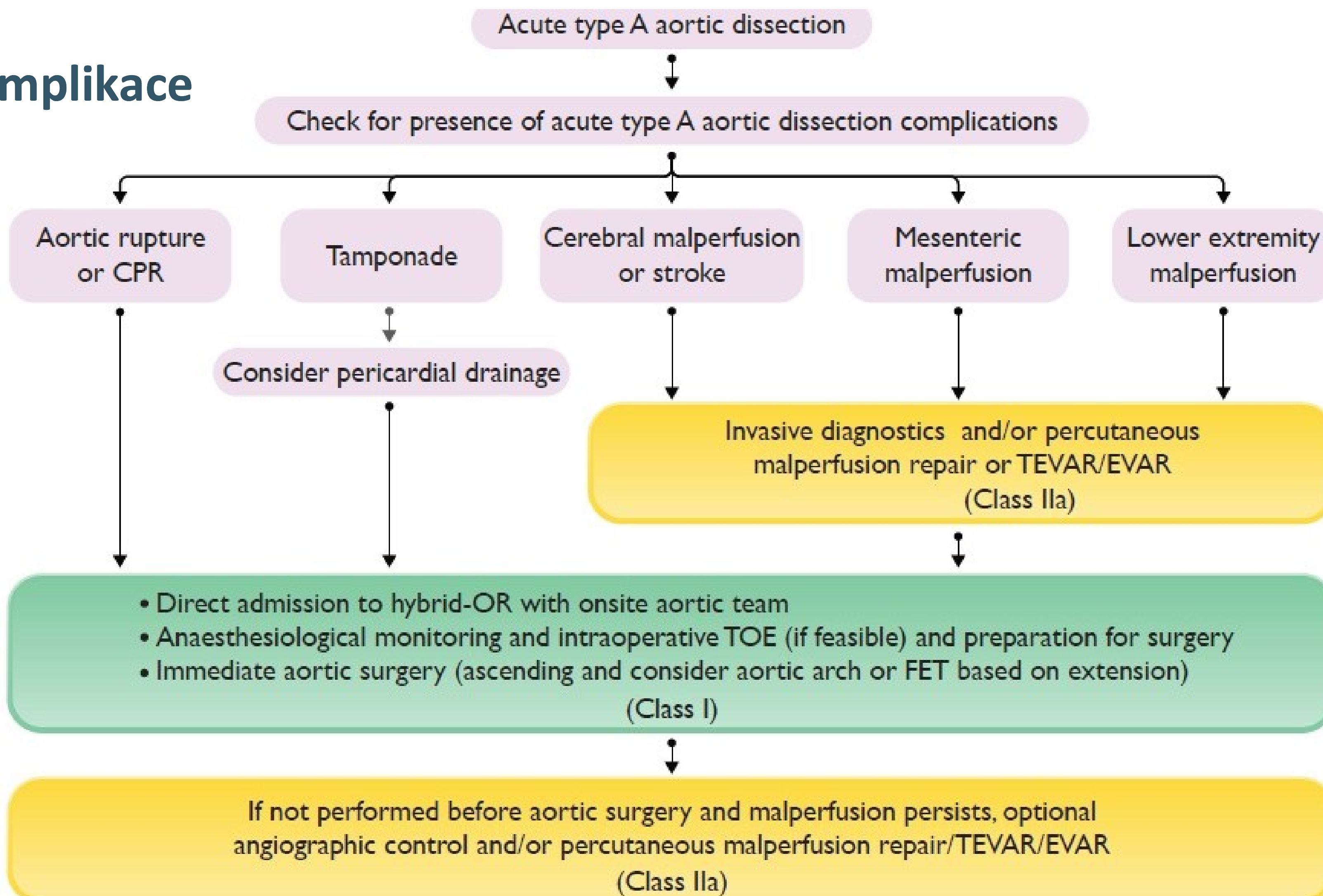
Aortální disekce A - léčba

Recommendations	Class[a]	Level[b]
In patients with acute TAAD, emergency surgical consultation and evaluation and immediate surgical intervention is recommended.[1182,1250]	I	B
In patients with acute TAAD who have extensive destruction of the aortic root, a root aneurysm, or a known genetic aortic disorder, aortic root replacement is recommended with a mechanical or biological valved conduit.[1251–1255]	I	B
In patients presenting with acute TAAD, transfer from a low- to a high-volume aortic centre with the presence of a multidisciplinary team should be considered to improve survival if transfer can be accomplished without significant delay in surgery.[1256,1257]	IIa	B
In selected patients, a valve-sparing root repair may be considered, when performed by experienced surgeons.[1251,1258,1259]	IIb	B

- Mortalita cca 50%/48h (1-2%/hod)
- **TAAD = chirurgická léčba**
  - **Perioeprační moratlia 17-25%**
- **IRAD (registr) - mortalita**
  - **24% med. X 4,4% chir.**
- GERAADA (German Registry of Acute Aortic Dissection Type A) score – Predikovaná 30denní mortalita pacientů operovaných pacientů

Komplikace



Aortální disekce B

Recommendations	Class[a]	Level[b]
Medical therapy including pain relief and blood pressure control is recommended in all patients with acute TBAD.[1215,1219,1310,1311]	I	B
In patients with complicated acute TBAD, emergency intervention is recommended.[1193,1250,1284,1285,1288,1289,1291–1293]	I	B
In patients with complicated acute TBAD, TEVAR is recommended as the first-line therapy.[c,910,1288–1293]	I	B
In patients with acute TBAD, BBs should be considered as the first-line medical therapy.[1216,1312]	IIa	B
In patients with uncomplicated acute TBAD, TEVAR in the subacute phase (between 14 and 90 days) should be considered in selected patients with high-risk features[d] to prevent aortic complications.[1219,1226,1295,1297,1298,1308,1309]	IIa	B

Acute type B aortic dissection

Check for presence of acute type B aortic dissection complications

Aortic rupture/ tamponade[a]

Consider pericardial drainage

Cerebral malperfusion/stroke[a]

Mesenteric malperfusion

Lower extremity malperfusion

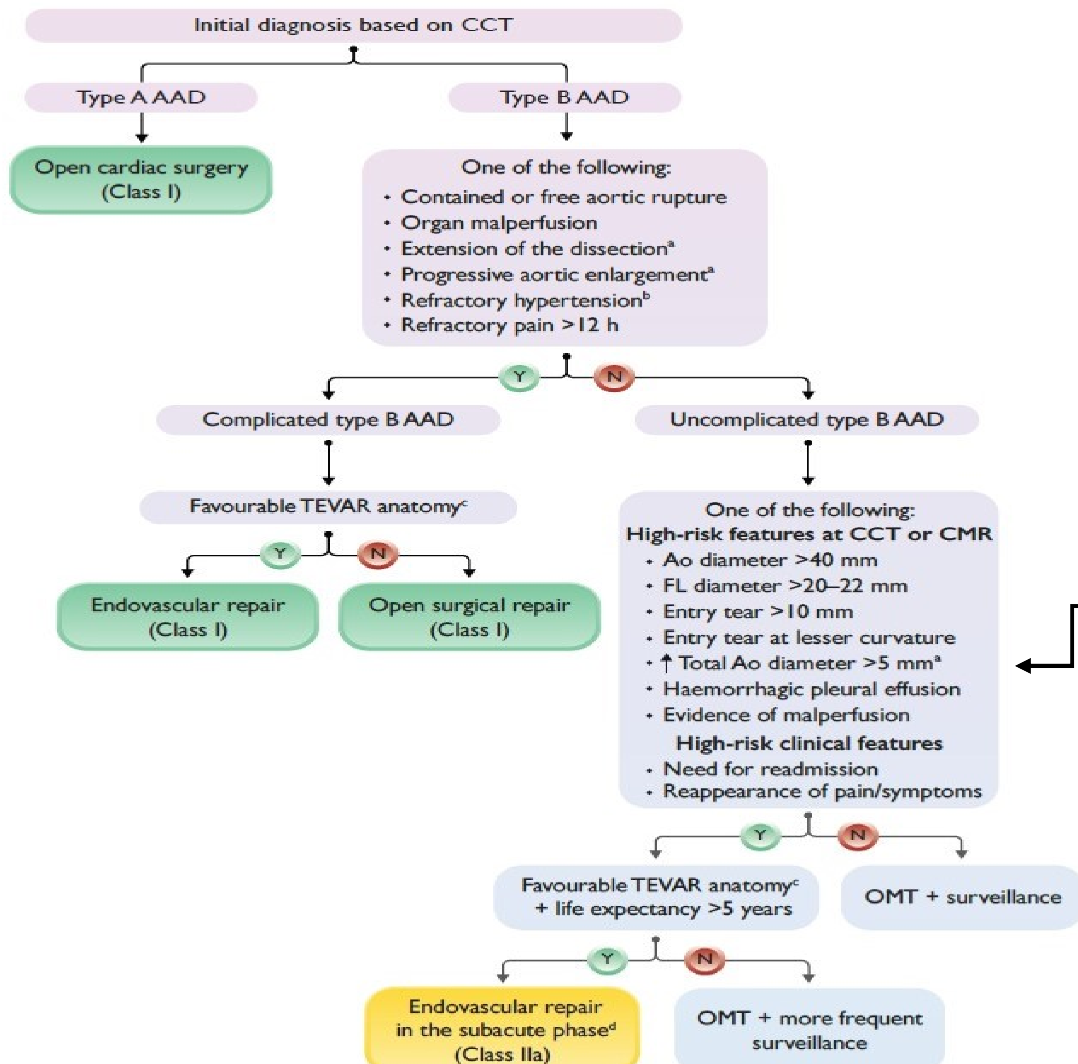
- TEVAR or EVAR and/or percutaneous malperfusion repair
- In case of retrograde aortic dissection, immediate aortic surgery (ascending aorta, aortic arch or FET, based on extension)

(Class I)

If malperfusion persists

- Angiographic control and/or percutaneous malperfusion repair or TEVAR or EVAR
- Consider extra-anatomic bypass if lower extremity malperfusion persists

Aortální disekce B- léčba (komplikací)



- **Trend časné TEVAR léčby i u nekomplikované TBD**
- ADSORB a INSTEAD-XL
- **Vysoce rizikové ukazatele**

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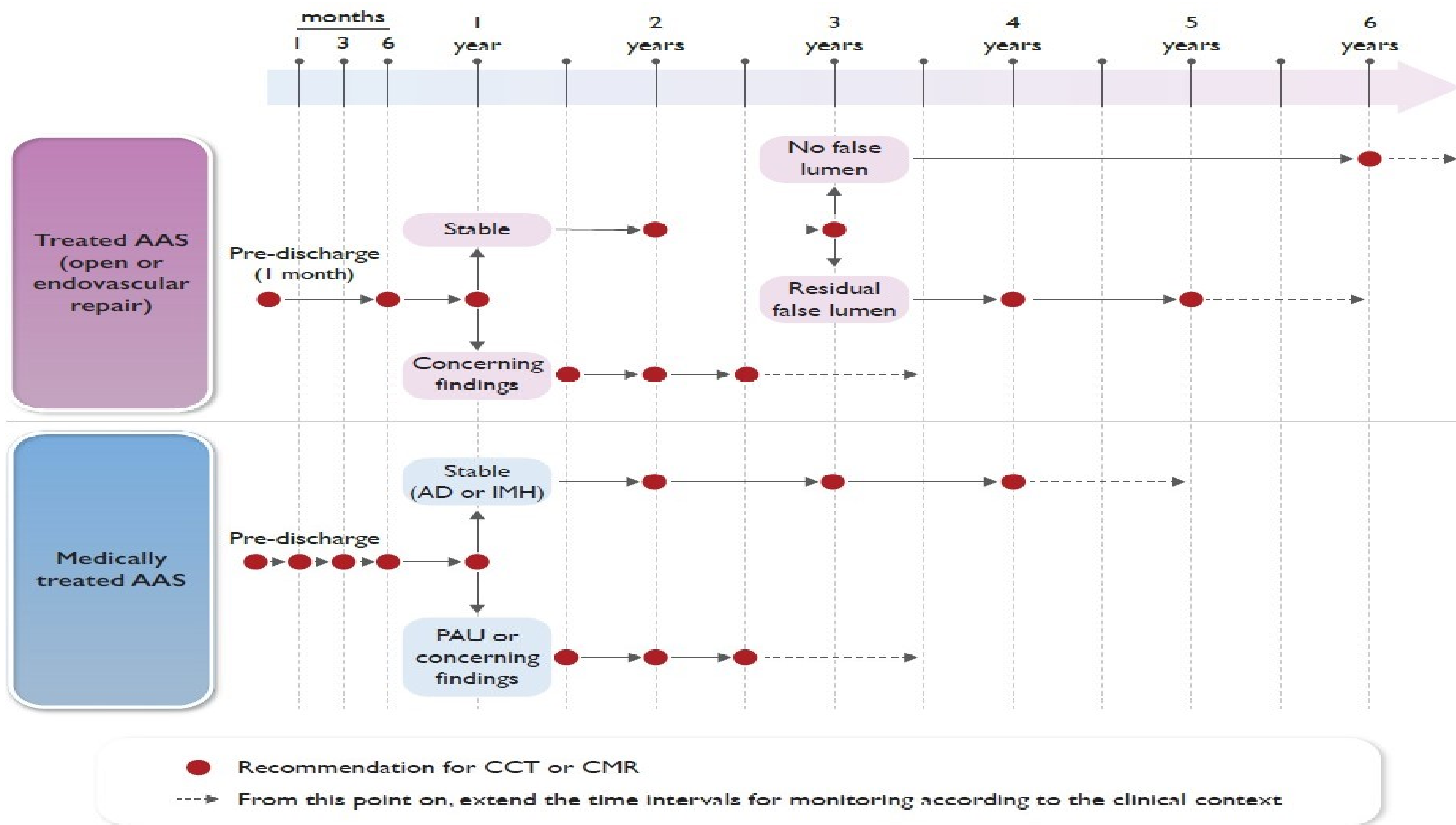

months
1
3
6
1 year
2 years
3 years
4 years
5 years
6 years
Treated AAS (open or endovascular repair)
Pre-discharge (1 month)
Stable
No false lumen
Residual false lumen
Concerning findings
Medically treated AAS
Pre-discharge
Stable (AD or IMH)
PAU or concerning findings
Recommendation for CCT or CMR
From this point on, extend the time intervals for monitoring according to the clinical context

Závěr

- AD závažné onemocnění s vysokou morbiditou mortalitou
- Včasná diagnostika (ADD-RS), TTE, CTAg
- Monitorace, kontrola bolesti, hypertenze
- Disekce A – chirurgie x Disekce B konzervativně
  - Léčba komplikací - progrese disekce, malperfúze – TEVAR
- Novější klasifikace – společný jazyk (kardiolog, intervenční radiolog, kardiochirurg/cévní chirurg

DĚKUJEME ZA POZORNOST

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KOMPLEXNÍ
KARDIOVASKULÁRNÍ CENTRUM
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