# Place de l'EEP dans le diagnostic des syncopes

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ISCAT 2018


ESC European Society of Cardiology

European Heart Journal (2018) **39**, 1883–1948
doi:10.1093/eurheartj/ehy037

ESC GUIDELINES

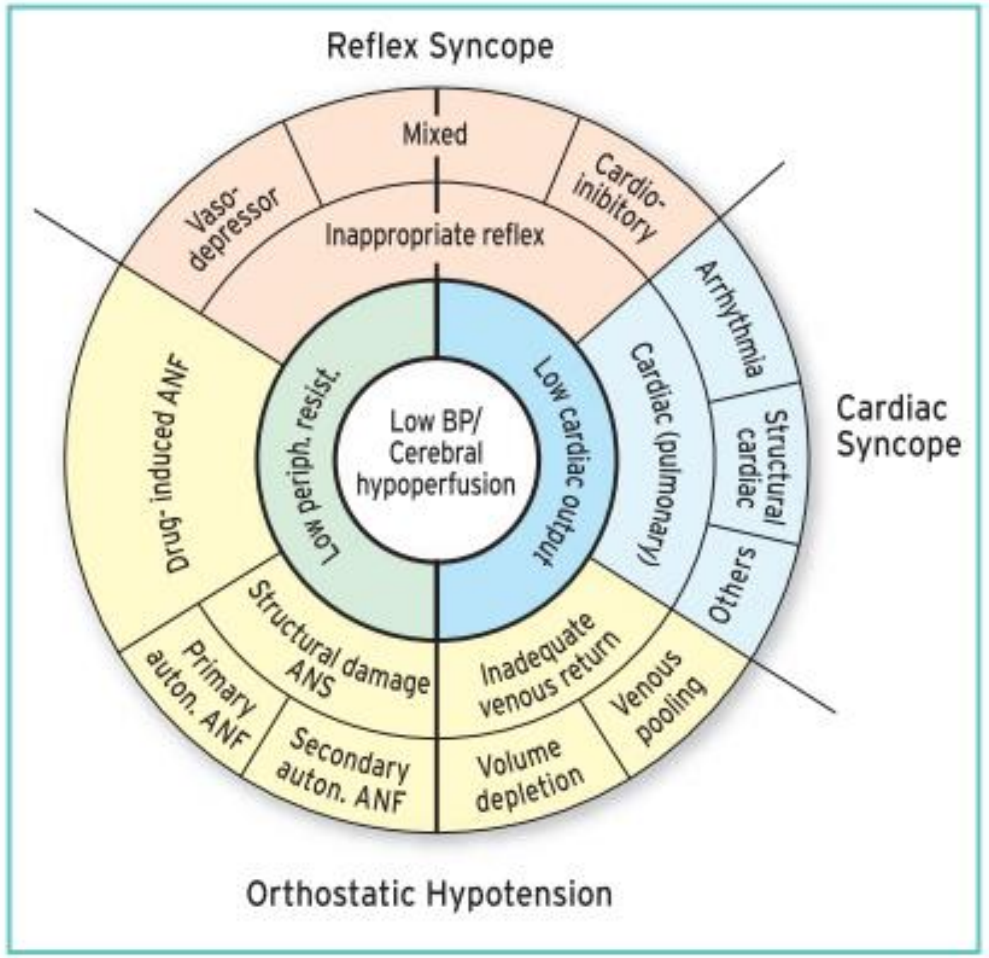
# 2018 ESC Guidelines for the diagnosis and management of syncope

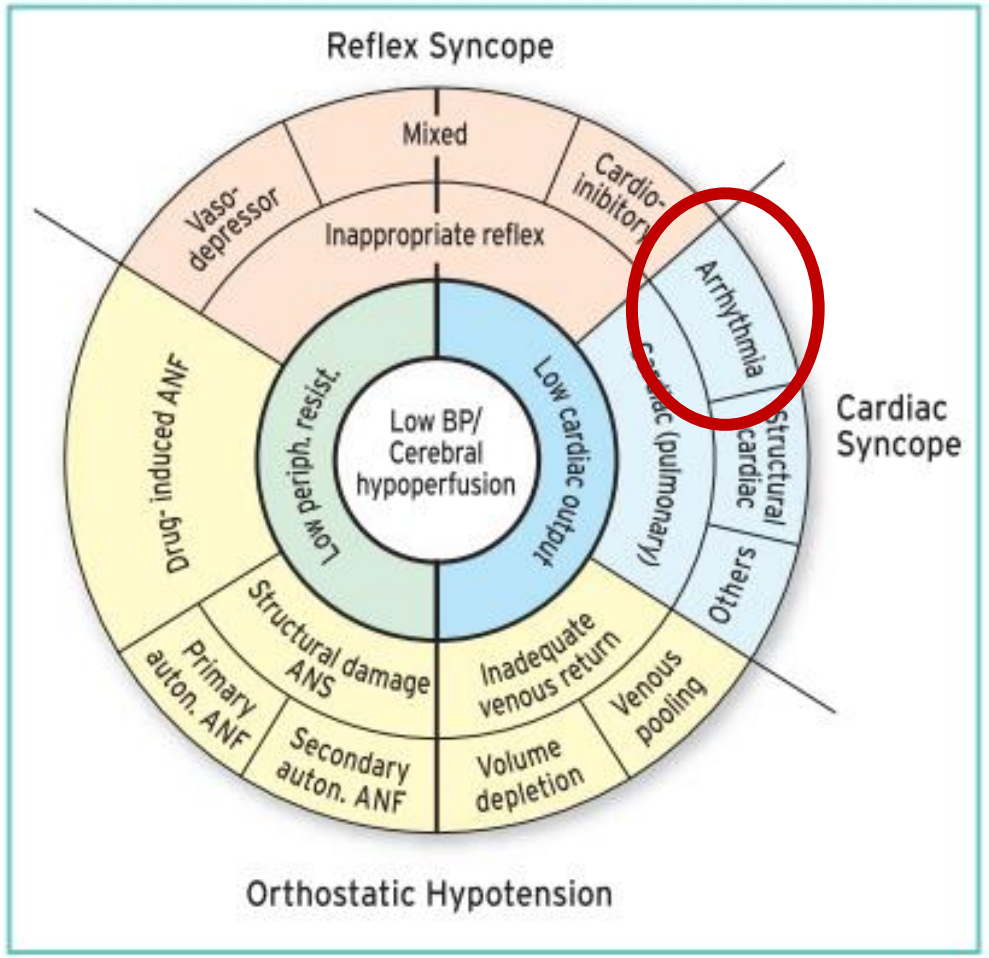
## The Task Force for the diagnosis and management of syncope of the European Society of Cardiology (ESC)

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

# Perte de conscience transitoire

- Due à une hypoperfusion cérébrale
- De début brutal
- De courte durée
- Avec récupération spontanée


Reflex Syncope
Mixed
Vaso-depressor
Cardio-inibitory
Inappropriate reflex
Arrhythmia
Structural cardiac
Others
Cardiac (pulmonary)
Low periph. resist.
Low cardiac output
Low BP/ Cerebral hypoperfusion
Drug- induced ANF
Cardiac Syncope
Structural damage ANS
Primary auton. ANF
Secondary auton. ANF
Inadequate venous return
Volume depletion
Venous pooling
Orthostatic Hypotension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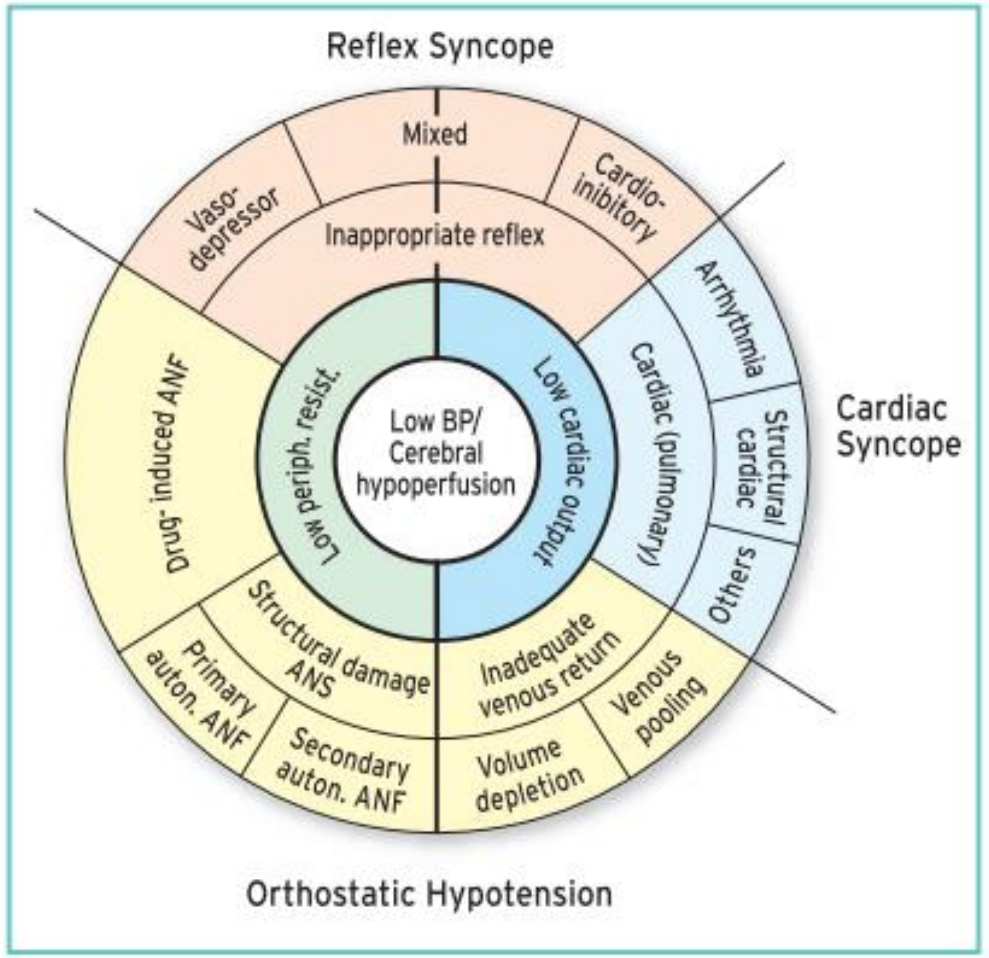
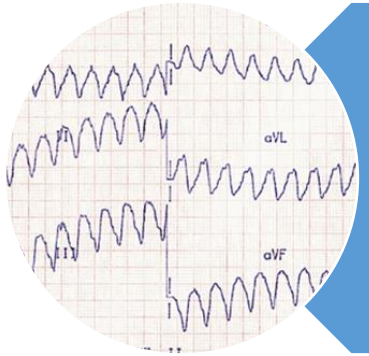
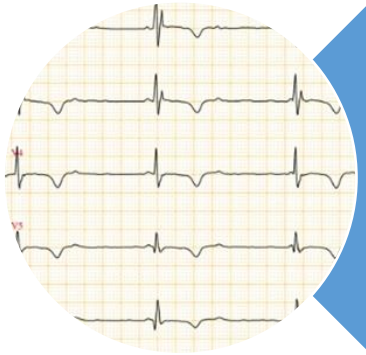



## Tachycardie

Supraventriculaire

Ventriculaire



## Bradycardie

Dysfonction sinusale

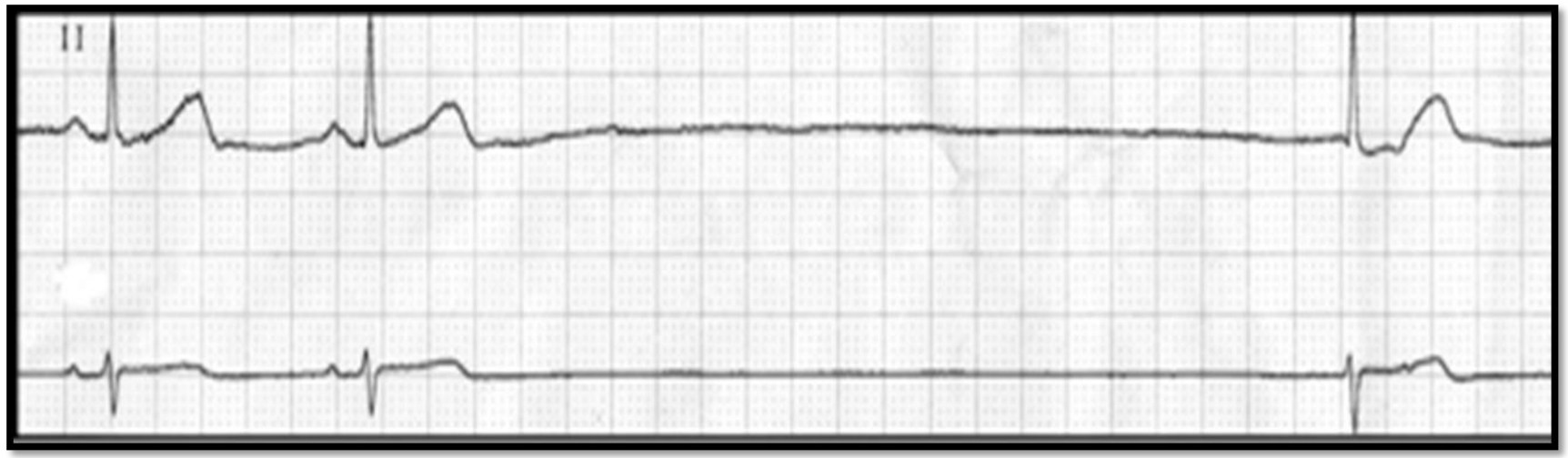
Troubles de conduction atrio ventriculaire

# Etapes diagnostiques d'une syncope

- Interrogatoire « policier »
- Examen clinique et prise de TA debout et couché
- ECG
- Surveillance scopée si éléments en faveur d'une arythmie
- ETT si éléments en faveur d'une cardiopathie
- Massage du sinus carotidien si patient de plus de 40 ans

# Critères ECG associés à haut risque de syncope d'origine rythmique

- Bradycardie < 40 bpm ou pauses > 3 s en éveil



# Critères ECG associés à haut risque de syncope d'origine rythmique

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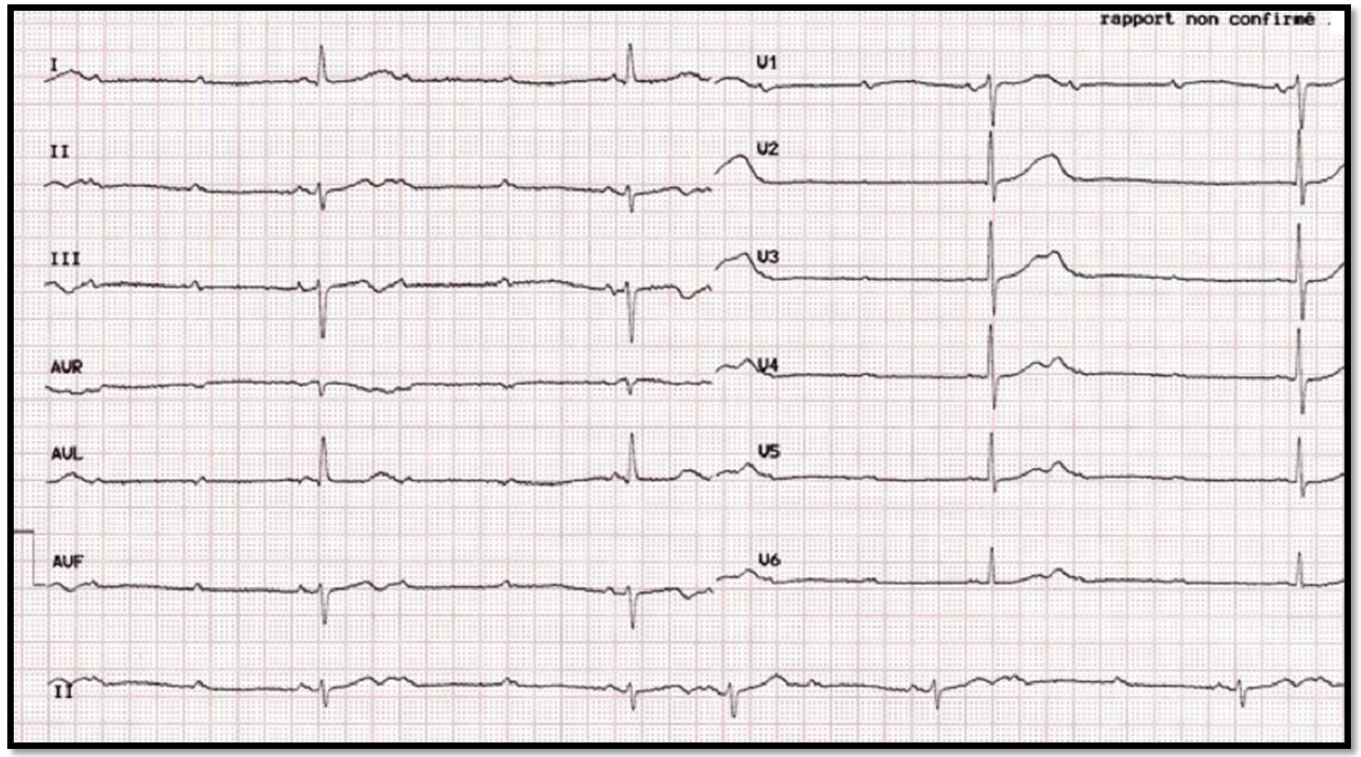

# Critères ECG associés à haut risque de syncope d'origine rythmique

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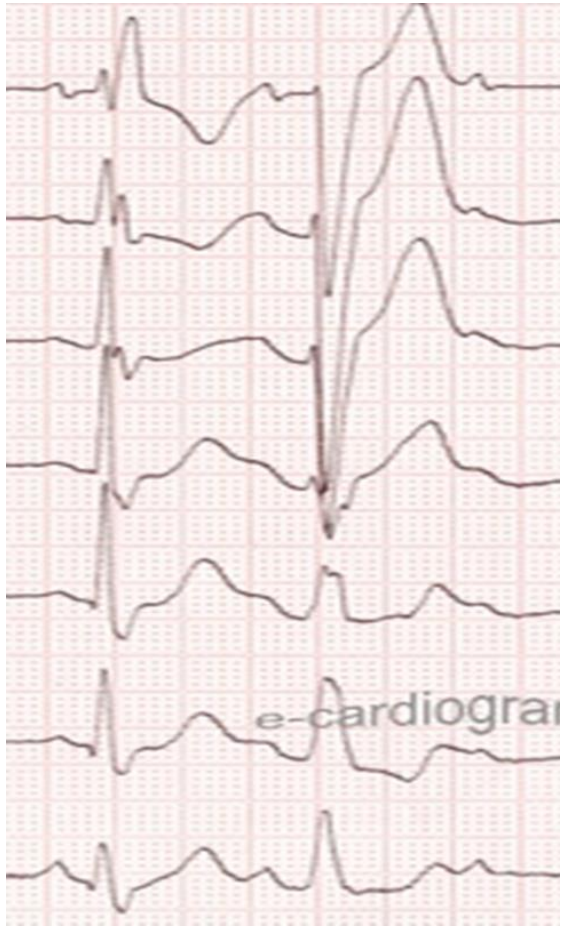
- Bloc de branche alternant



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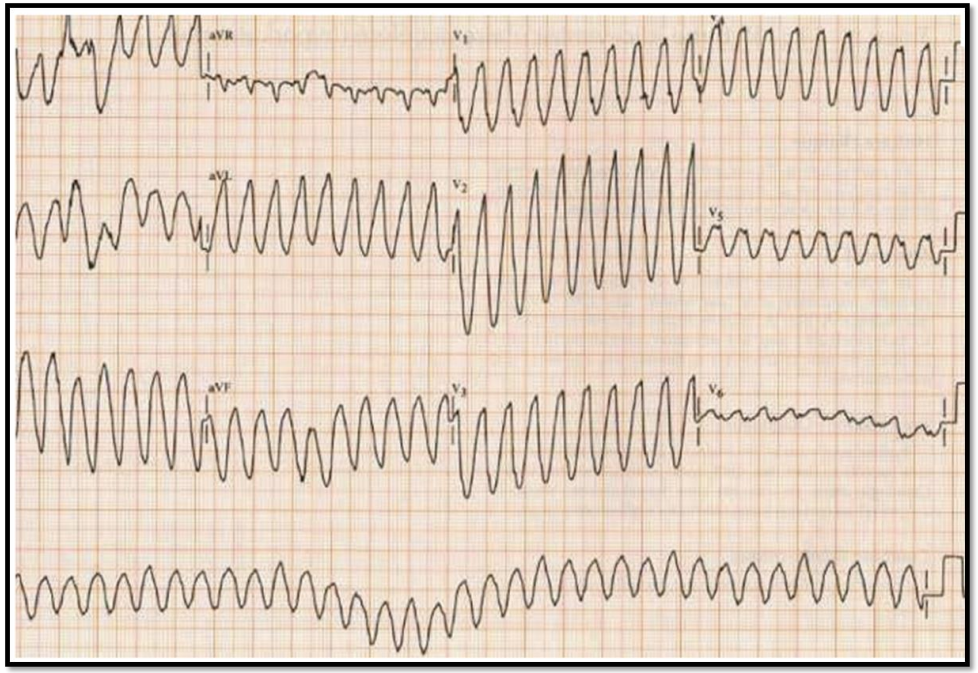
- TV ou TSV rapide



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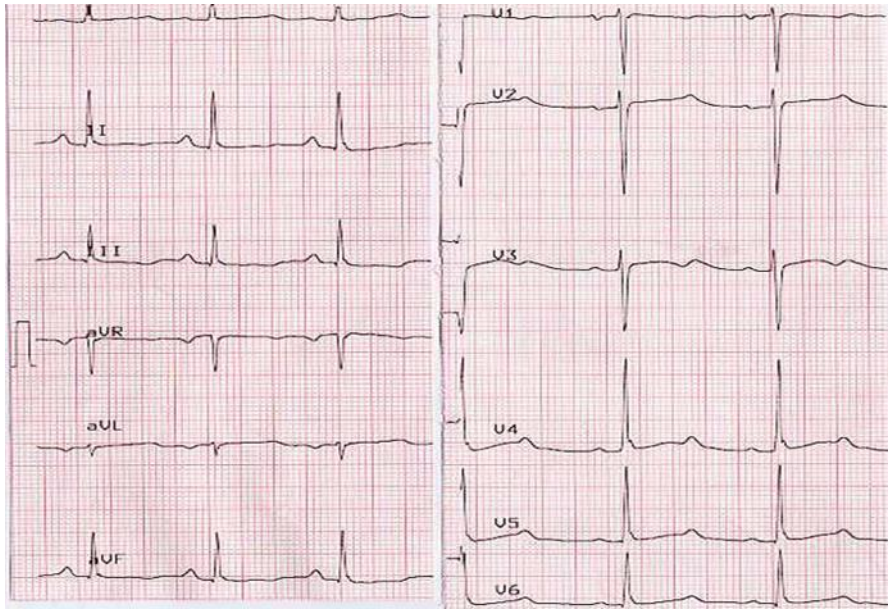
- TV polymorphe ou QT long ou court



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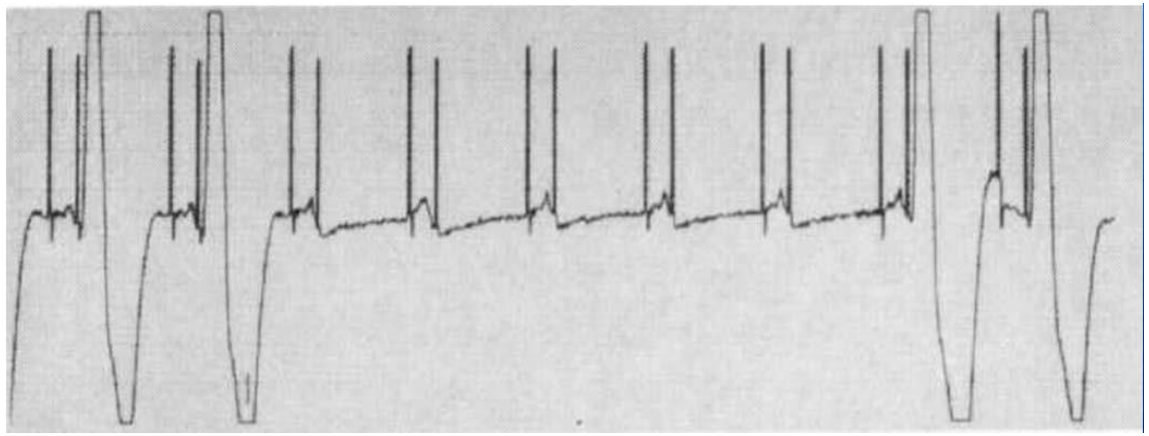
- Dysfonction de PM ou DAI



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- TV polymorphe ou QT long ou court
- Dysfonction de PM ou DAI

→ EEP inutile

# Bradycardie sinusale asymptomatique

In patients with syncope and asymptomatic sinus bradycardia, EPS may be considered in a few instances when non-invasive tests (e.g. ECG monitoring) have failed to show a correlation between syncope and bradycardia.[210–212]

| IIb | B |
|---|---|

# Bradycardie sinusale asymptomatique

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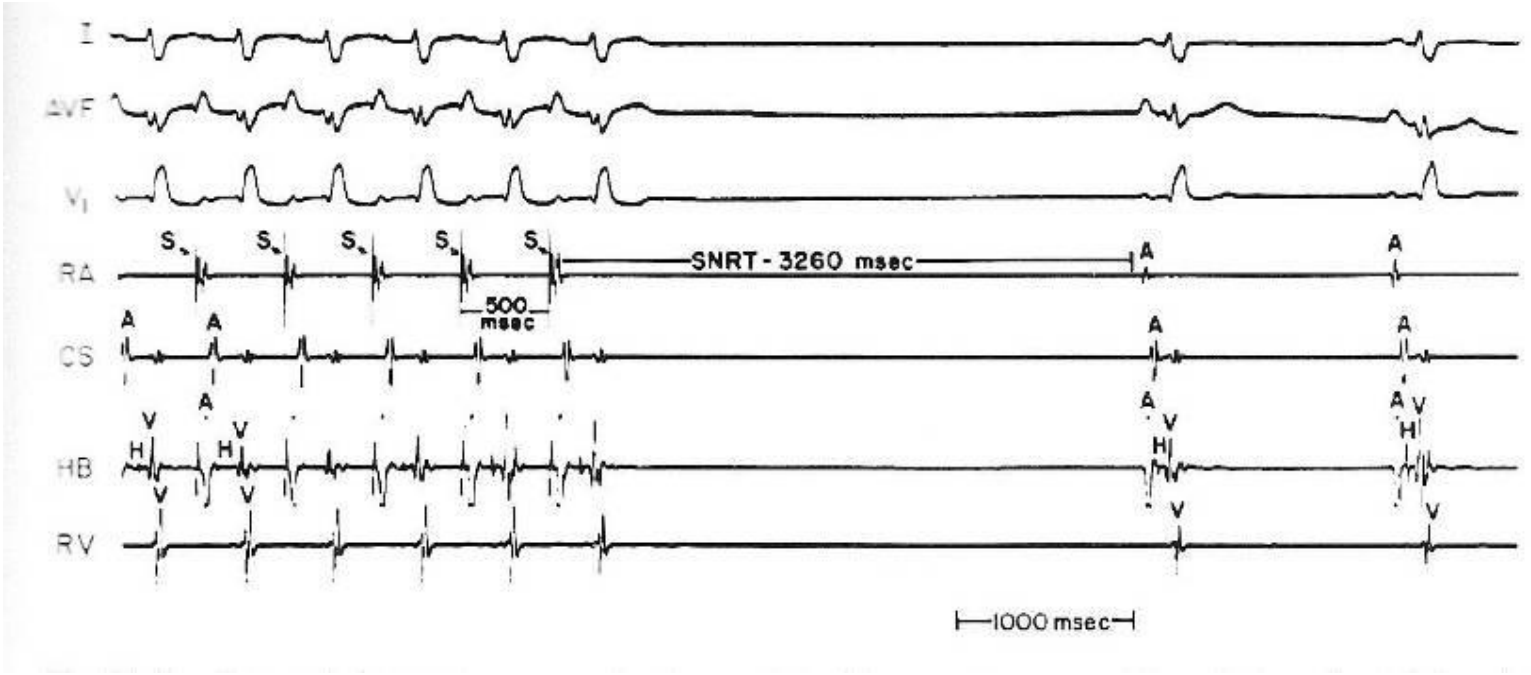
IIb | B




Anormal
si TRS ≥ 1,6 ou 2s
ou TRSC ≥ 525 ms

# Bradycardie sinusale asymptomatique

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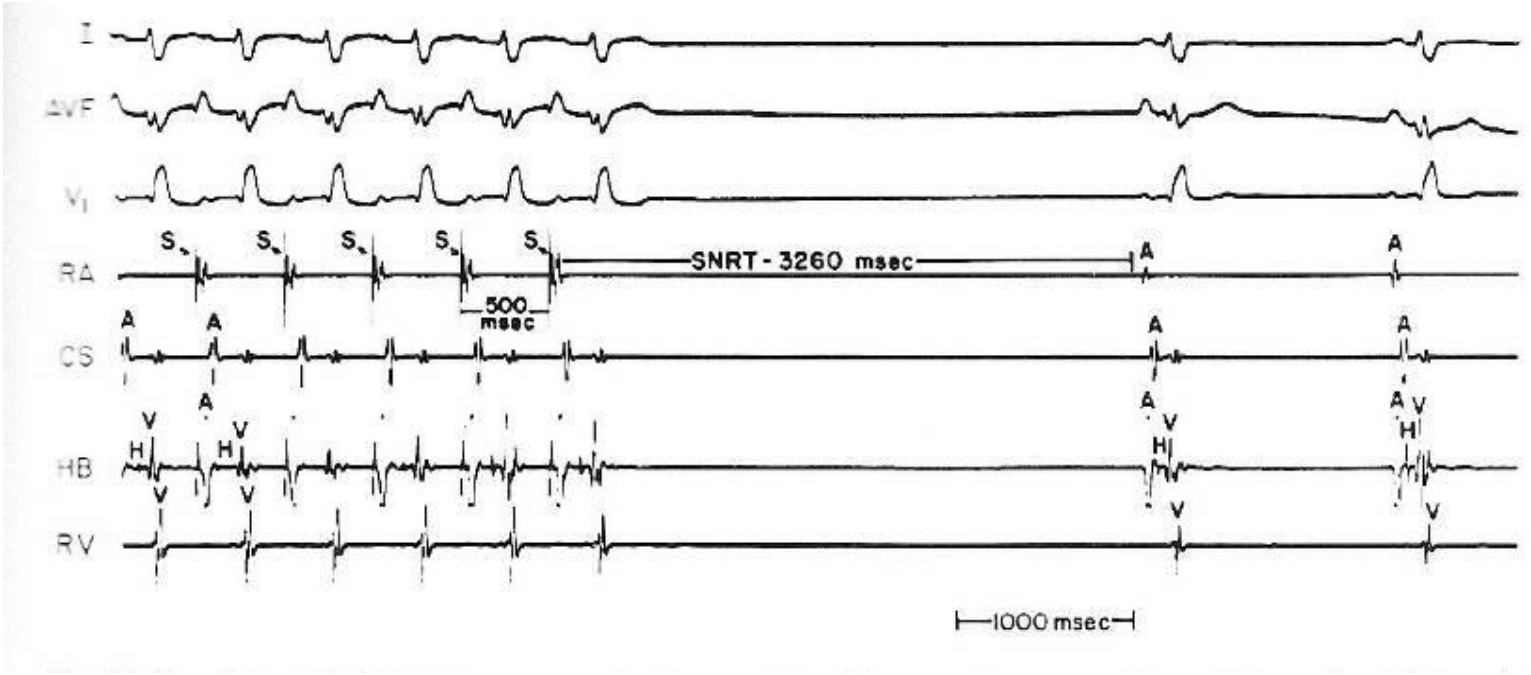
IIb B




Anormal
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In patients with syncope and asymptomatic sinus bradycardia, a pacemaker should be considered if a prolonged corrected SNRT is present.[210–212]

IIa B

# En cas de bloc bifasciculaire

In patients with syncope and bifascicular BBB, EPS should be considered when syncope remains unexplained after non-invasive evaluation.[188,214–217,221]

| IIa | B |
|---|---|

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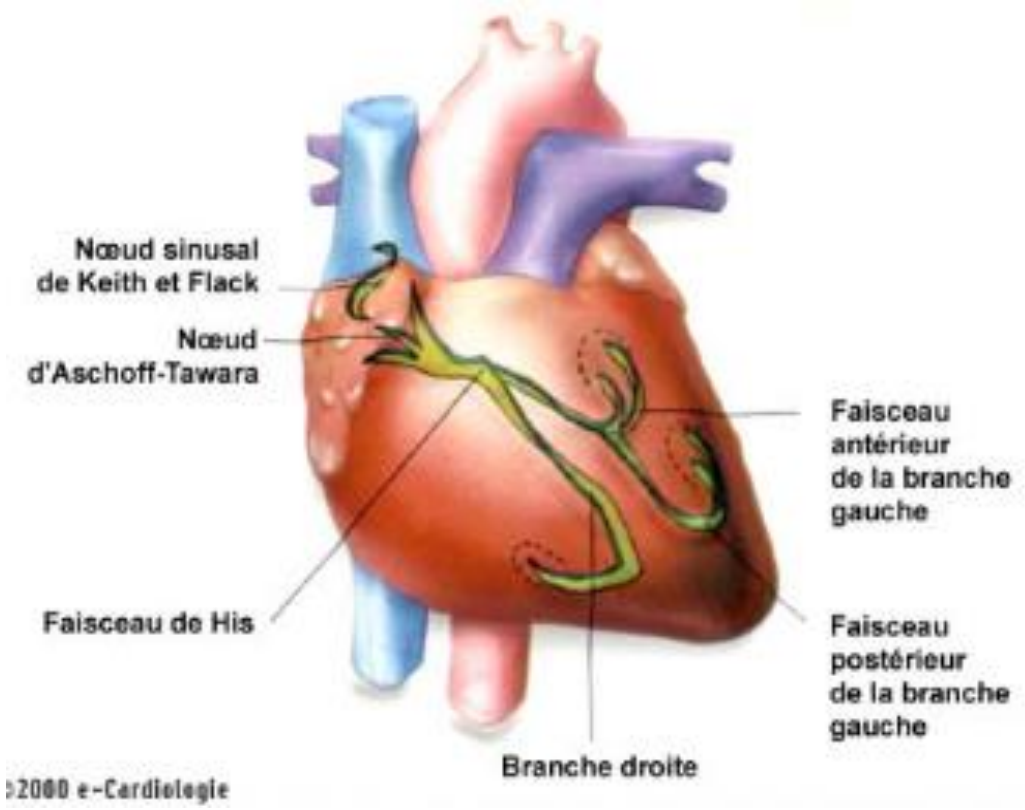

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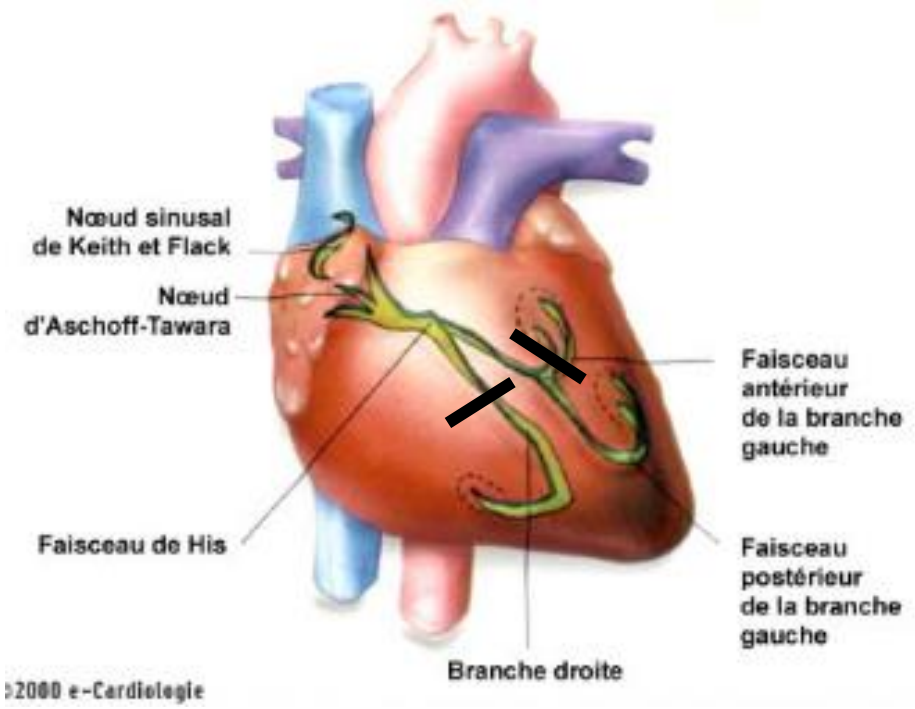
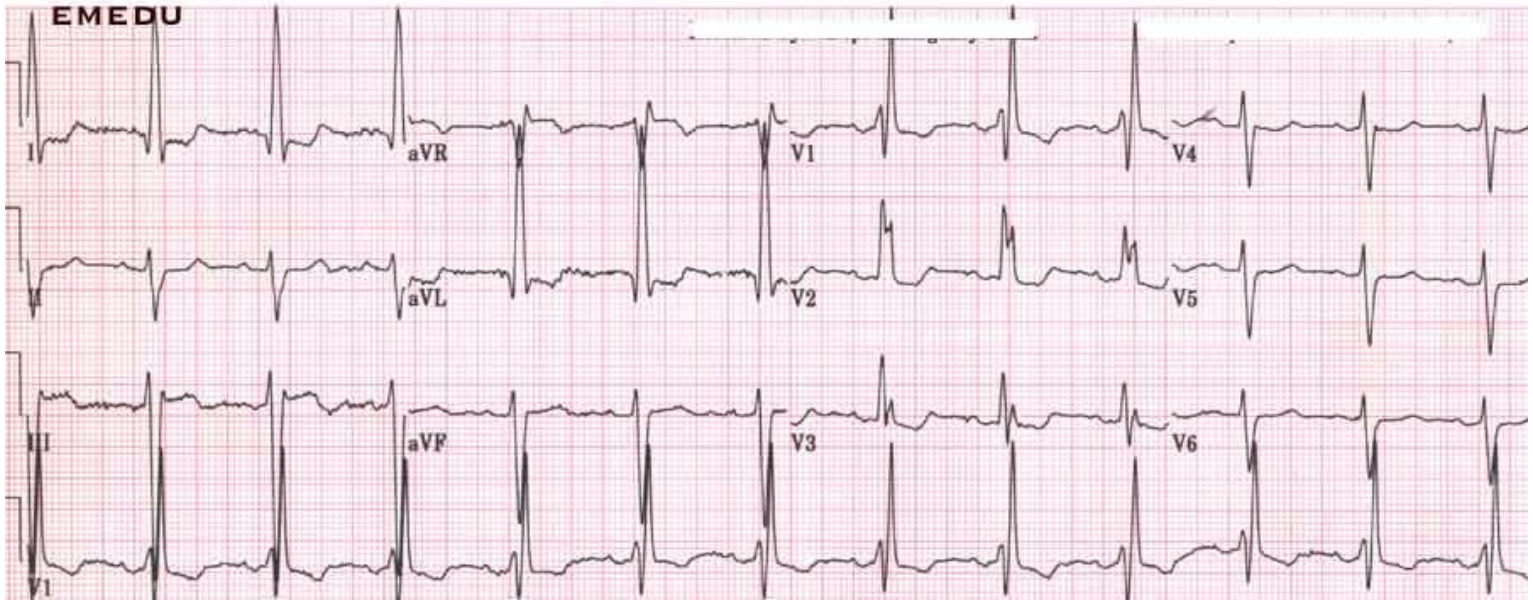
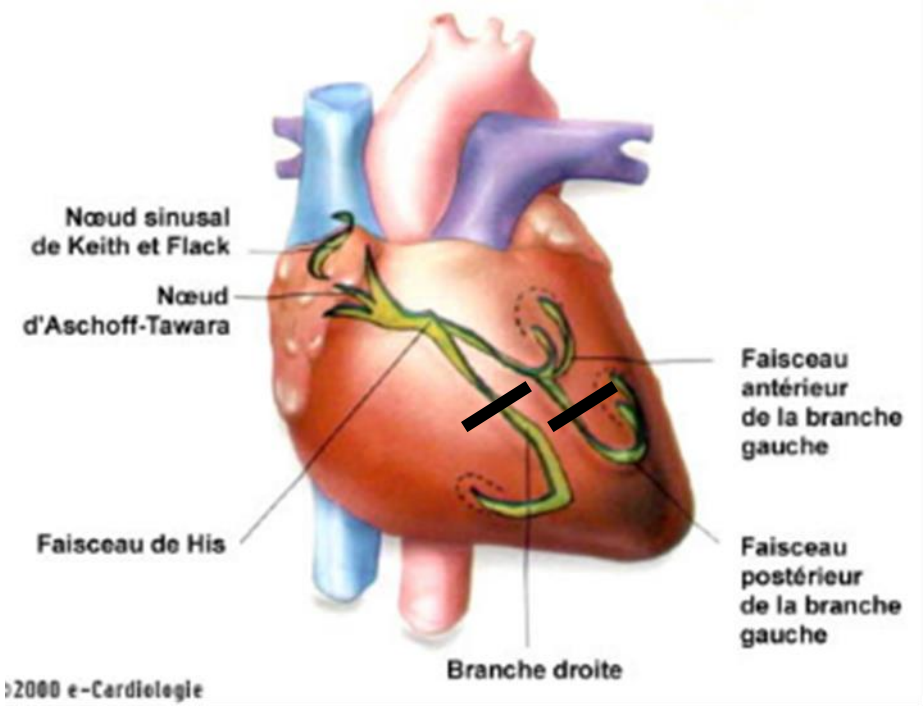


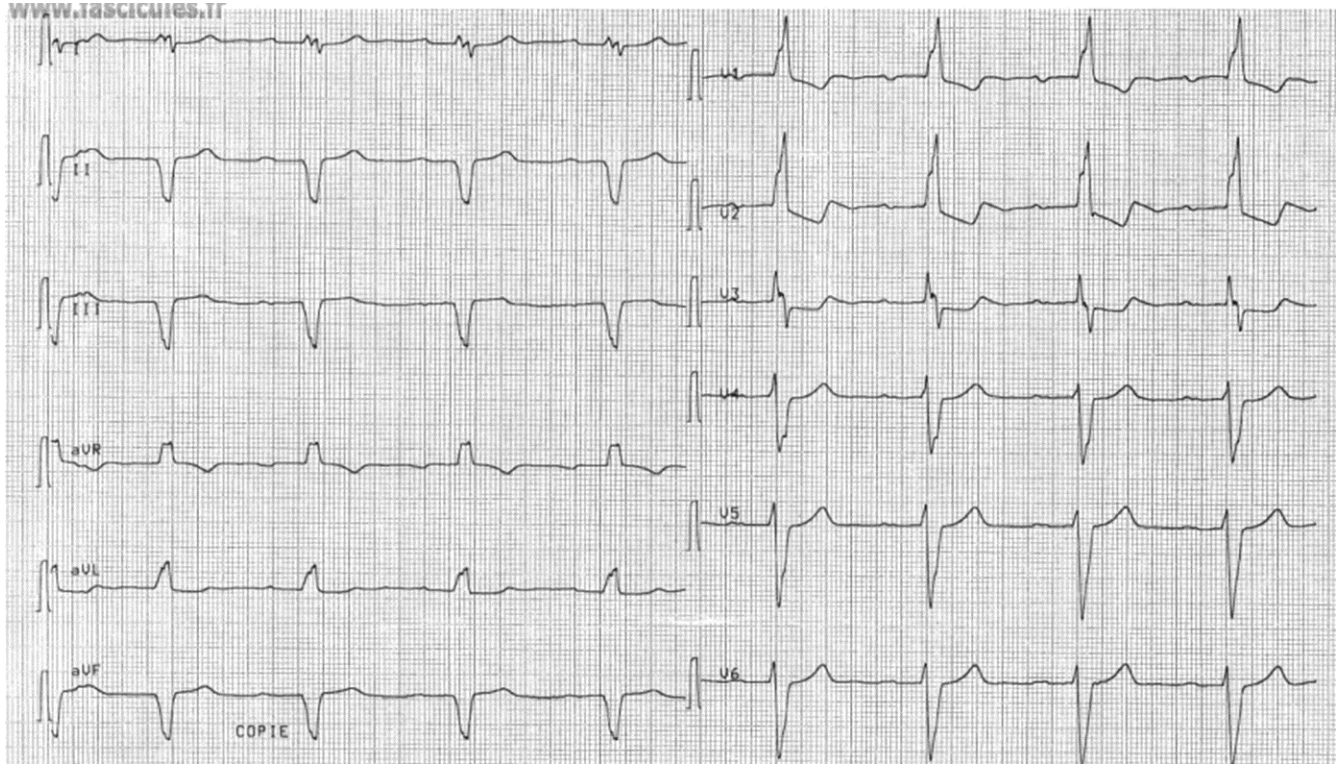

BB droit + hémibloc antérieur gauche



# En cas de bloc bifasciculaire

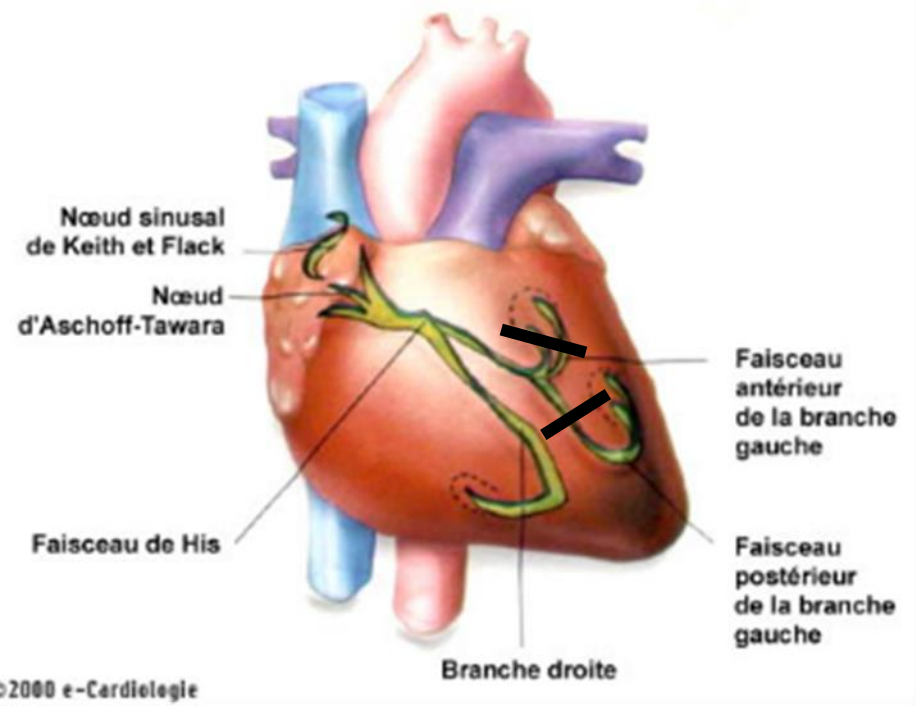
BB droit + hémibloc postérieur gauche

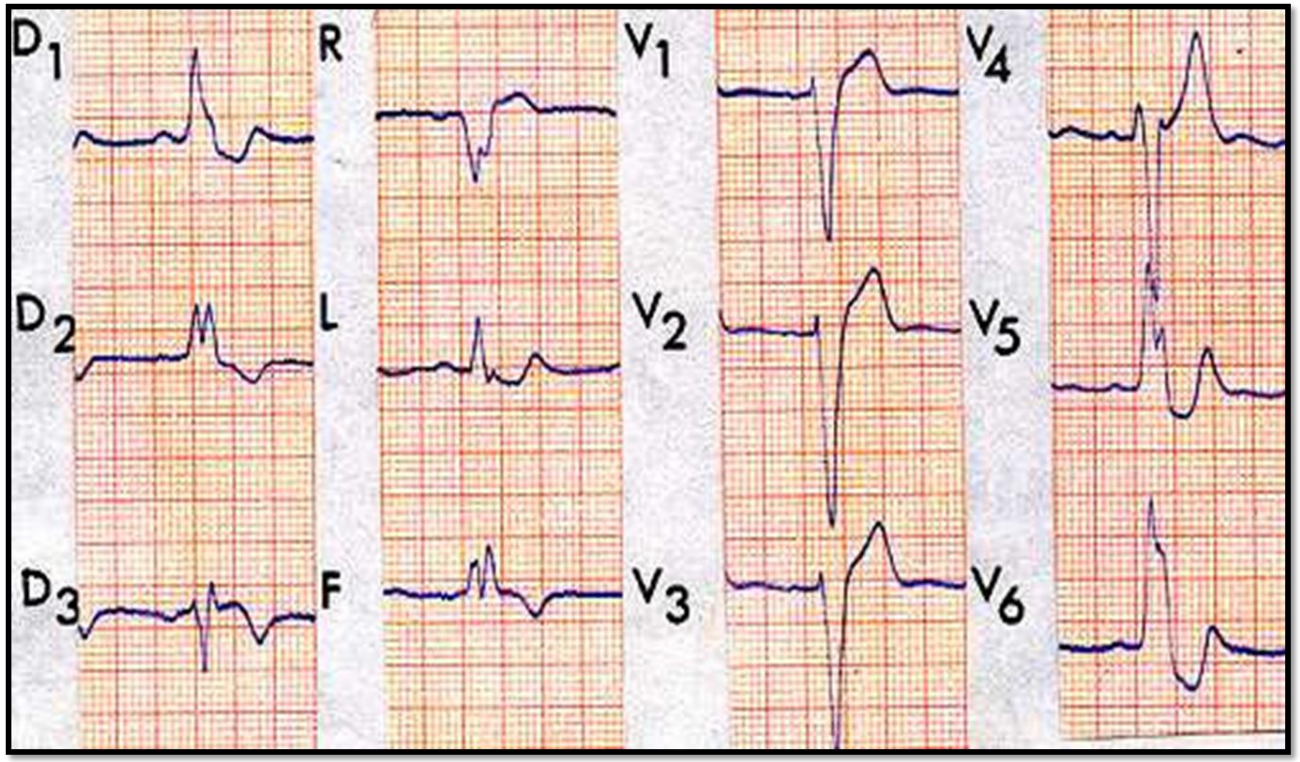


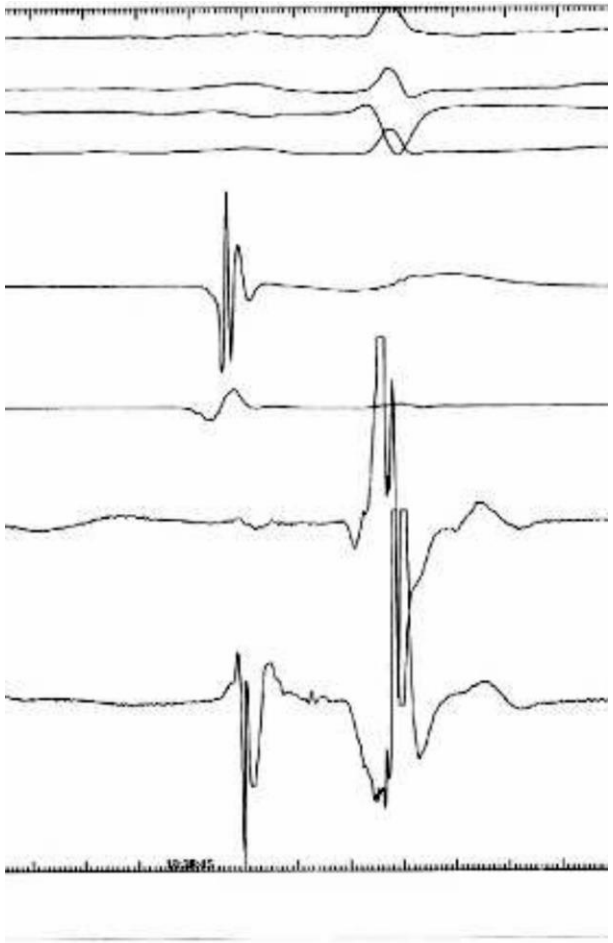
# En cas de bloc bifasciculaire

BB gauche



# Mesure du HV



Mesure du début de H au début du QRS de surface le plus précoce

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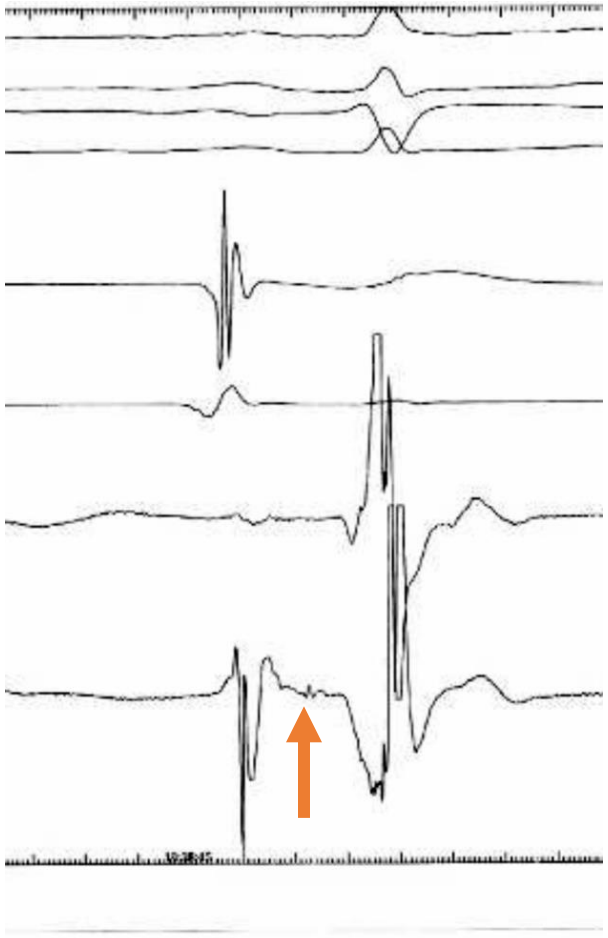

Mesure du début de H au début du QRS de surface le plus précoce

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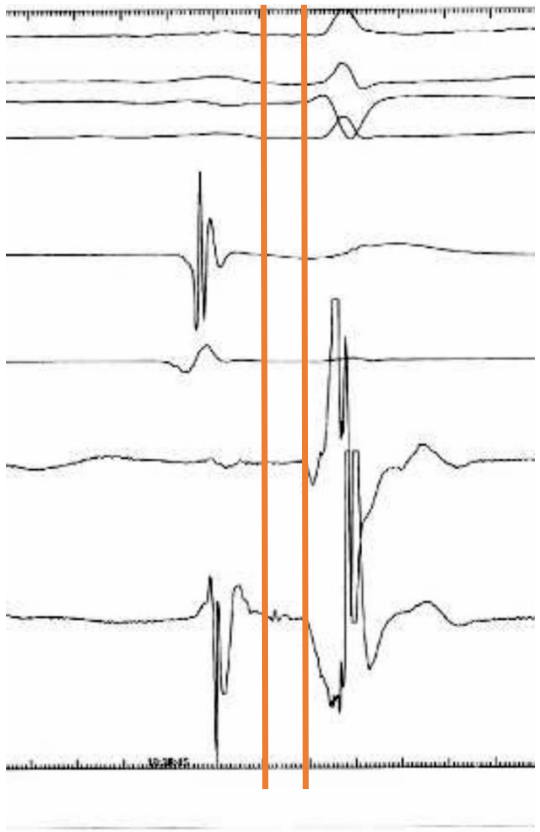
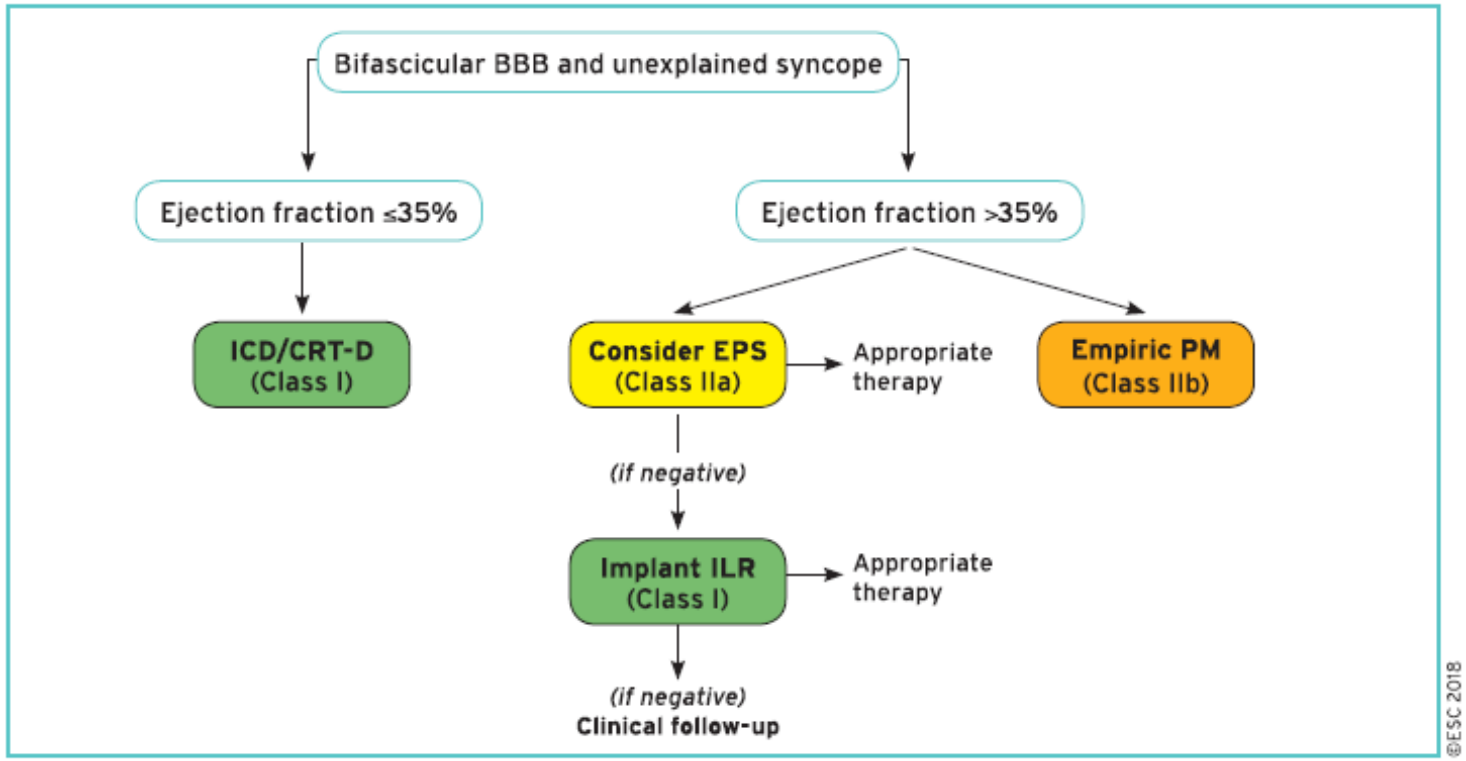


Mesure du début de H au début du QRS de surface le plus précoce

Anormal si HV ≥ 70 ms

# Recherche d'un bloc His -Purkinje


En stimulation atriale
ou après injection d'ajmaline


Bifascicular BBB and unexplained syncope
Ejection fraction ≤35%
Ejection fraction >35%
ICD/CRT-D (Class I)
Consider EPS (Class IIa)
Appropriate therapy
Empiric PM (Class IIb)
(if negative)
Implant ILR (Class I)
Appropriate therapy
(if negative)
Clinical follow-up
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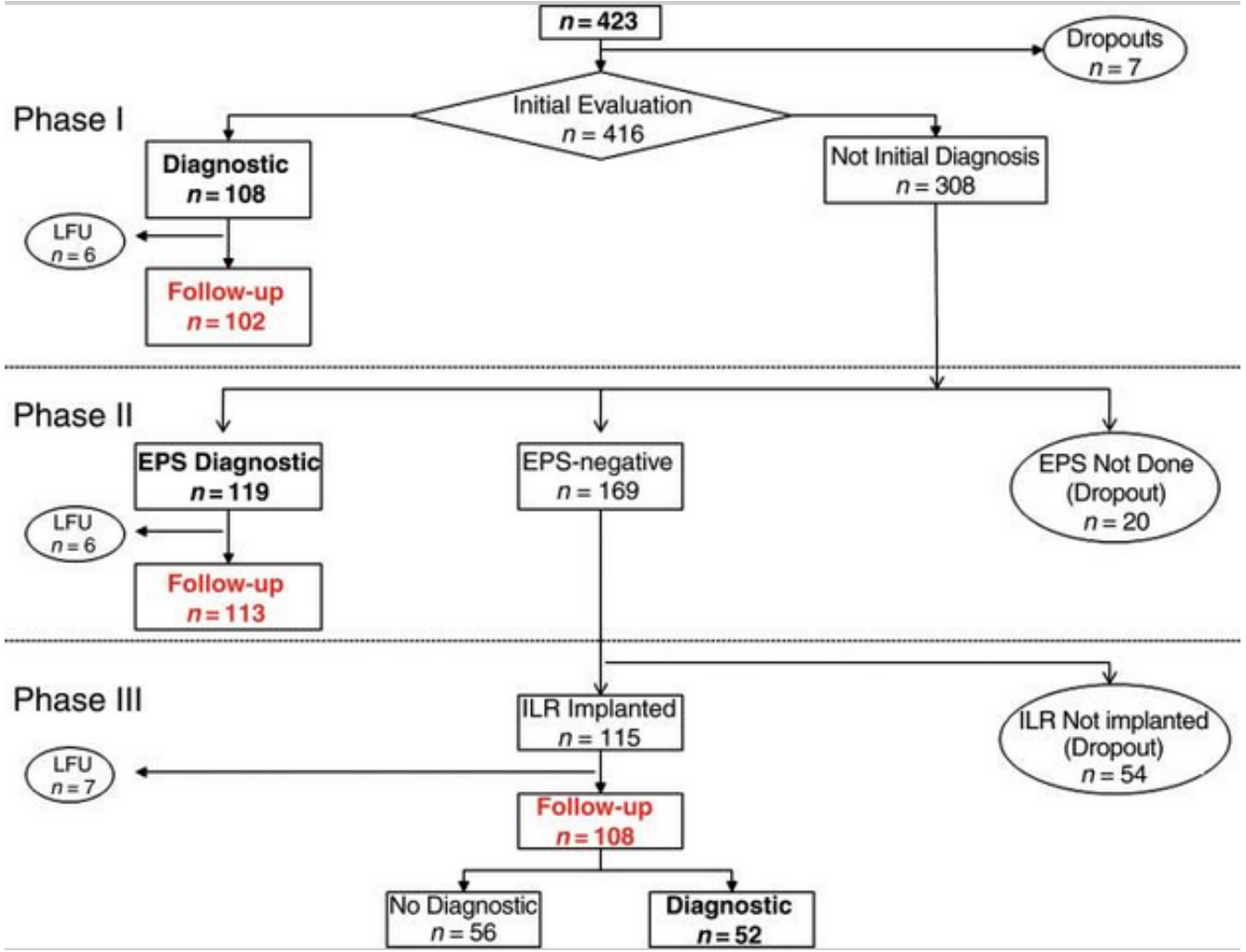


41 % de patients avec un diagnostic à l'EEP

48% de patients avec EEP – ont finalement présenté un BAV

Moya A, et al, Bradycardia detection in Bundle Branch Block (B4) study. Diagnosis, management, and outcomes of patients with syncope and bundle branch block. Eur Heart J 2011

# En cas d'antécédent d'infarctus

In patients with syncope and previous myocardial infarction, or other scar-related conditions, EPS is indicated when syncope remains unexplained after non-invasive evaluation.[218]

| I | B |
|---|---|

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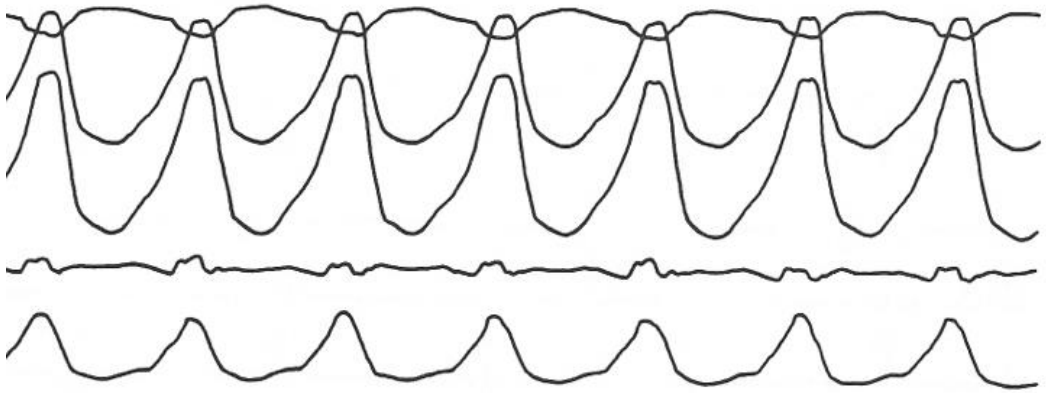
I B

Stimulation à l'apex et infundibulum VD
8 stimuli à 600 et 400 ms
avec 1 à 3 extrastimuli,
limités à 180 ms



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I B

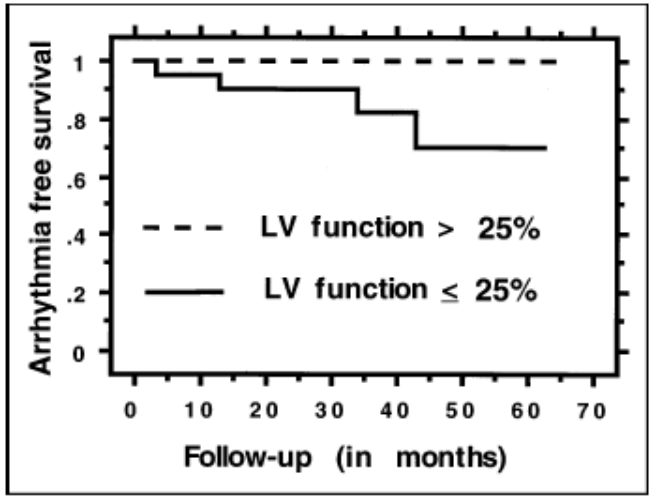


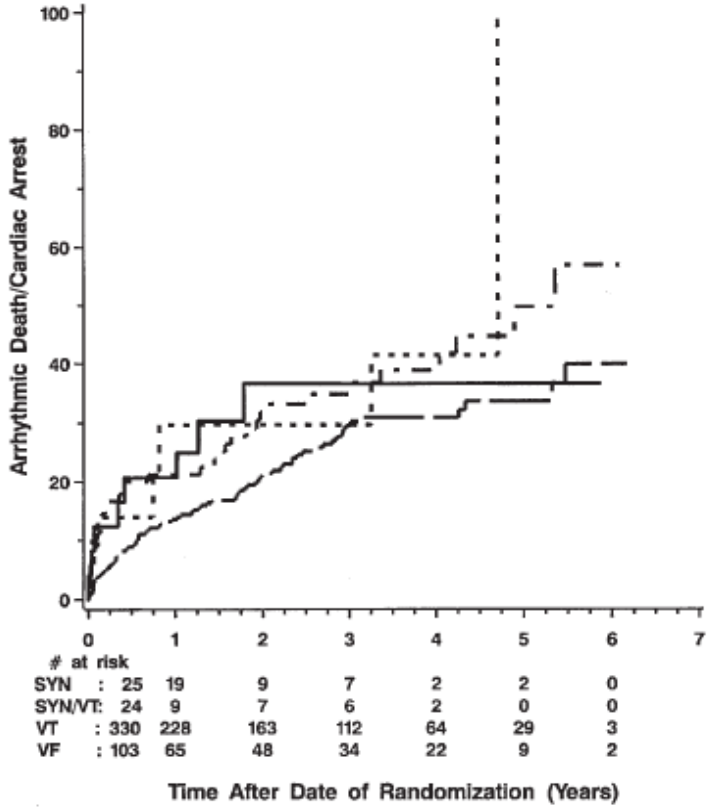

FIGURE 2. Kaplan-Meier life-table analysis of the risk of ventricular arrhythmias at follow-up in patients with syncope of unknown origin and a normal electrophysiologic evaluation. Of 24 patients with a left ventricular (LV) ejection fraction ≤25%, 4 had a ventricular arrhythmia or sudden death at follow-up. No patient with left ventricular ejection fraction >25% had ventricular arrhythmia or sudden death at follow-up.

Link MS et al. Long-term outcome of patients with syncope associated with coronary artery disease and a nondiagnostic electrophysiologic evaluation. Am J Cardiol 1999

# En cas d'antécédent d'infarctus

In patients with unexplained syncope and previous myocardial infarction, or other scar-related conditions, it is recommended that induction of sustained monomorphic VT is managed according to the current ESC Guidelines for VA.[46]

I B





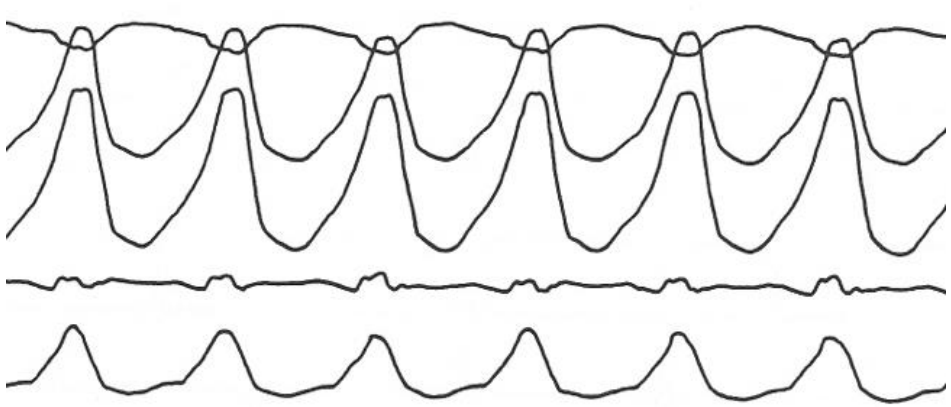
Cumulative probability of arrhythmic death by presenting arrhythmia for all 486 randomly assigned patients. (See Table VI for *P* values.)

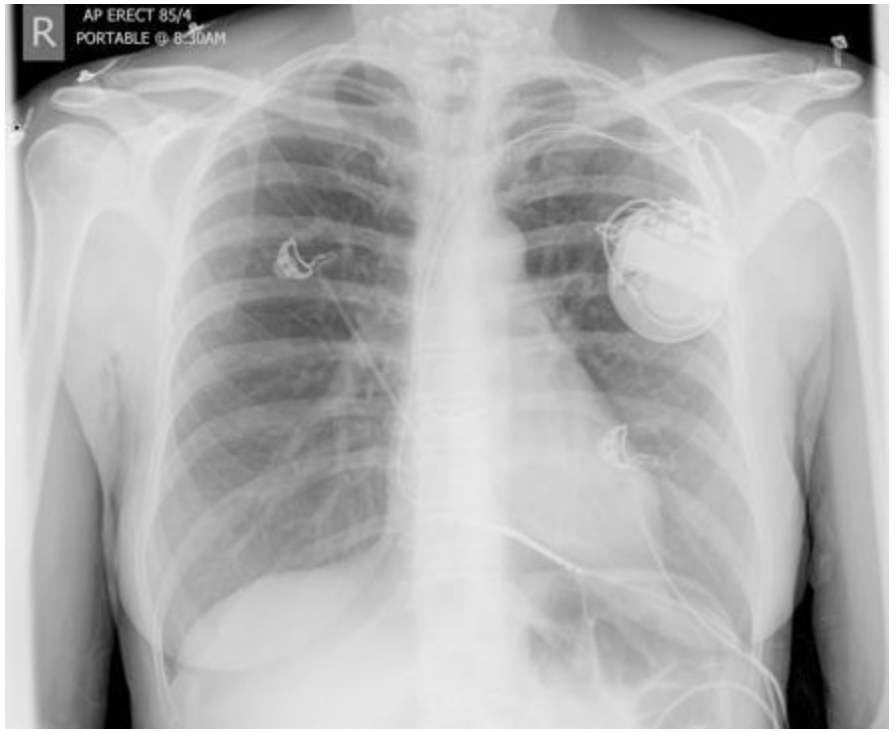
Olshansky B et al. Clinical significance of syncope in the electrophysiologic study versus electrocardiographic monitoring (ESVEM) trial. The ESVEM Investigators. Am Heart J 1999;1

# En cas d'antécédent d'infarctus

An ICD is indicated in patients with syncope and previous myocardial infarction who have VT induced during EPS.[218]

| I | C |
|---|---|

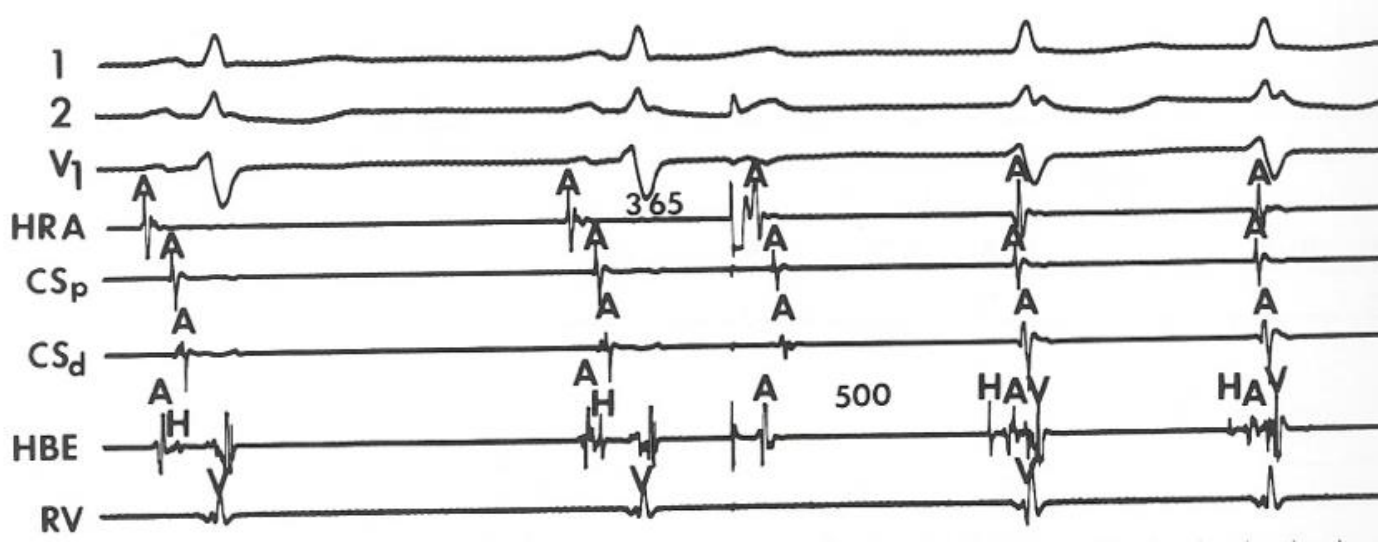




# En cas de palpitations préalables

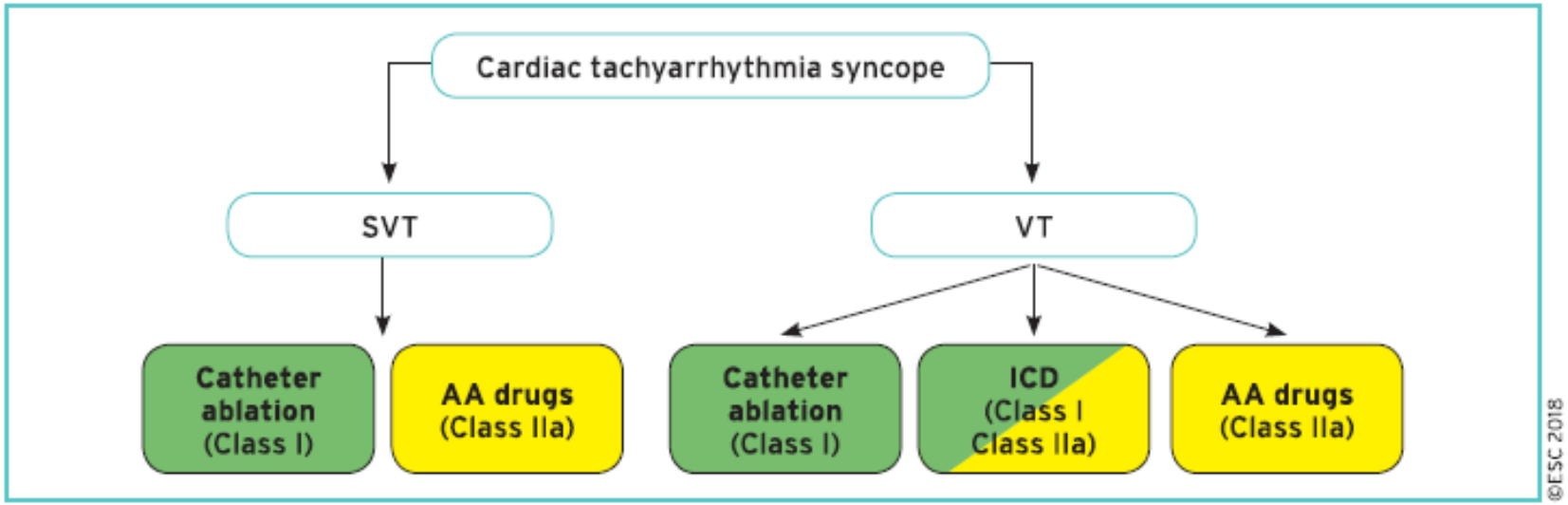
In patients with syncope preceded by sudden and brief palpitations, EPS may be considered when syncope remains unexplained after non-invasive evaluation.

IIb C




In patients without structural heart disease with syncope preceded by sudden and brief palpitations, it is recommended that the induction of rapid SVT or VT, which reproduce hypotensive or spontaneous symptoms, is managed with appropriate therapy according to the current ESC Guidelines.[46,222]

I C


Cardiac tachyarrhythmia syncope
SVT
VT
Catheter ablation (Class I)
AA drugs (Class IIa)
Catheter ablation (Class I)
ICD (Class I Class IIa)
AA drugs (Class IIa)
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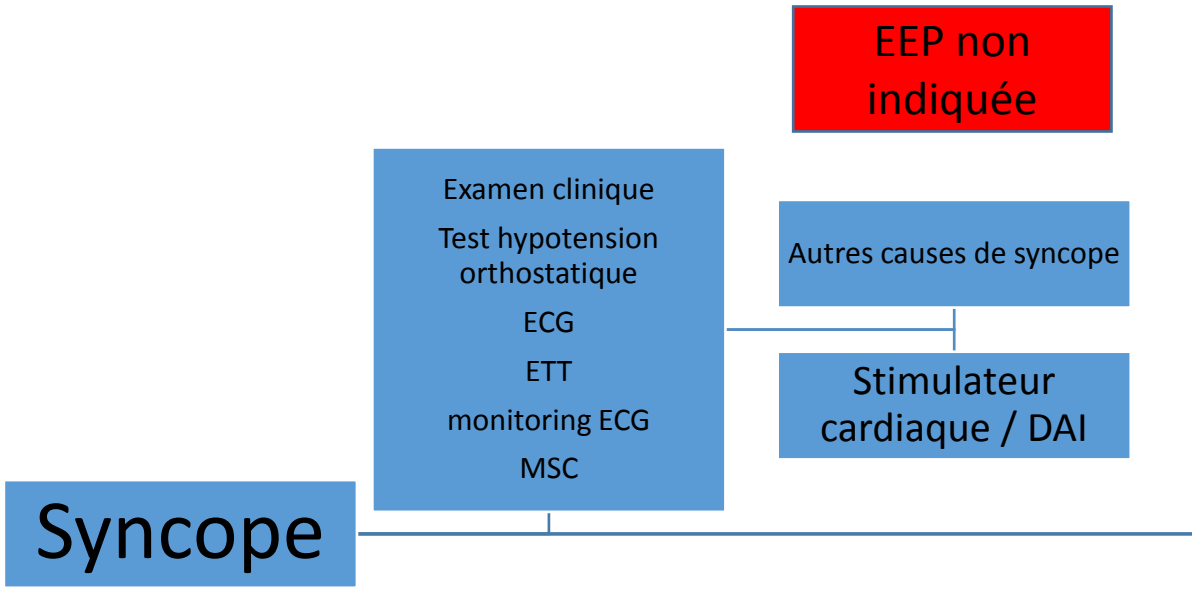
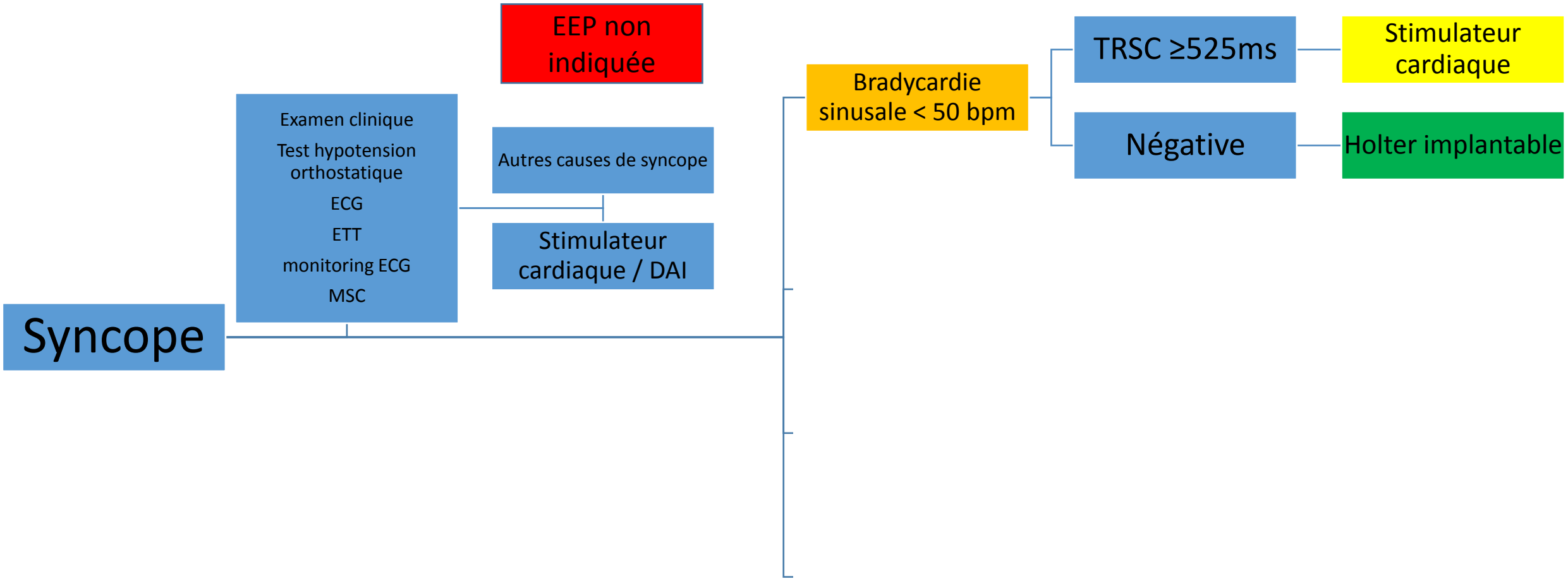
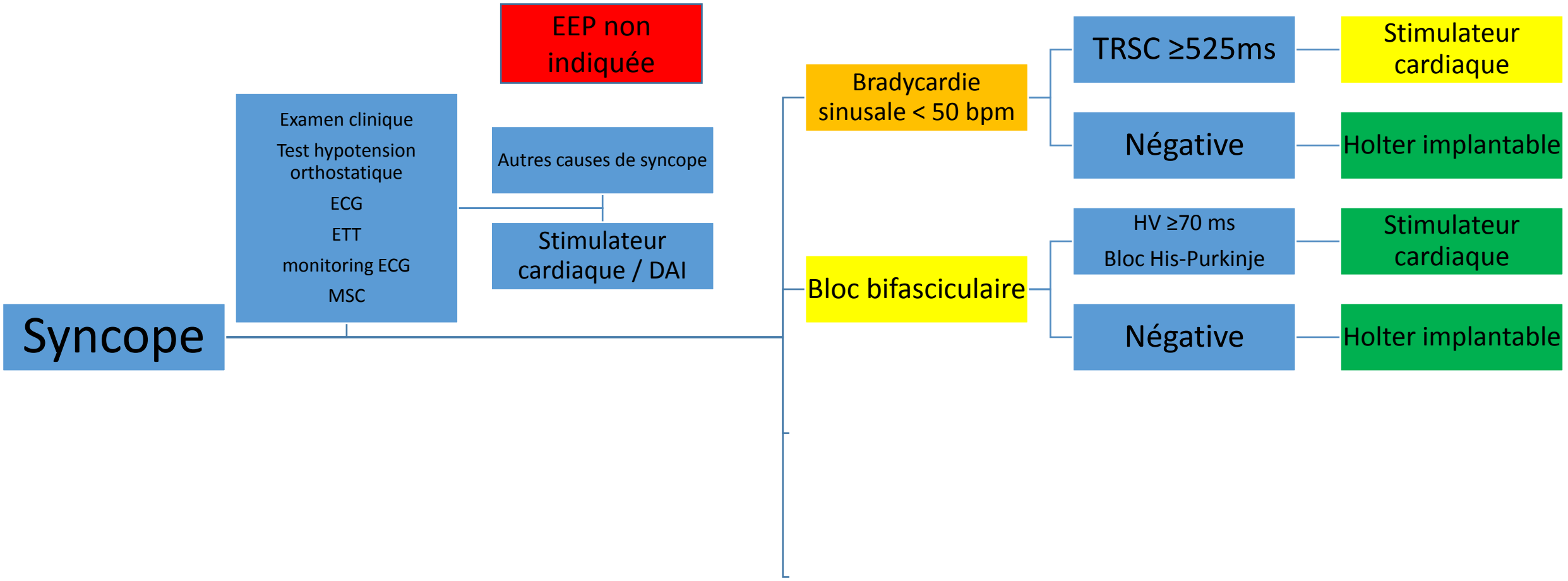
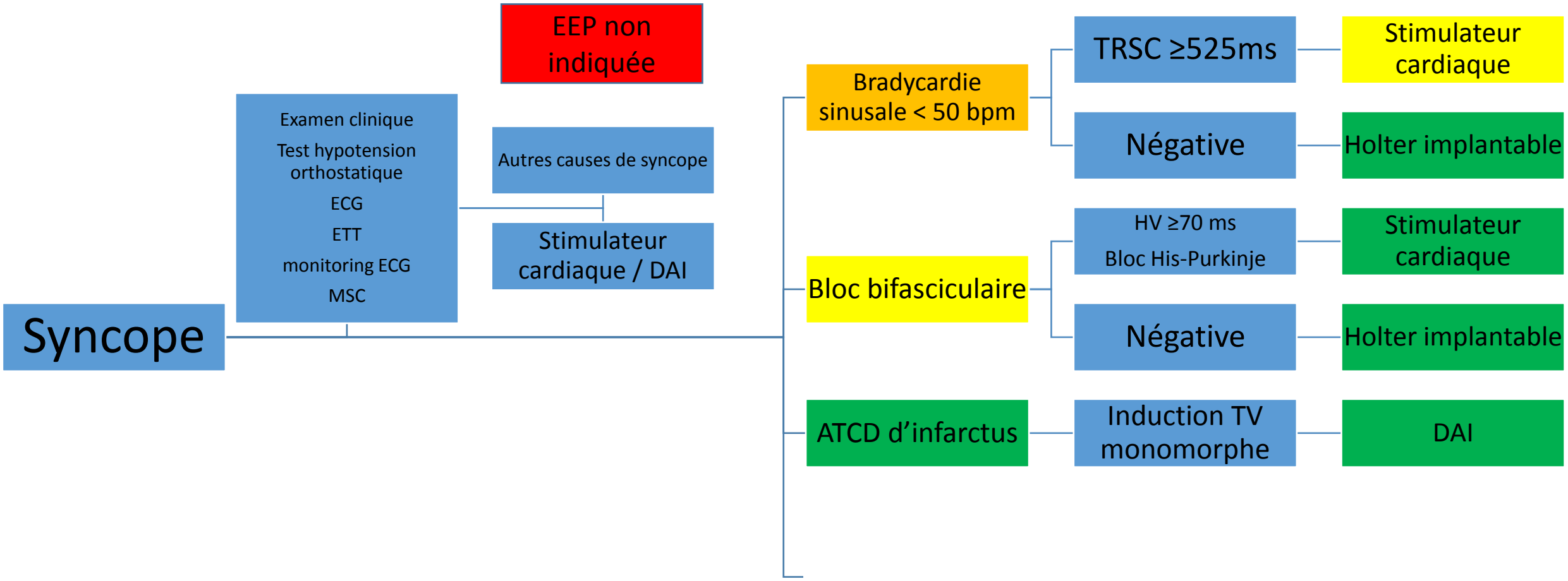

Syncope
Examen clinique
Test hypotension orthostatique
ECG
ETT
monitoring ECG
MSC
Autres causes de syncope
Stimulateur cardiaque / DAI
EEP non indiquée


Syncope
Examen clinique
Test hypotension orthostatique
ECG
ETT
monitoring ECG
MSC
Autres causes de syncope
Stimulateur cardiaque / DAI
EEP non indiquée
Bradycardie sinusale < 50 bpm
TRSC ≥525ms
Stimulateur cardiaque
Négative
Holter implantable


Syncope
Examen clinique
Test hypotension orthostatique
ECG
ETT
monitoring ECG
MSC
EEP non indiquée
Autres causes de syncope
Stimulateur cardiaque / DAI
Bradycardie sinusale < 50 bpm
TRSC ≥525ms
Stimulateur cardiaque
Négative
Holter implantable
Bloc bifasciculaire
HV ≥70 ms
Bloc His-Purkinje
Stimulateur cardiaque
Négative
Holter implantable


Syncope
Examen clinique
Test hypotension orthostatique
ECG
ETT
monitoring ECG
MSC
EEP non indiquée
Autres causes de syncope
Stimulateur cardiaque / DAI
Bradycardie sinusale < 50 bpm
TRSC ≥525ms
Stimulateur cardiaque
Négative
Holter implantable
Bloc bifasciculaire
HV ≥70 ms
Bloc His-Purkinje
Stimulateur cardiaque
Négative
Holter implantable
ATCD d'infarctus
Induction TV monomorphe
DAI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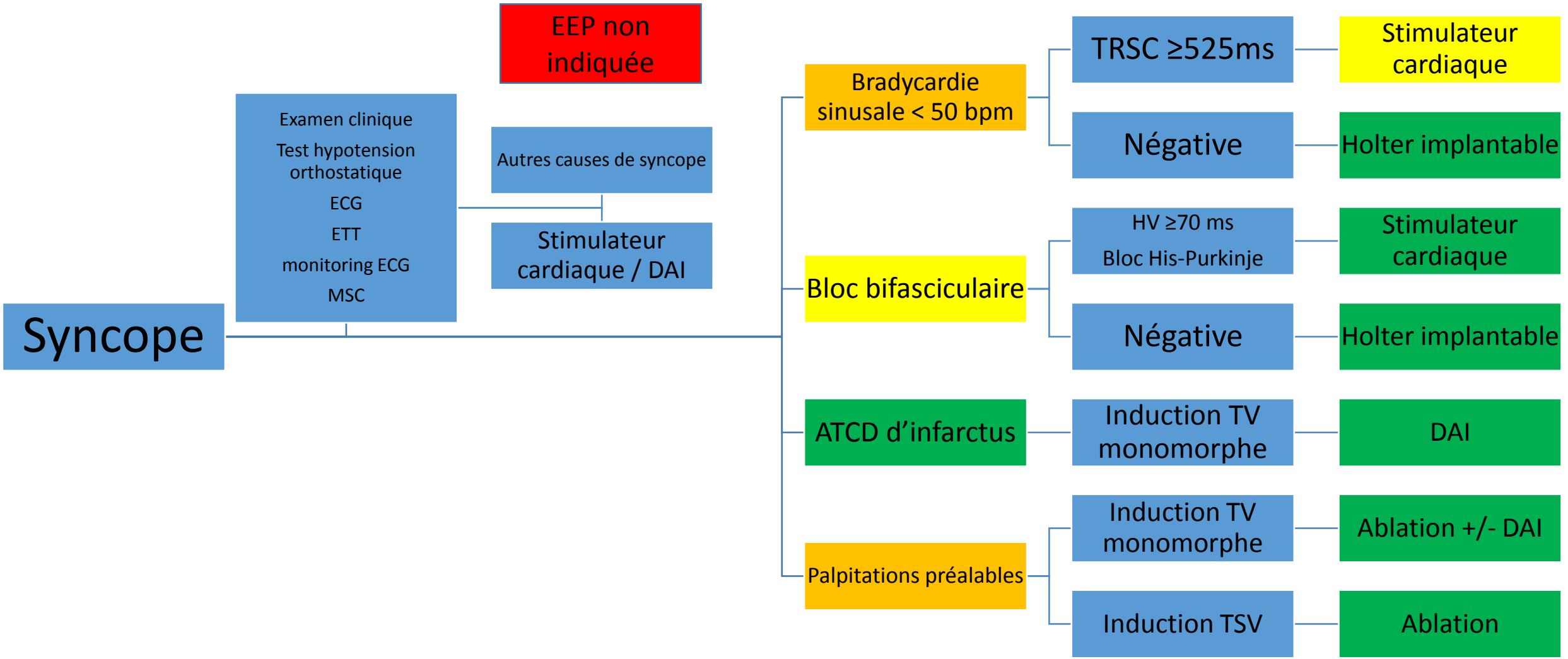
Syncope
Examen clinique
Test hypotension orthostatique
ECG
ETT
monitoring ECG
MSC
EEP non indiquée
Autres causes de syncope
Stimulateur cardiaque / DAI
Bradycardie sinusale < 50 bpm
TRSC ≥525ms
Stimulateur cardiaque
Négative
Holter implantable
Bloc bifasciculaire
HV ≥70 ms
Bloc His-Purkinje
Stimulateur cardiaque
Négative
Holter implantable
ATCD d'infarctus
Induction TV monomorphe
DAI
Palpitations préalables
Induction TV monomorphe
Ablation +/- DAI
Induction TSV
Ablation

**Syncope**

Examen clinique
Test hypotension orthostatique
ECG
ETT
monitoring ECG
MSC

Autres causes de syncope → Stimulateur cardiaque / DAI

EEP non indiquée

- Bradycardie sinusale < 50 bpm
  - TRSC ≥525ms → Stimulateur cardiaque
  - Négative → Holter implantable
- Bloc bifasciculaire
  - HV ≥70 ms / Bloc His-Purkinje → Stimulateur cardiaque
  - Négative → Holter implantable
- ATCD d'infarctus → Induction TV monomorphe → DAI
- Palpitations préalables
  - Induction TV monomorphe → Ablation +/- DAI
  - Induction TSV → Ablation

EEP inutile chez patients avec ECG normal, absence de cardiopathie ou palpitations