

Brugada syndrom k implantaci ICD?

Rostislav Polášek



Krajská nemocnice Liberec, a.s.
nemocnice Liberec nemocnice Turnov

Muž

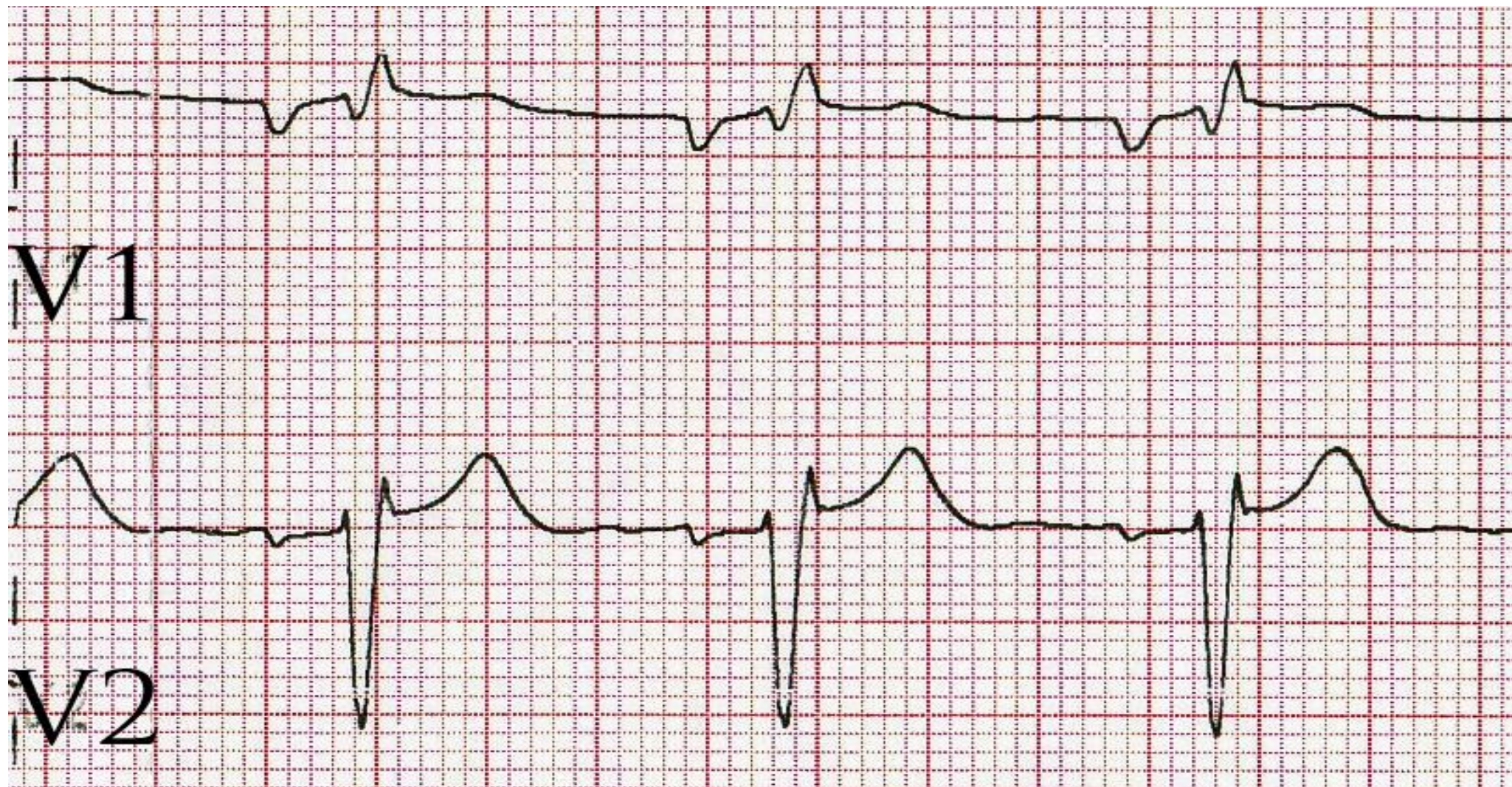
36 let

bez interní anamnézy

negativní RA

2x synkopa při sportu



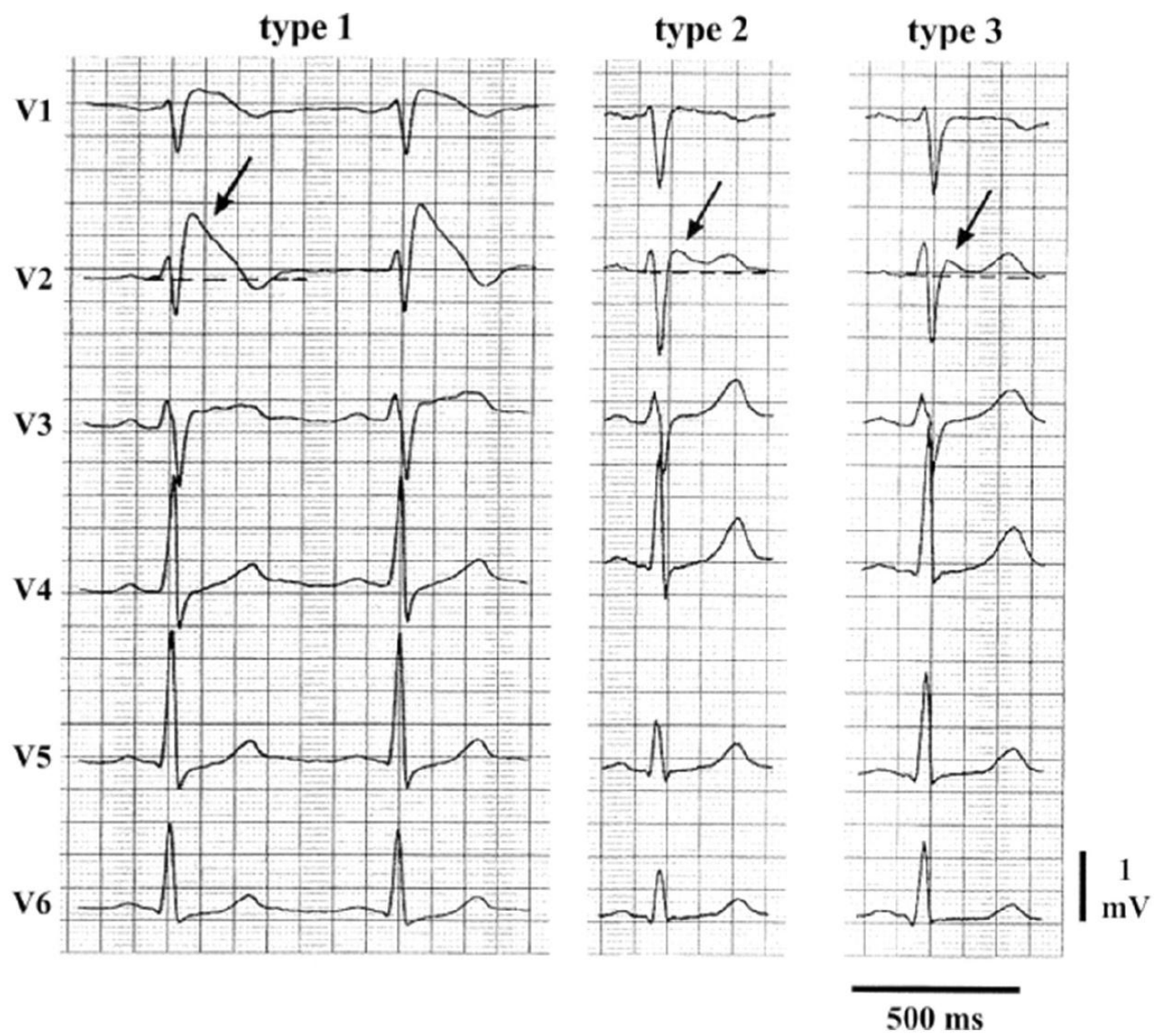


Otázka 1: jedná se o Brugada syndrom?

1. Typ 1
2. Typ 2
3. Nejedná se o Brugada syndrom
4. Nelze rozhodnout

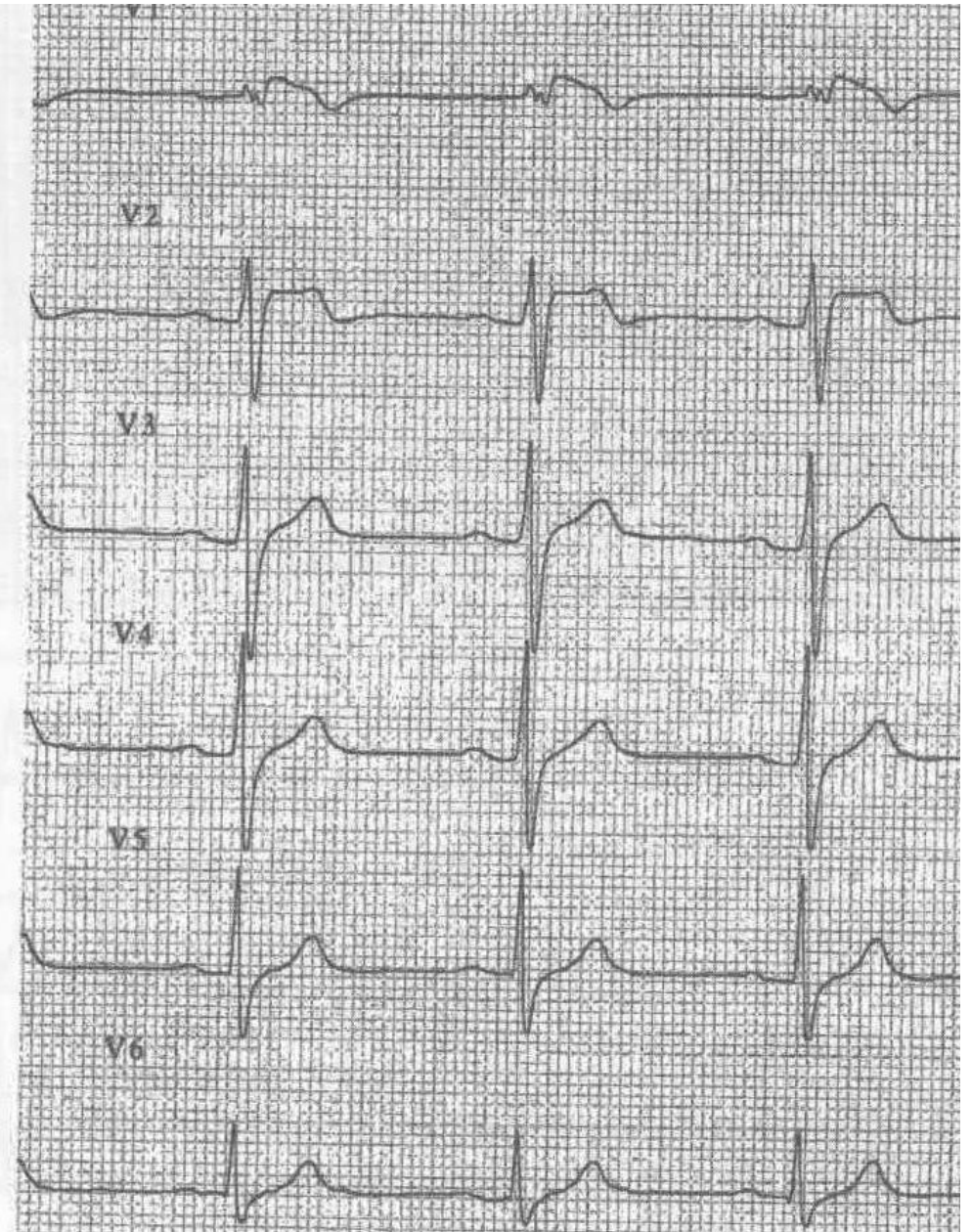
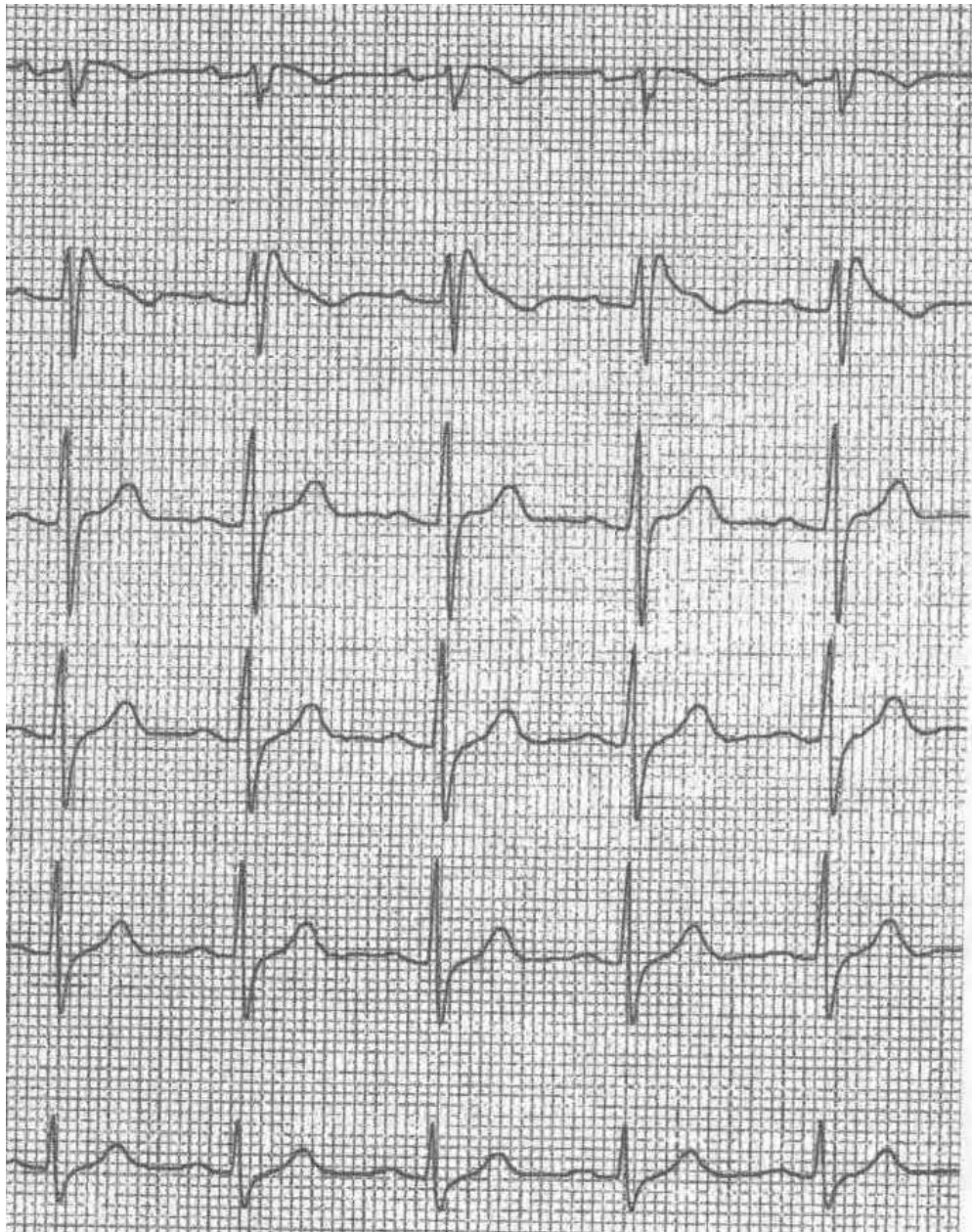
Brugada syndrom

- Autosomálně dominantní - defekt Na kanál
- Zvýšené riziko NS (VT/VF)
- 3% všech NS, 20% NS u strukturálně normálního srdce
 - Spontánní Ekg typ 1
 - Positivní PSK
 - RA
- v Evropě velmi vzácné



Brugada syndrom

- Dg. – Ekg typ 1
- Ekg obraz variabilní – tonus parasymptatiku, horečka, léky
- Typ 2 a 3 – nízká specifita, Brugada like Ekg často u sportovců – iRBBB + časná repolarizace



Vyšetření

ECHO, SKG

MRi srdce, ergometrie

Programovaná stimulace komor

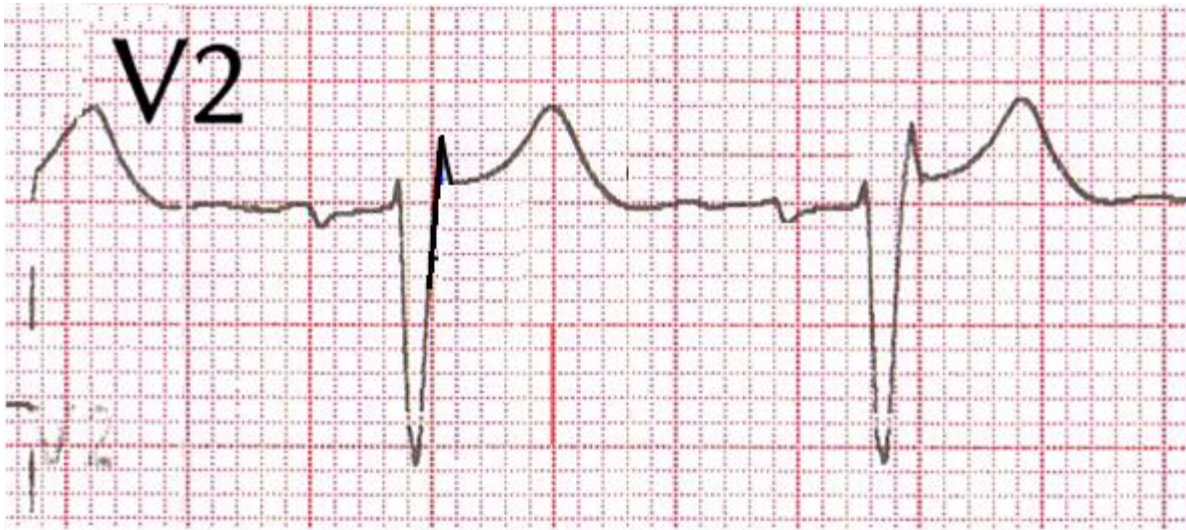
Ajmalínový test

Otázka 1: jedná se o Brugada syndrom?

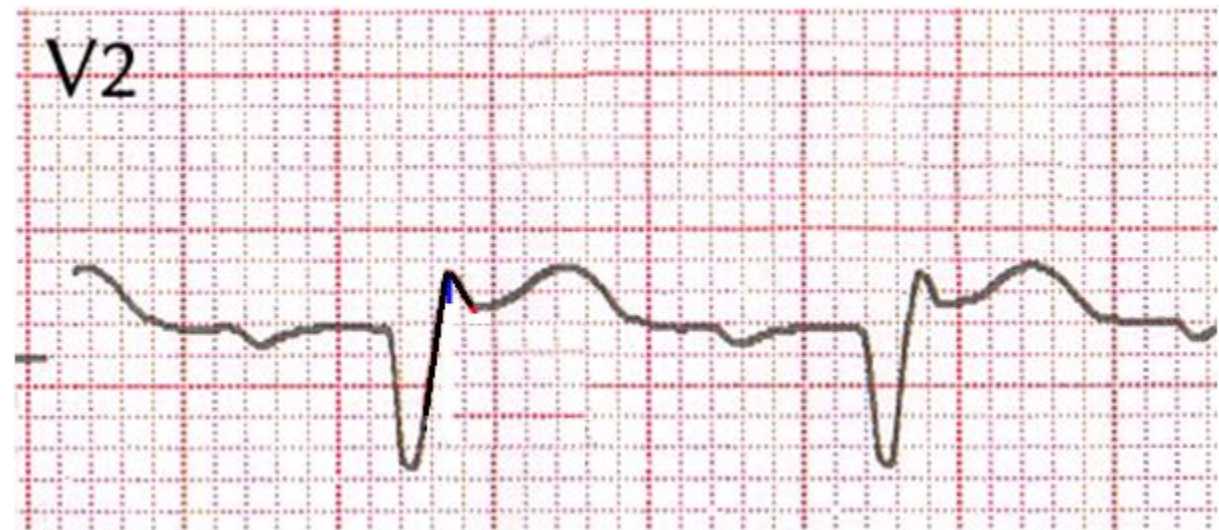
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Test s AA

Baseline

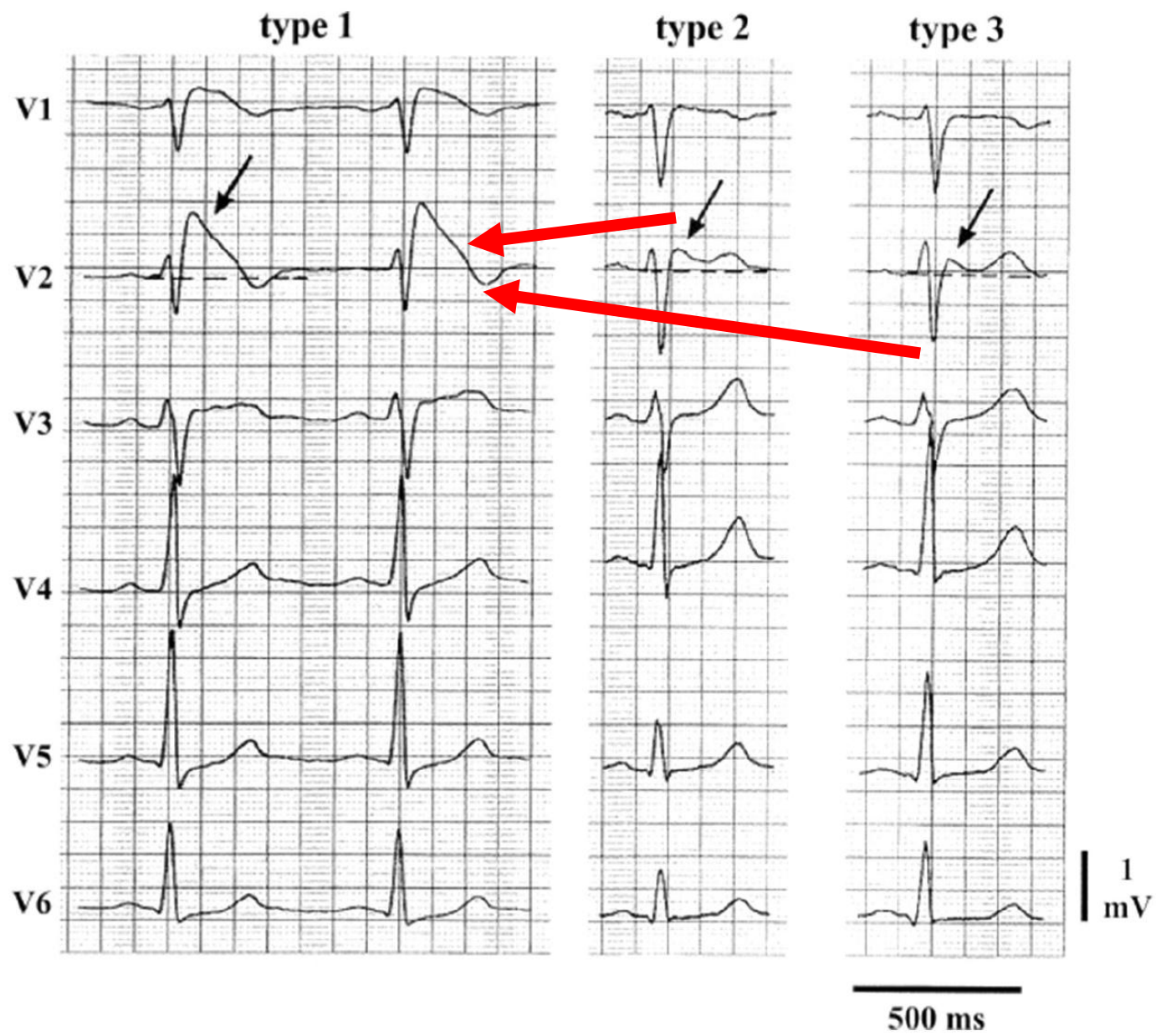


Ajmalín 75mg



Otázka 2: Ajmalinový test

1. Positivní
2. Negativní



Otázka 2: Ajmalinový test

1. Positivní

2. Negativní

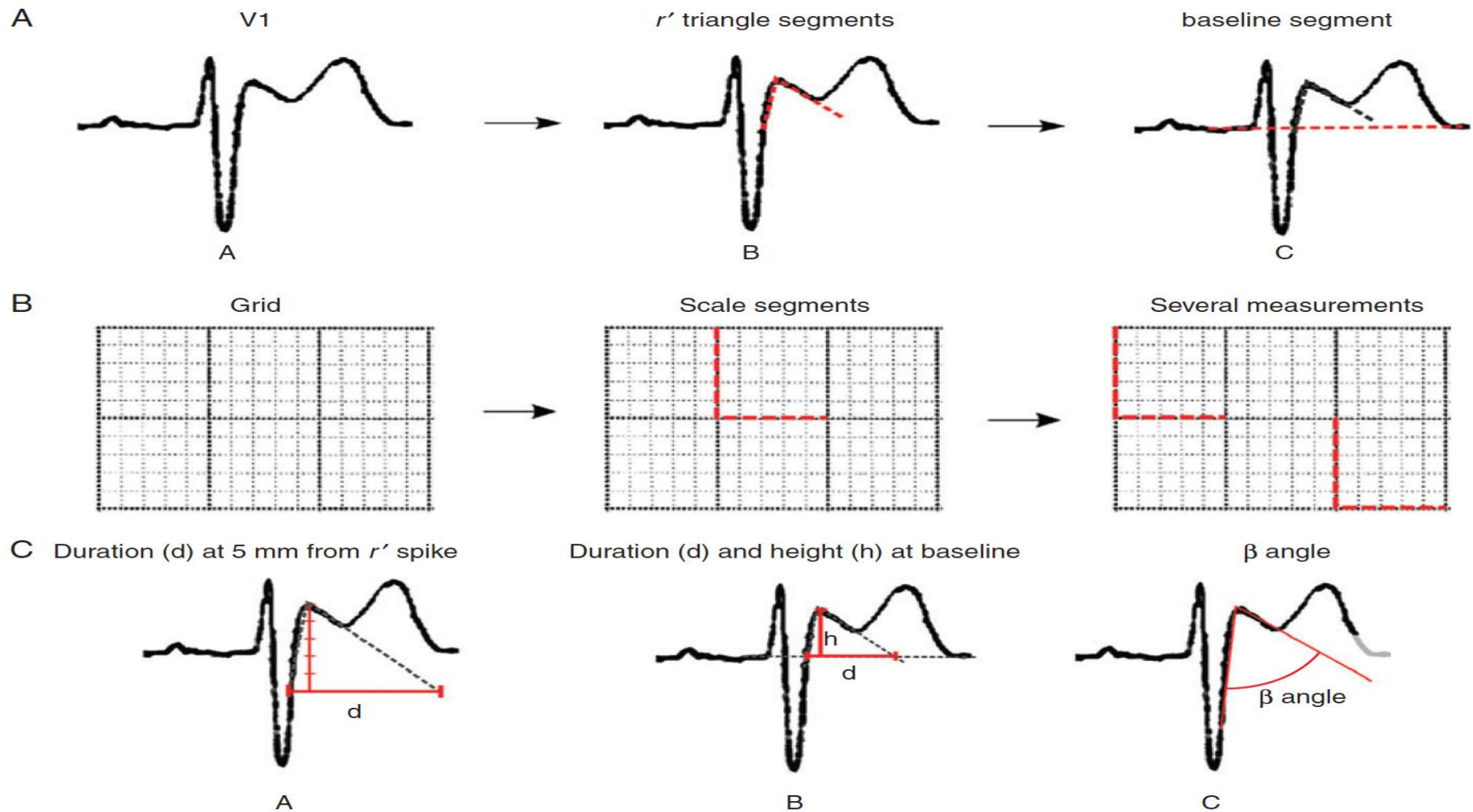
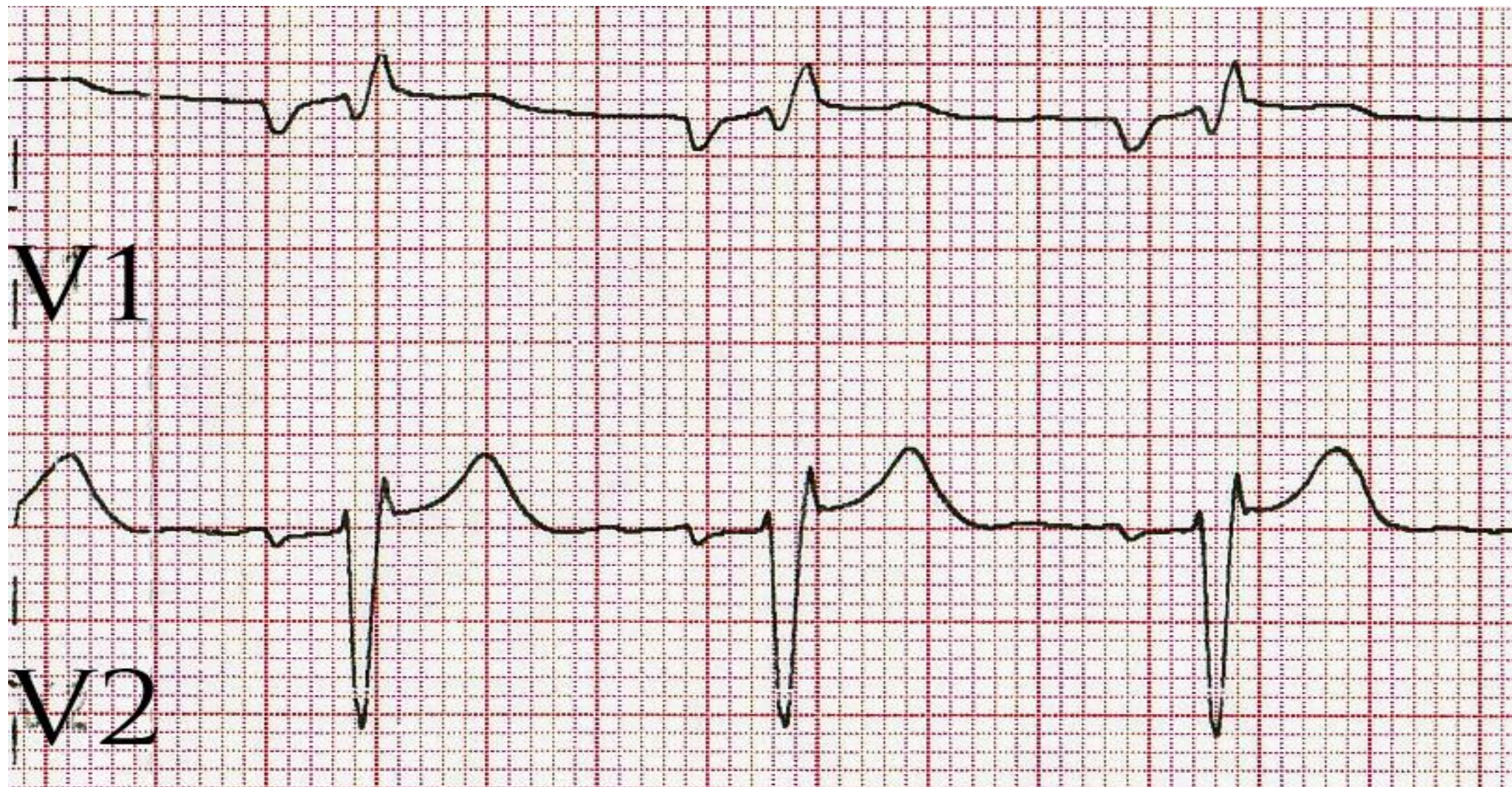


Figure 1 (A) Segment location performed by the observers. (A) Original signal. (B) Segment location at upslope and downslope of r' -wave. (C) Segment location at the isoelectric line. (B) Segment location for scale measurement from the original grid—vertical and horizontal segment locations following 5 mm² grid. (C) Measurements extracted from located segments by the analysts—(A) the duration of the base of the triangle at 0.5 mV from r' -wave high take-off, (B) Height and duration of the triangle at the isoelectric line, (C) angle from S wave upslope and r' downslope (β angle).



Otázka 3: jak postupovat

1. Implantovat ICD
2. Omezit kompetitivní sport
3. Sledovat, ponechat bez omezení
4. Jiná

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10/2006
2X SYNKOPA
PŘI SPORTU

11/2006
ECHO, SKG, MRI,
AJMALÍNOVÝ TEST,
PROGRAMOVANÁ
STIMULACE KOMOR

4/2013
SYNKOPA + OTŘES
MOZKU
2. AJMALÍNOVÝ
TEST

4/2013
IMPLANTACE
REVEAL LOOP
RECORDERU



Synkopa s vysokým rizikem - anamnesa

- Okolnosti synkopy – orthostasa/ emoční/ mikční/ vleže/ námahová
- Prodromy – aura/ nausea/ pocení/ palpitace
- Přítomnost organického on. srdce – ICHS/ IM/ srdeční selhání/ dušnost/ bolesti na hrudi
- Riziko NS – RA
- Léky – antihypertensiva/ diuretika/ antidepresiva/ AA/ Kalium šetřící léky/ Digoxin

- Persistent bradycardia (<40 b.p.m.) in awake state and in absence of physical training
- Undiagnosed systolic murmur⁶⁰

ECG*

Low-risk

- Normal ECG^{26, 35, 36, 55}

High-risk

Major

- 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 LQTS⁴⁶

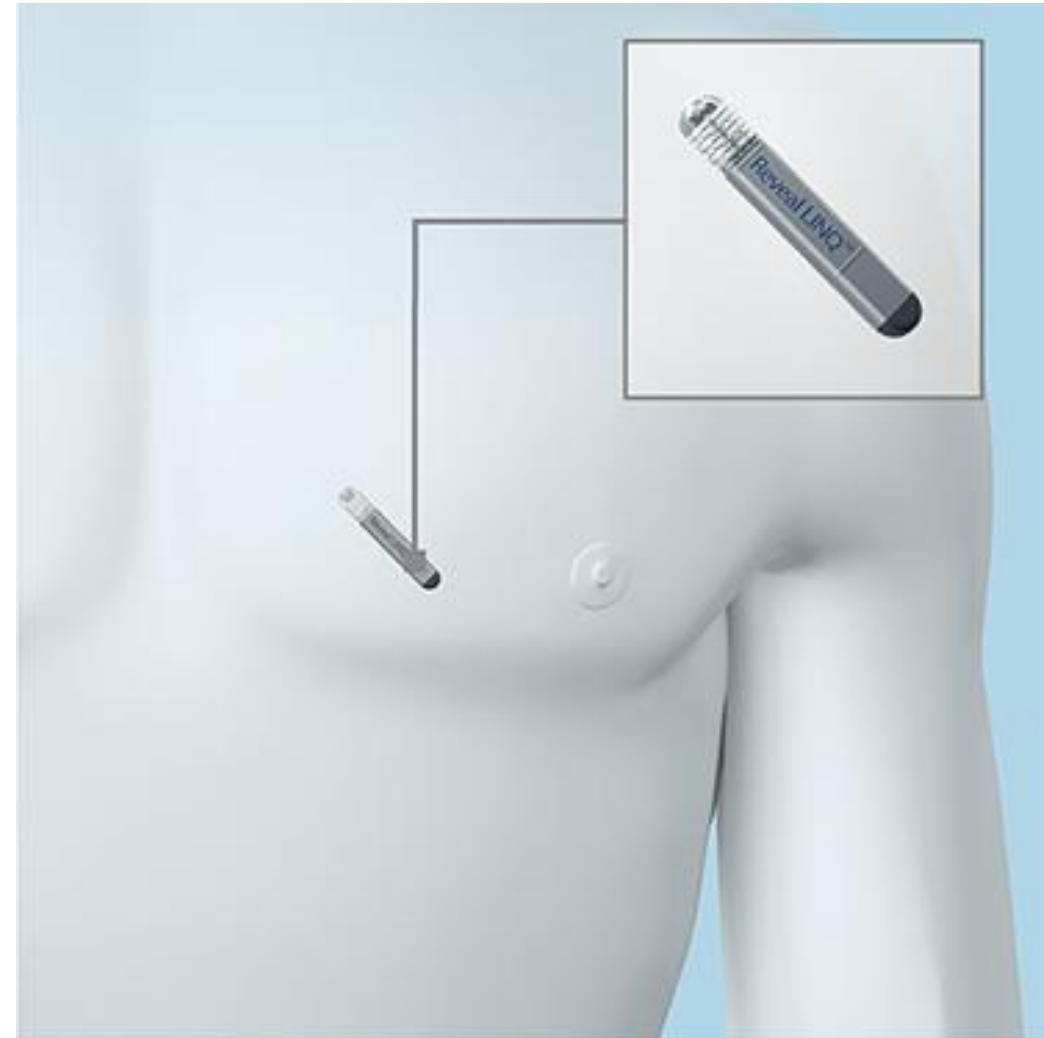
Minor (high-risk only if history consistent with arrhythmic syncope)

- Mobitz I second-degree AV block and 1^odegree 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 fibrillation⁵⁰
- Pre-excited QRS complex
- Short QTc interval (<340 ms)⁴⁶
- Atypical Brugada patterns⁴⁶
- Negative T waves in right precordial leads, epsilon waves suggestive of ARVC⁴⁶

Recommendations	Class ^a	Level ^b
Indications		
Immediate in-hospital monitoring (in bed or by telemetry) is indicated in high-risk patients (defined in Table 6).	I	C
Holter monitoring should be considered in patients who have frequent syncope or presyncope (≥ 1 episode per week). ¹⁶¹	IIa	B
External loop recorders should be considered, early after the index event, in patients who have an inter-symptom interval ≤ 4 weeks. ^{162,166,168,201}	IIa	B
ILR is indicated in an early phase of evaluation in patients with recurrent syncope of uncertain origin, absence of high-risk criteria (listed in Table 6), and a high likelihood of recurrence within the battery life of the device. ^{175,176,181–184,202} Supplementary Data Table 5	I	A
ILR is indicated in patients with high-risk criteria (listed in Table 6) in whom a comprehensive evaluation did not demonstrate a cause of syncope or lead to a specific treatment, and who do not have conventional indications for primary prevention ICD or pacemaker indication. ^{174,180,187,188,195} , Supplementary Data Tables 5 and 6	I	A
ILR should be considered in patients with suspected or certain reflex syncope presenting with frequent or severe syncopal episodes. ^{184–186}	IIa	B
ILR may be considered in patients in whom epilepsy was suspected but the treatment has proven ineffective. ^{137,189–191} , Supplementary Data Table 7	IIb	B
ILR may be considered in patients with unexplained falls. ^{191–194} , Supplementary Data Table 8	IIb	B
Diagnostic criteria		
Arrhythmic syncope is confirmed when a correlation between syncope and an arrhythmia (bradyarrhythmia or tachyarrhythmia) is detected. ^{172,184–186,188,200}	I	B
In the absence of syncope, arrhythmic syncope should be considered likely when periods of Mobitz II second- or third-degree AV block or a ventricular pause >3 s (with the possible exception of young trained persons, during sleep or rate-controlled atrial fibrillation), or rapid prolonged paroxysmal SVT or VT are detected. ^{185,188,197–199}	IIa	C

ESC Guidelines Syncope 2018

- “initial implantation of an ILR in the workup provided a 3.7 [95% confidence interval (CI) 2.7–5.0] increased relative probability of a diagnosis compared with the conventional strategy”
- Implantace ICD v prim. prevenci u Brugada syndromu (2) se řídí korelací synkopy a průkazem arytmie (ILR)



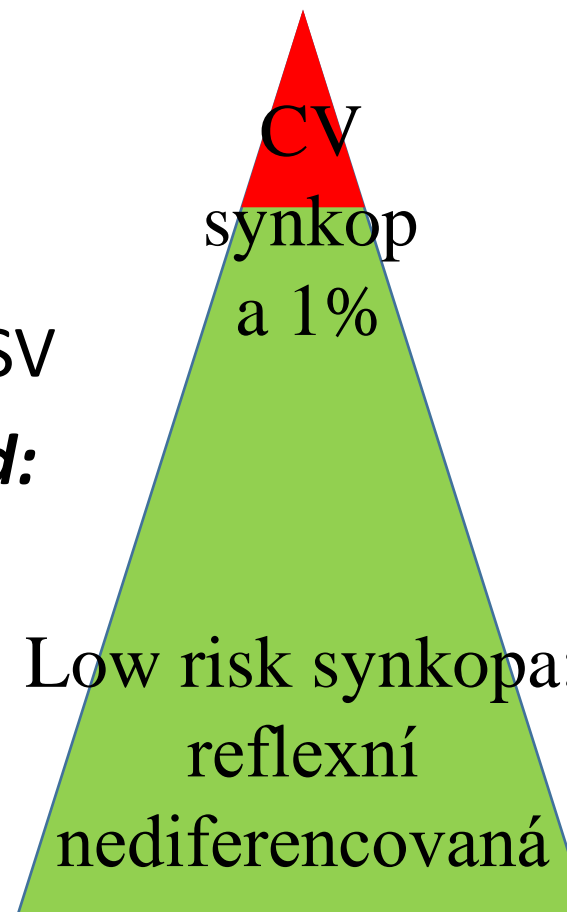
Synkopa u mladého jedince

Je benigní jestliže:

- Ekg je normální
- RA NS je negativní
- Netrpí strukturálním on. srdce, VSV

a nevyžaduje další vyšetření pokud:

- Není častá
- nejsou zranění
- není profesním rizikem



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4/2014
SETRVALÁ VT
INDIKACE K ICD
NEGATIVNÍ REVERS

8/2014
NÁHLÁ
SMRT

Závěr

- Nejedná se o Brugada syndrom
- Ale synkopa s vysokým rizikem – anamnesa, Ekg
- Indikace k implantaci ILR I/A – identifikace sVT
- Implantace ICD je indikována