ESC European Society of Cardiology

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ESC GUIDELINES

2018 ESC Guidelines for the diagnosis and management of syncope

The Task Force for the diagnosis and management of syncope of the European Society of Cardiology (ESC)

Developed with the special contribution of the European Heart Rhythm Association (EHRA)

Endorsed by: European Academy of Neurology (EAN), European Federation of Autonomic Societies (EFAS), European Federation of Internal Medicine (EFIM), European Union Geriatric Medicine Society (EUGMS), European Society of Emergency Medicine (EuSEM)

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A EXPERIMENTÁLNÍ MEDICÍNY
KARDIOLOGIE

IKEM

NEW / REVISED CLINICAL SETTINGS AND TESTS:

- Tilt testing: concepts of *hypotensive susceptibility*
- Increased role of prolonged ECG monitoring
- Video recording in suspected syncope
- "Syncope without prodrome, normal ECG and normal heart" (adenosine sensitive syncope)
- Neurological causes: "ictal asystole"

NEW / REVISED INDICATIONS FOR TREATMENT:

- *Reflex syncope:* algorithms for selection of appropriate therapy based on age, severity of syncope and clinical forms
- *Reflex syncope:* algorithms for selection of best candidates for pacemaker therapy
- *Patients at risk of SCD:* definition of unexplained syncope and indication for ICD
- *Implantable loop recorder* as alternative to ICD, in selected cases

2018 NEW/REVISED CONCEPTS in management of syncope

(OUT-PATIENT) SYNCOPE MANAGEMENT UNIT:

- Structure: staff, equipment, and procedures
- Tests and assessments
- Access and referrals
- Role of the Clinical Nurse Specialist
- Outcome and quality indicators

MANAGEMENT IN EMERGENCY DEPARTMENT:

- List of low-risk and high-risk features
- Risk stratification flowchart
- Management in *ED Observation Unit* and/or fast-track to *Syncope Unit*
- Restricted admission criteria
- Limited usefulness of risk stratification scores

Definice

- Přechodná ztráta vědomí v důsledku mozkové hypoperfuze, charakterizovaná náhlým začátkem, krátkým trváním a spontání rychlou úpravou…

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Přechodná ztráta vědomí (TLOC)

- Stav opravdové nebo zjevné ztráty vědomí se ztrátou uvědomění si sebe sama, charakterizovaný amnézií na období bezvědomí, abnormální motorickou kontrolou, ztrátou odpovědi a krátkým trváním

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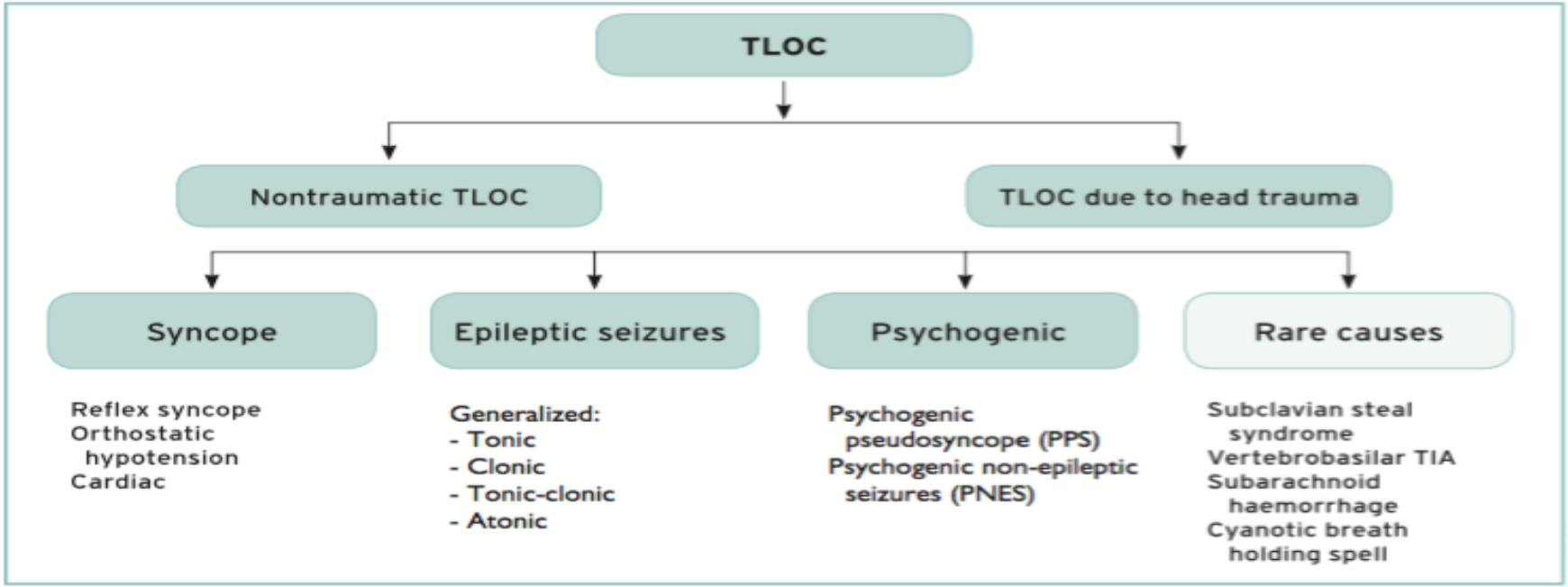
Jiné příčiny přechodné ztráty vědomí



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Klasifikace synkop

- Reflexní (nervově zprostředkovaná)
  - Vasovagální (ortostatická VVS nebo emoční)
  - Situační (močení, kašel, defekace, atd)
  - Syndrom karotického sinu
  - Atypické formy (bez prodromů a zjevných spouštěčů)
- Synkopa při ortostatické hypotenzi
  - Léky způsobená (nejběžnější)
  - Deplece objemu (krvácení, zvracení, atd)
  - Primární autonomické selhání (neurogenní OH) (čisté autonomní selhání, Parkinsonova choroba, demence)
  - Sekundární autonomické selhání (neurogenní OH) (DM, amyloidóza, CHRS)
- Kardiální (kardiovaskulární)
  - Arytmická (brady vs tachy)
  - Strukturní onemocnění (AOS, HKMP, myxom)
  - Kardiopulmonální a velké cévy (plicní embolie, disekce aorty..)

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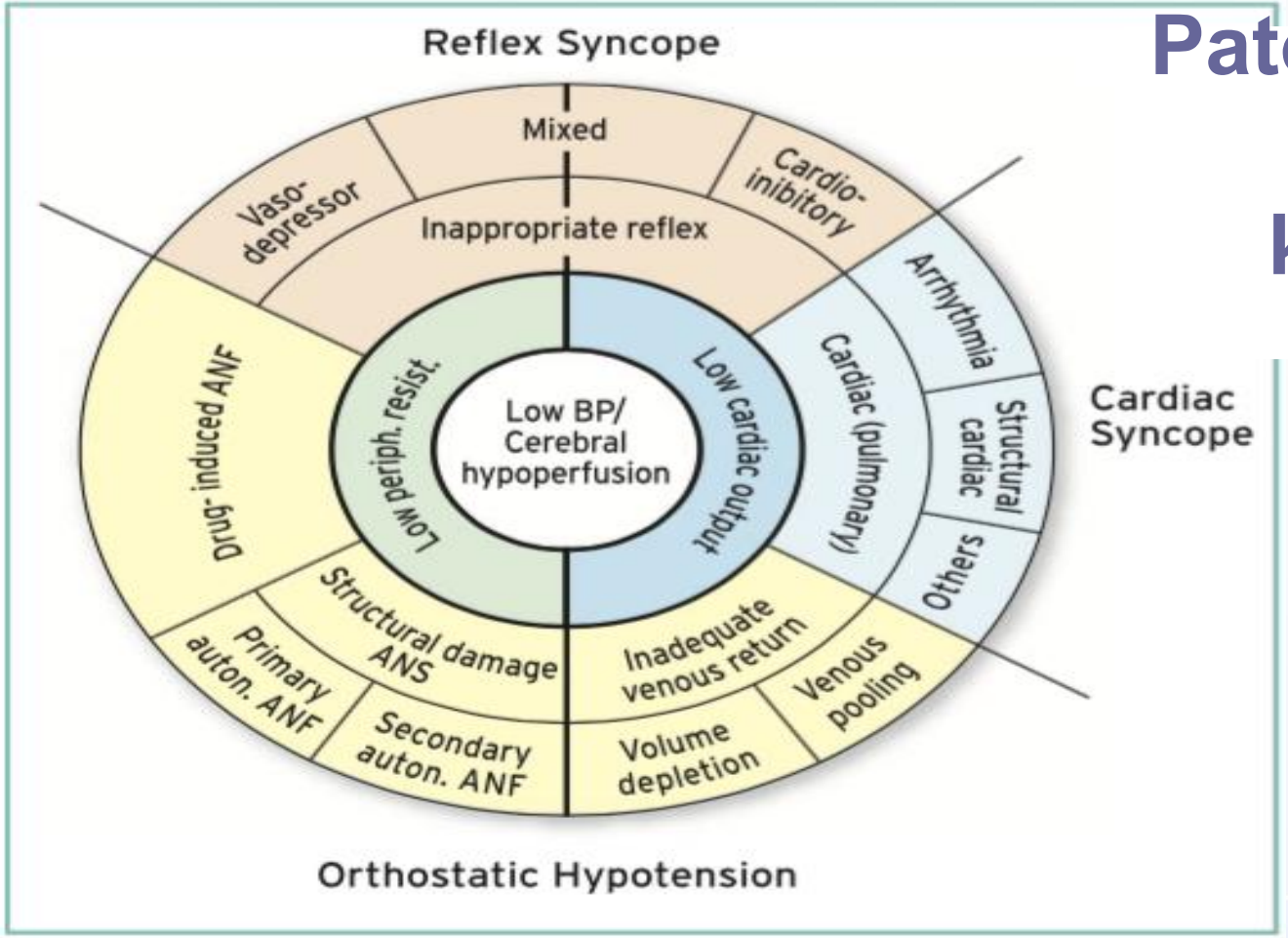
Patofyziologický podklad klasifikace synkop



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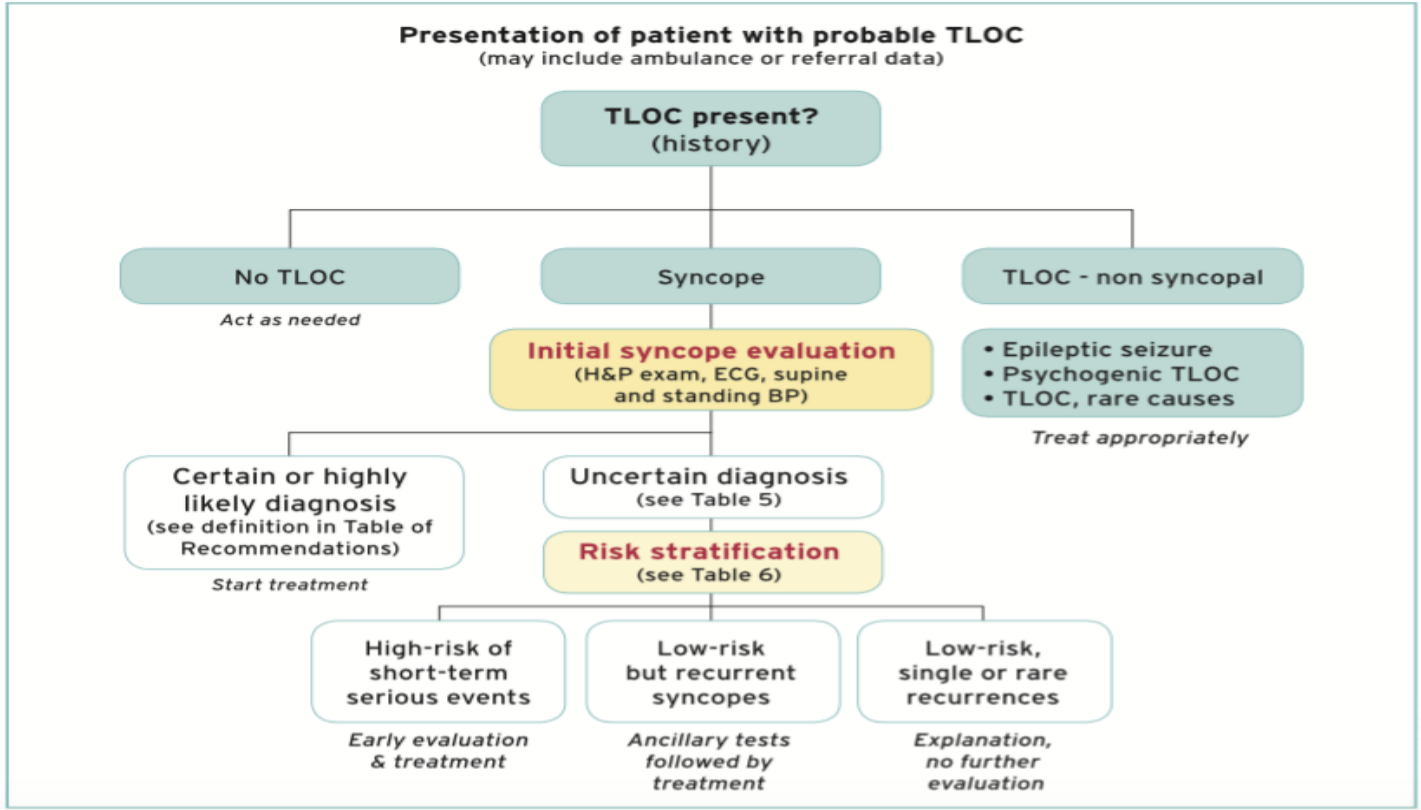
Vstupní vyšetření



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Klinické rysy podporující dg při vstupním vyšetření

Reflexní synkopa

- Dlouhá anamnéza rekurencí, zvl do 40 let věku
- Synkopa po nepříjemných podnětech (bolest, vizuální)
- Prolongované stání
- Při jídle
- Vznik v přelidněných prostorech nebo horkém prostředí
- Autonomní projevy před synkopu (pocení, nausea)
- Při rotaci hlavy nebo tlaku na karotický sinus
- Chybění srdečního onemocnění

Klinické rysy podporující dg při vstupním vyšetření

Ortostatická hypotenze

- Vstoje nebo po postavení
- Prolongované stání
- Stání po cvičení
- Postprandiální hypotenze
- Časová koincidence se změnami podávání léků
- Přítomnost autonomní neuropatie nebo Parkinsonovy choroby

Klinické rysy podporující dg při vstupním vyšetření

Kardiální synkopa

- Během zátěže nebo vleže
- Náhlý začátek palpitací před synkopou
- RA nevysvětlené náhlé smrti
- Přítomnost strukturního postižení srdce nebo ICHS

- ECG findings suggesting arrhythmic syncope:
  - Bifascicular block (defined as either left or right BBB combined with left anterior or left posterior fascicular block)
  - Other intraventricular conduction abnormalities (QRS duration ≥0.12 s)
  - Mobitz I second-degree AV block and 1° degree AV block with markedly prolonged PR interval
  - Asymptomatic mild inappropriate sinus bradycardia (40–50 b.p.m.) or slow atrial fibrillation (40–50 b.p.m.) in the absence of negatively chronotropic medications
  - Non-sustained VT
  - Pre-excited QRS complexes
  - Long or short QT intervals
  - Early repolarization
  - ST-segment elevation with type 1 morphology in leads V1-V3 (Brugada pattern)
  - Negative T waves in right precordial leads, epsilon waves suggestive of ARVC
  - Left ventricular hypertrophy suggesting hypertrophic cardiomyopathy

EKG nálezy svědčící pro srdeční synkopu

Léčba synkopy na příjmovém odd

- 3 otázky
- Existuje závažné onemocnění, které lze dg na příjmovém oddělení?
- Jaké je riziko závažného průběhu?
- Má být pacient(ka) přijat(a) do nemocnice?

SYNCOPAL EVENT
Low-risk
• Associated with prodrome typical of reflex syncope (e.g. light-headedness, feeling of warmth, sweating, nausea, vomiting)[36,49] • After sudden unexpected unpleasant sight, sound, smell, or pain[36,49,50] • After prolonged standing or crowded, hot places[36] • During a meal or postprandial[51] • Triggered by cough, defaecation, or micturition[52] • With head rotation or pressure on carotid sinus (e.g. tumour, shaving, tight collars)[53] • Standing from supine/sitting position[54]
High-risk
Major
• New onset of chest discomfort, breathlessness, abdominal pain, or headache[26, 44, 55] • Syncope during exertion or when supine[36] • Sudden onset palpitation immediately followed by syncope[36]
Minor (high-risk only if associated with structural heart disease or abnormal ECG):
• No warning symptoms or short (<10 s) prodrome[36, 38, 49, 56] • Family history of SCD at young age[57] • Syncope in the sitting position[54]

PAST MEDICAL HISTORY

Low-risk

- Long history (years) of recurrent syncope with low-risk features with the same characteristics of the current episode[58]
- Absence of structural heart disease[27, 58]

High-risk

Major

- Severe structural or coronary artery disease (heart failure, low LVEF or previous myocardial infarction)[26, 27, 35, 55, 59]

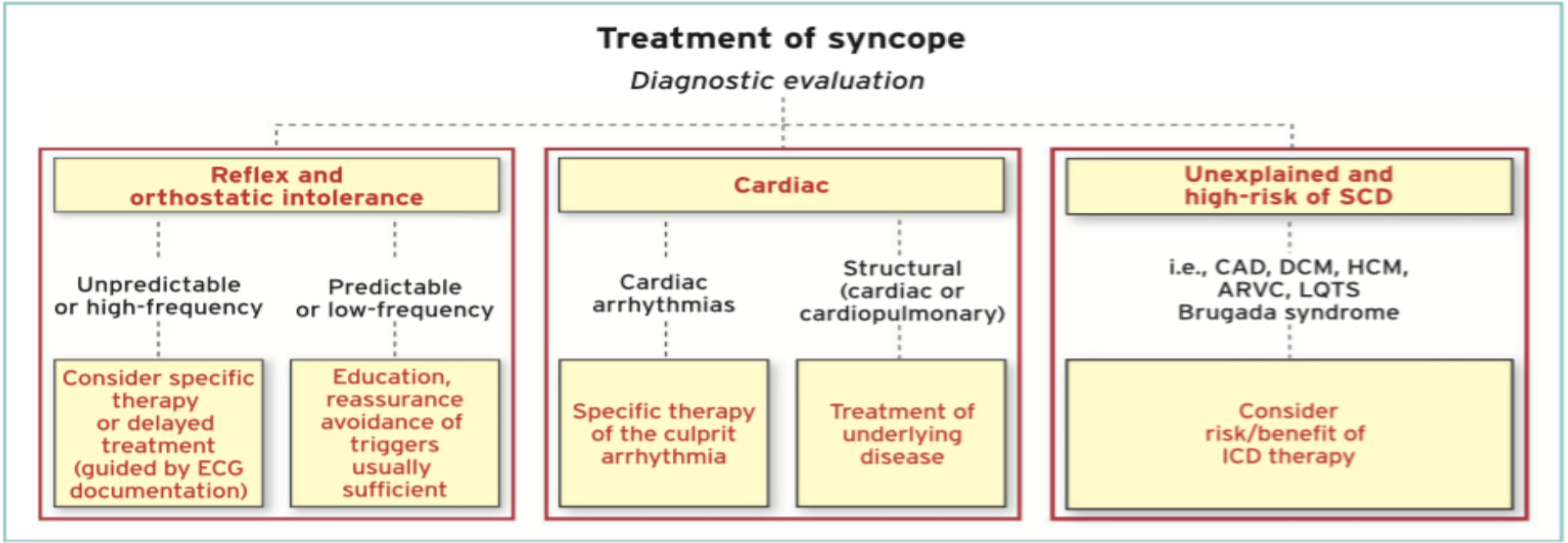
PHYSICAL EXAMINATION

Low-risk

- Normal examination

ECG[a]	
Low-risk	
• Normal ECG[26, 35, 36, 55]	
High-risk	
Major	**Minor** (high-risk only if history consistent with arrhythmic syncope)
• ECG changes consistent with acute ischaemia • Mobitz II second- and third-degree AV block • Slow AF (<40 b.p.m.) • Persistent sinus bradycardia (<40 b.p.m.), or repetitive sinoatrial block or sinus pauses >3 seconds in awake state and in absence of physical training • Bundle branch block, intraventricular conduction disturbance, ventricular hypertrophy, or Q waves consistent with ischaemic heart disease or cardiomyopathy[44, 56] • Sustained and non-sustained VT • Dysfunction of an implantable cardiac device (pacemaker or ICD) • Type 1 Brugada pattern • ST-segment elevation with type 1 morphology in leads V1–V3 (Brugada pattern) • QTc >460 ms in repeated 12-lead ECGs indicating LQTS[46]	• Mobitz I second-degree AV block and 1°degree AV block with markedly prolonged PR interval • Asymptomatic inappropriate mild sinus bradycardia (40–50 b.p.m.), or slow AF (40–50 b.p.m.)[56] • Paroxysmal SVT or atrial fibrillation[50] • Pre-excited QRS complex • Short QTc interval (≤340 ms)[46] • Atypical Brugada patterns[46] • Negative T waves in right precordial leads, epsilon waves suggestive of ARVC[46]

Synkopa- léčba



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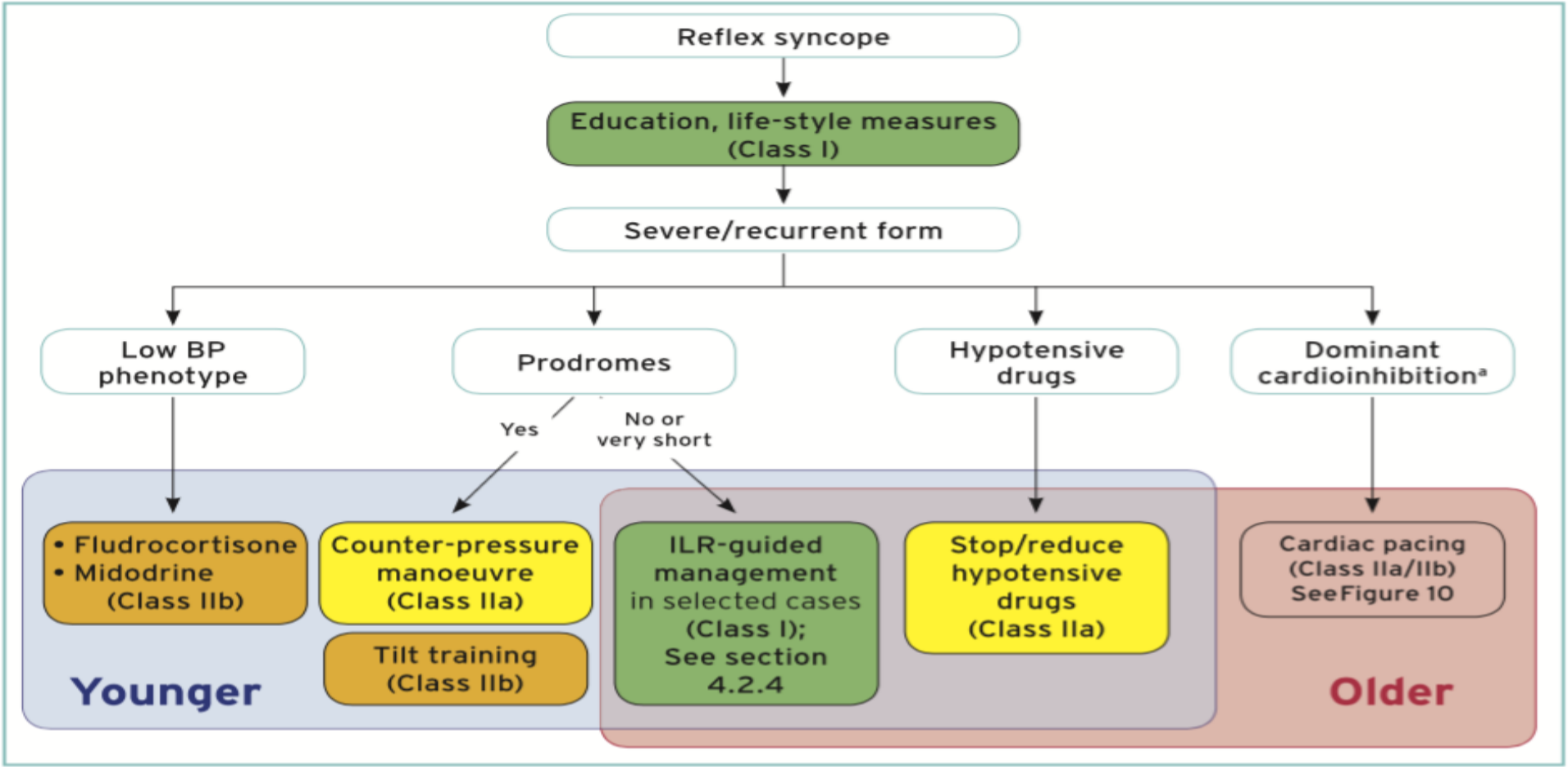

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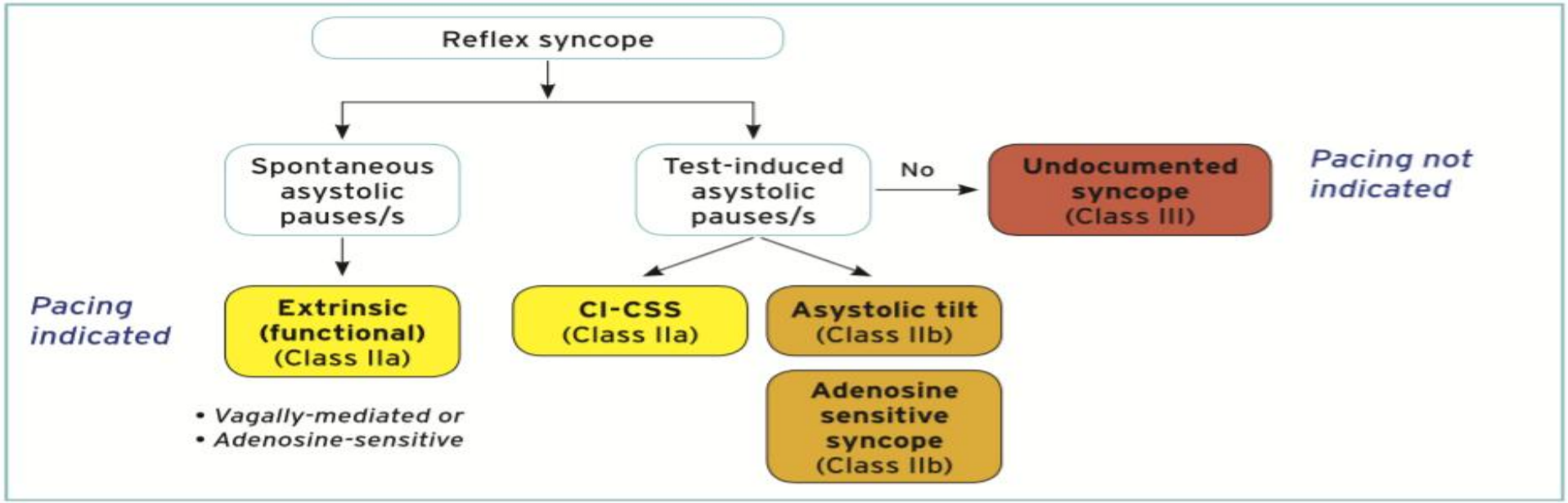
Kardiostimulace



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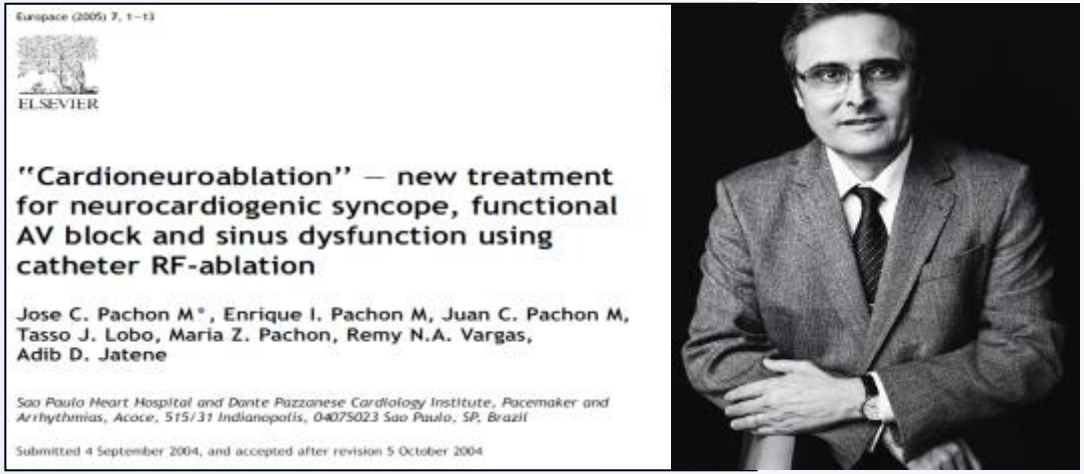
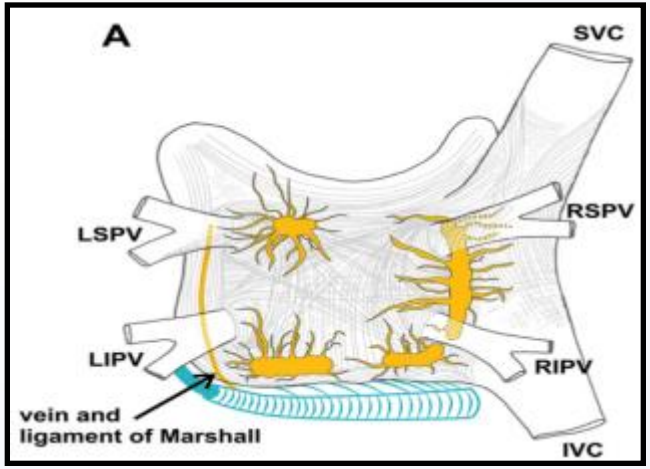
Recommendations	Class[a]	Level[b]
Education and lifestyle modifications		
Explanation of the diagnosis, the provision of reassurance, and explanation of the risk of recurrence and the avoidance of triggers and situations are indicated in all patients. *Supplementary Data Table 10*	I	B
Discontinuation/reduction of hypotensive therapy		
Modification or discontinuation of hypotensive drug regimen should be considered in patients with vasodepressor syncope, if possible.[260–262]	IIa	B
Physical manoeuvres		
Isometric PCM should be considered in patients with prodromes who are <60 years of age.[119–121,263,264]	IIa	B
Tilt training may be considered for the education of young patients.[265–272]	IIb	B
Pharmacological therapy		
Fludrocortisone may be considered in young patients with the orthostatic form of VVS, low–normal values of arterial BP, and the absence of contraindication to the drug.[275]	IIb	B
Midodrine may be considered in patients with the orthostatic form of VVS.[278]	IIb	B
Beta-adrenergic blocking drugs are not indicated.[279,280]	III	A
Cardiac pacing		
Cardiac pacing should be considered to reduce syncopal recurrences in patients aged >40 years, with spontaneous documented symptomatic asystolic pause(s) >3 s or asymptomatic pause(s) >6 s due to sinus arrest, AV block, or the combination of the two.[184,185,200,292]	IIa	B
Cardiac pacing should be considered to reduce syncope recurrence in patients with cardioinhibitory carotid sinus syndrome who are >40 years with recurrent frequent unpredictable syncope.[90,292,293]	IIa	B
Cardiac pacing may be considered to reduce syncope recurrences in patients with tilt-induced asystolic response who are >40 years with recurrent frequent unpredictable syncope.[292,297,298,303]	IIb	B
Cardiac pacing may be considered to reduce syncope recurrences in patients with the clinical features of adenosine-sensitive syncope.[5,227,286]	IIb	B
Cardiac pacing is not indicated in the absence of a documented cardioinhibitory reflex.[299,300]	III	B

Sporné body?

V Guidelines nebyla ani zmínka o metodě kardioneuroablace...

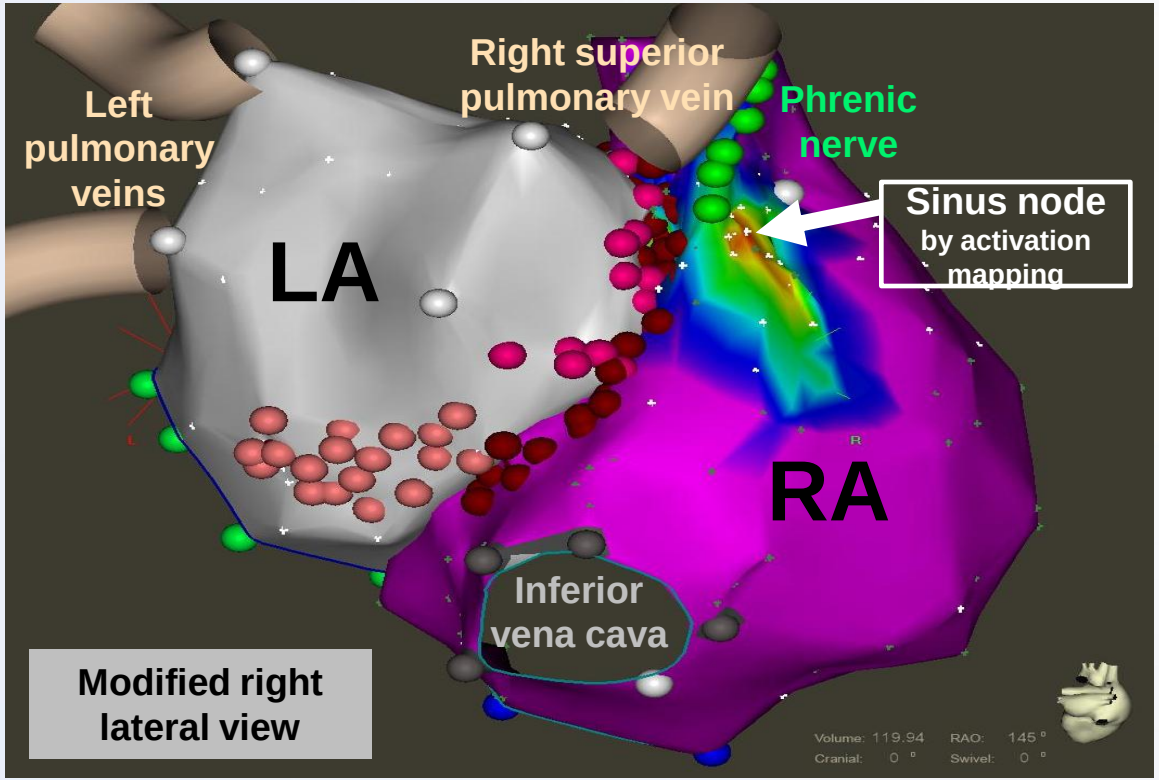


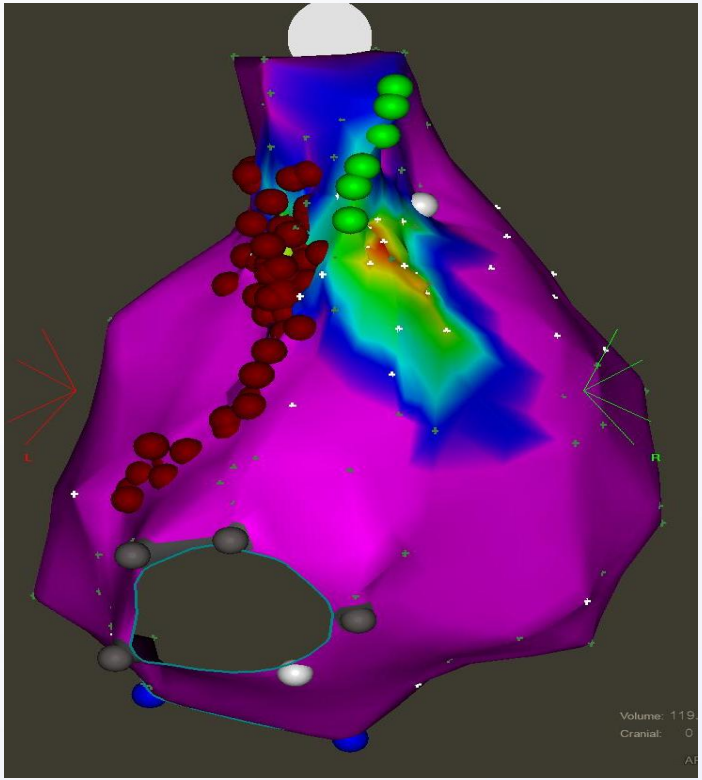


Podímnkou je zachovaná odpověď SN na atropin

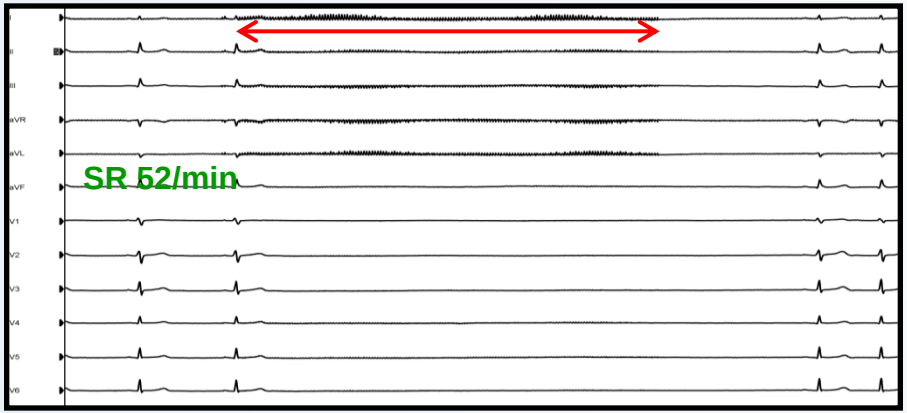
TF po atropinu 2 mg i.v. >90/min (vzestup >25%)

Pachon JC et al. Europace 2005;7:1-13


Left pulmonary veins
Right superior pulmonary vein
Phrenic nerve
Sinus node by activation mapping
LA
RA
Inferior vena cava
Modified right lateral view
Volume: 119.94
RAO: 145 °
Cranial: 0 °
Swivel: 0 °



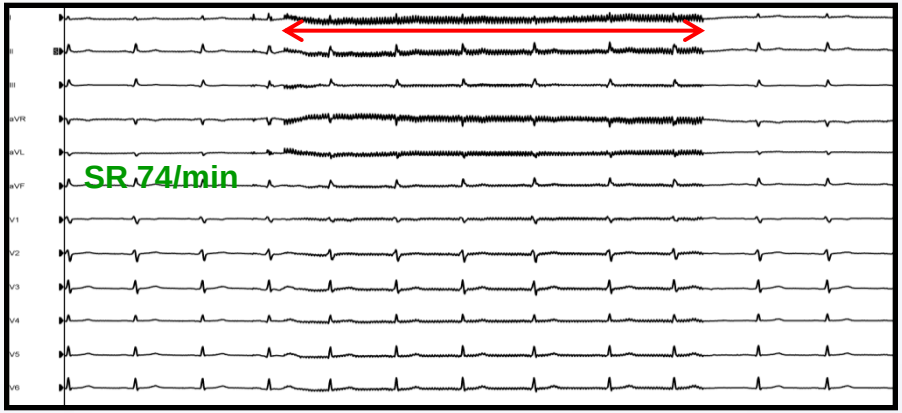
Prior to ablation



Wenckebach point: 115/min

Atropine test: positive

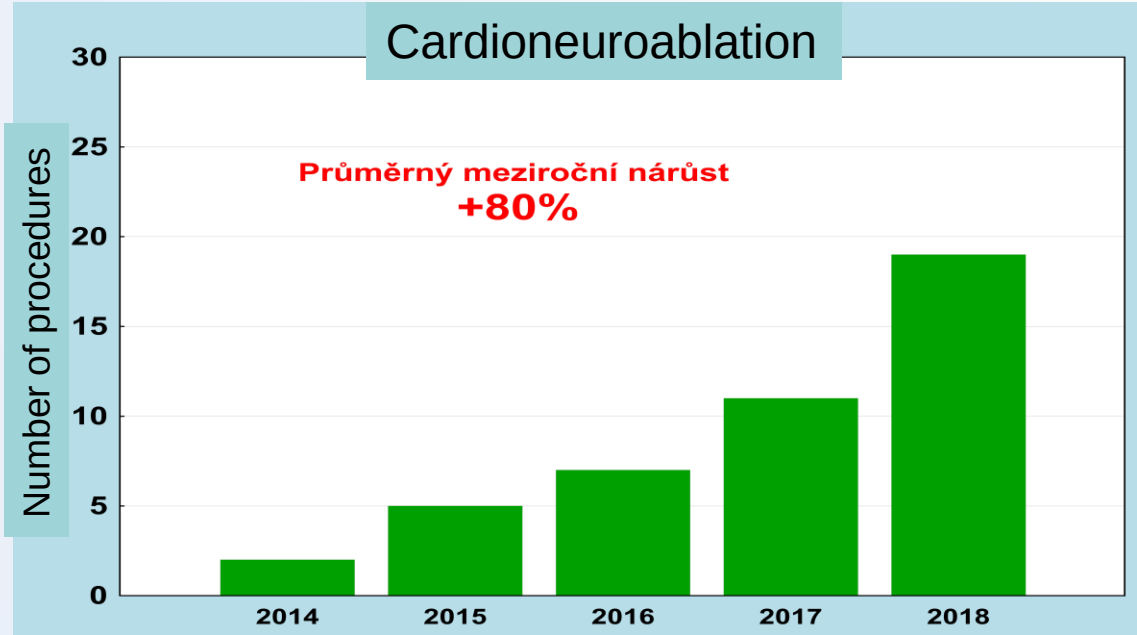
After ablation



Wenckebach point: 135/min

Atropine test: negative

Cardioneuroablation (IKEM 2014-2018)



45 ablations in 41 patients

Czech Republic 2016

- 6995 PM primoimplants
- cca 2.5% (N ≈ 175) in the age below 40 years

ESC 2018 guidelines

Ganglionic plexus ablation. Radiofrequency ablation of vagal ganglia located close to the sinus node and AV node was reported to abolish the vagal efferent output during VVS in some observational studies and case reports.[290,291] However, owing to a weak rationale, small populations, weak documentation of follow-up results, procedural risks, and lack of control groups, the current evidence is insufficient to confirm the efficacy of vagal ganglia ablation.

Brignole M et al. Eur Heart J 2018.
doi: 10.1093/eurheartj/ehy037

ACC/AHA/HRS 2017 guidelines

5. REFLEX CONDITIONS: RECOMMENDATIONS

5.1. Vasovagal Syncope: Recommendations

VVS is the most common cause of syncope and a frequent reason for ED visits.[66] The underlying pathophysiology of VVS results from a reflex causing hypotension and bradycardia, triggered by prolonged standing or exposure to emotional stress, pain, or medical procedures.[361–365] An episode of VVS is typically associated with a prodrome of diaphoresis, warmth, and pallor, with fatigue after the event. Given the benign nature of VVS and its frequent remissions, medical treatment is usually not required unless conservative measures are unsatisfactory. In some patients, effective treatment is needed, as syncopal events may result in injury and an impaired quality of life (QoL).[366–368] Despite the need and substantial efforts by investigators, there are limited evidence-based therapeutic options.[369] Preliminary data from cardiac ganglia plexi ablation in treating selected patients with VVS are encouraging but still insufficient to make recommendations at this time.[370–372] See Figure 4 for the algorithm for treatment of VVS.

Shen WK et al. Circulation 2017; 136(5):e60-e122

Závěry

- Stručná verze guidelines vyjde v češtině v Cor et Vasa
- ESC guidelines jsou zbytečně dlouhé (69 stran)
- První část věnovaná klasifikaci, etiopatogeneze, vyšetřovacím postupum, atd je výborná
- Druhá část věnovaná léčbě je problematická z mnoha důvodů
  - Diskutují různé léky, které byly zkoušeny a přitom zcela pomíjí možnost kardioneuroablace
  - Betablokátory staví do skupiny III – KI (na zákla studie POST s 200 pts, téměř 1/3 přrušila v každé větvi)
  - Zbytečně se věnují problematice stratifikace rizika NSS u nemocných se strukturním postiýžením nebo kanálopatiemi