



DoloMeeting Arrhythmias
international workshop

**Third international meeting
in syncopal loss of consciousness,
clinical cardiac arrhythmias, electrophysiology
and device implantation**

Bolzano
February 20th-21st, 2020

DoloMeeting Arrhythmias 2020

BOLZANO, FEBRUARY 20th 2020

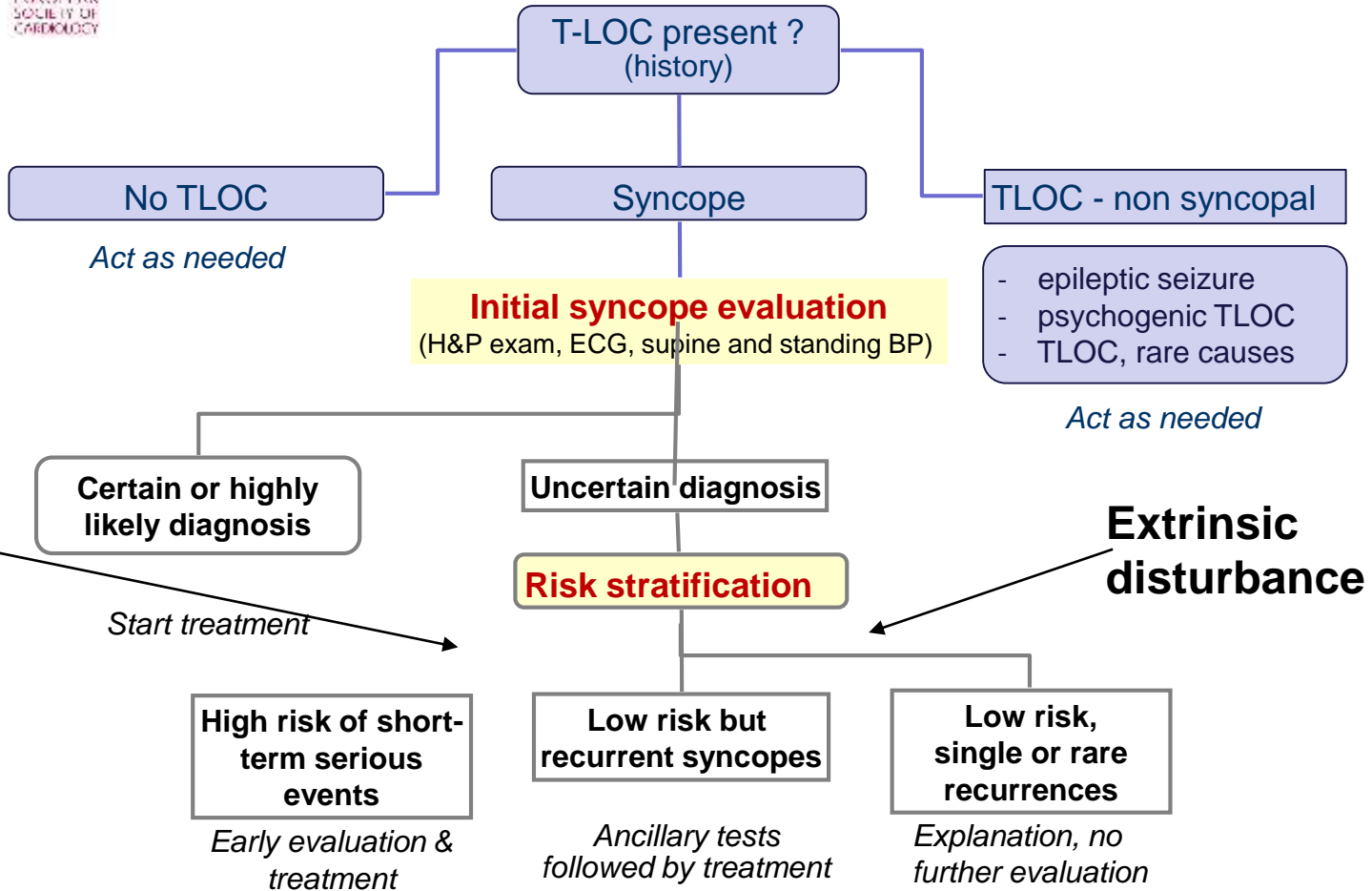
**Role of pacing in patients
affected by syncopal loss of
consciousness**

Marco Tomaino

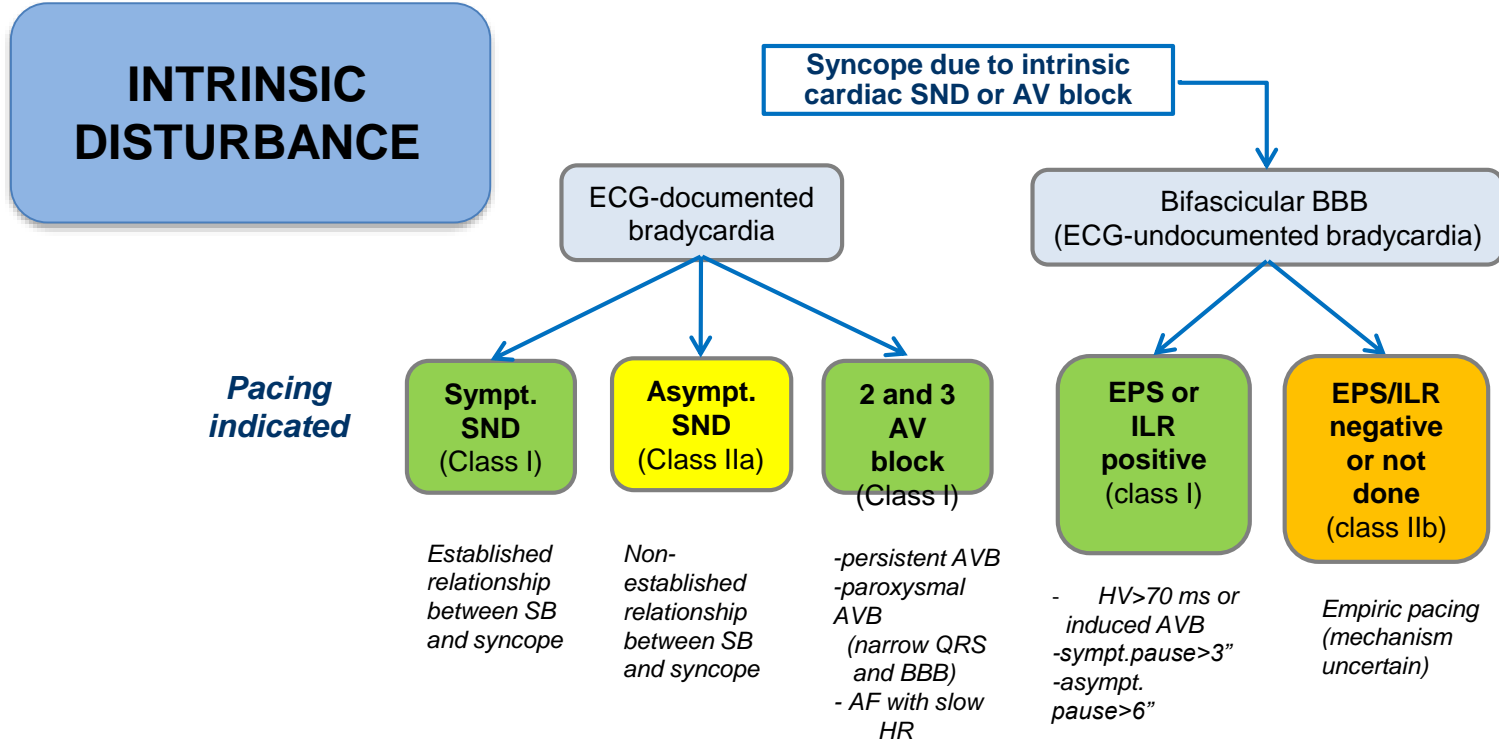
*Multidisciplinary Syncope Unit / Arrhythmologic Service
Departement of Cardiology, Central Hospital of Bolzano*



Presentation of patient with probable TLOC

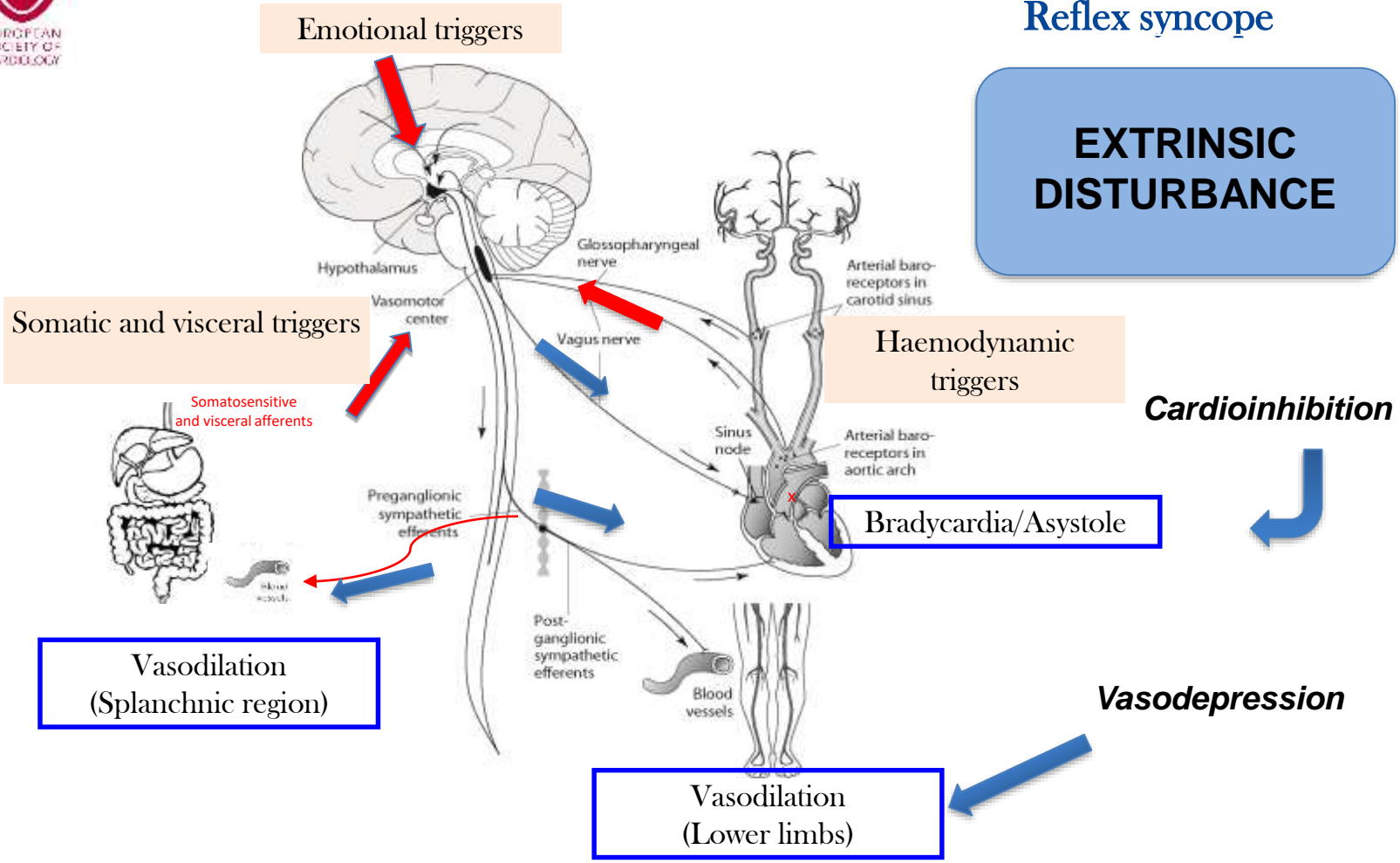


Treatment of syncope: **Cardiac arrhythmias**



Reflex syncope

EXTRINSIC DISTURBANCE



PATIENTS SELECTION

Patients must have a sufficiently **severe clinical presentation** to warrant specific treatment

High frequency or risk provided by guidelines:

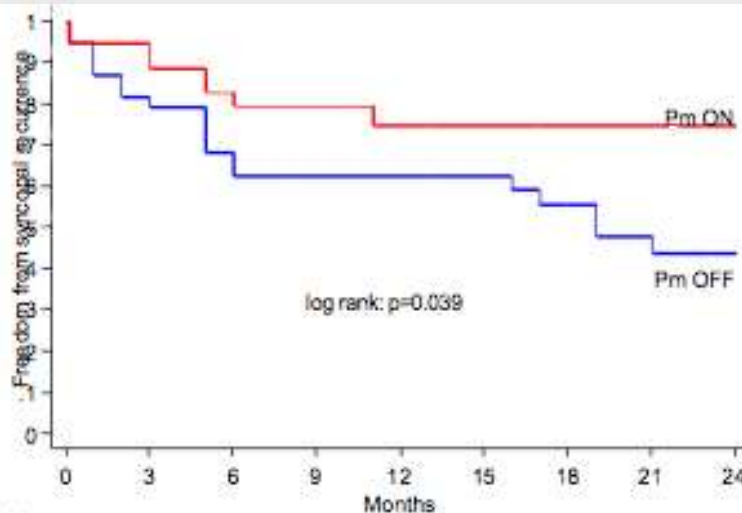
- invalidated quality of life
- unpredictable syncope
- syncope exposing patients to risk of trauma
- occurrence of syncope during “high risk activity”

ISSUE 3

International Study on Syncope of Uncertain Etiology 3

M.Brignole, C.Menozzi, A.Moya, D.Andresen, J.J.Blanc, A.D.Krahn, W. Wieling, X.Beiras, J.C. Deharo, V.Russo, M.Tomaino, R.Sutton

Pacing is effective in reducing recurrence of syncope in patients >40 years with severe asystolic NMS (ILR).
There was 32% absolute risk reduction and 57% relative risk reduction



25%
Recurrence of
syncope despite PM
Implantation

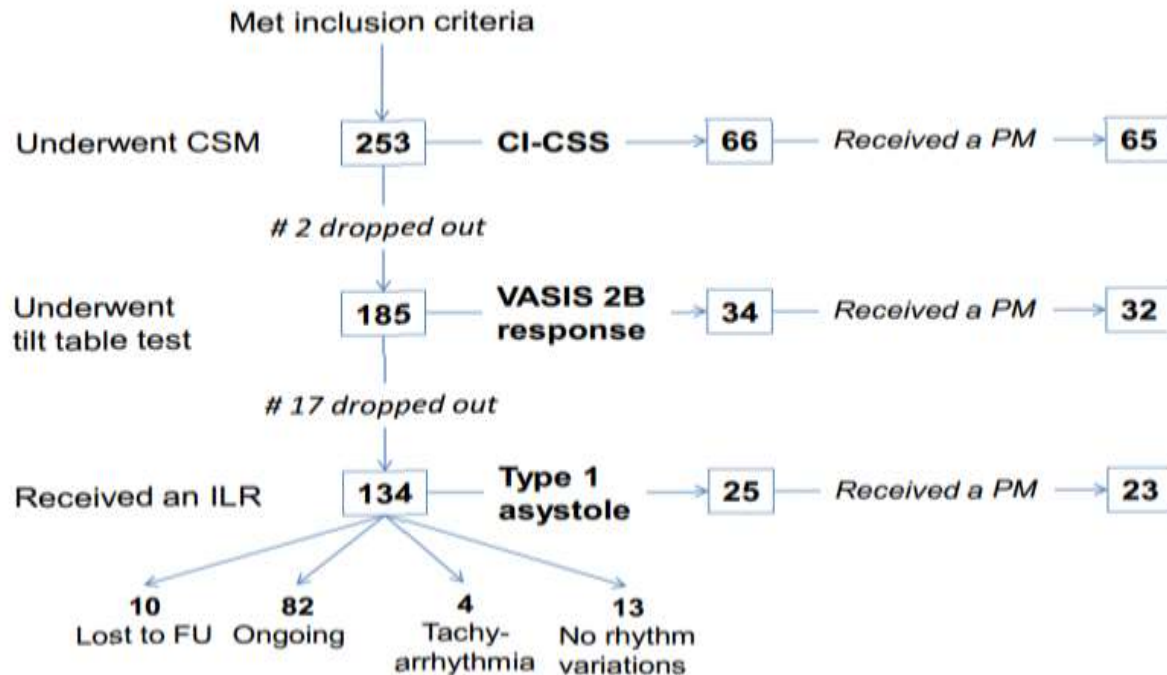
Standardized algorithm for cardiac pacing in older patients affected by severe unpredictable reflex syncope: 3-year insights from the Syncope Unit Project 2 (SUP 2) study

Michele Brignole^{1*}, Francesco Arabia², Fabrizio Ammirati³, Marco Tomaino⁴, Fabio Quartieri⁵, Martina Rafanelli⁶, Attilio Del Rosso⁷, Maria Rita Vecchi⁸, Vitantonio Russo⁹, and Germano Gaggioli¹⁰, on behalf of the Syncope Unit Project 2 (SUP 2) investigators[†]

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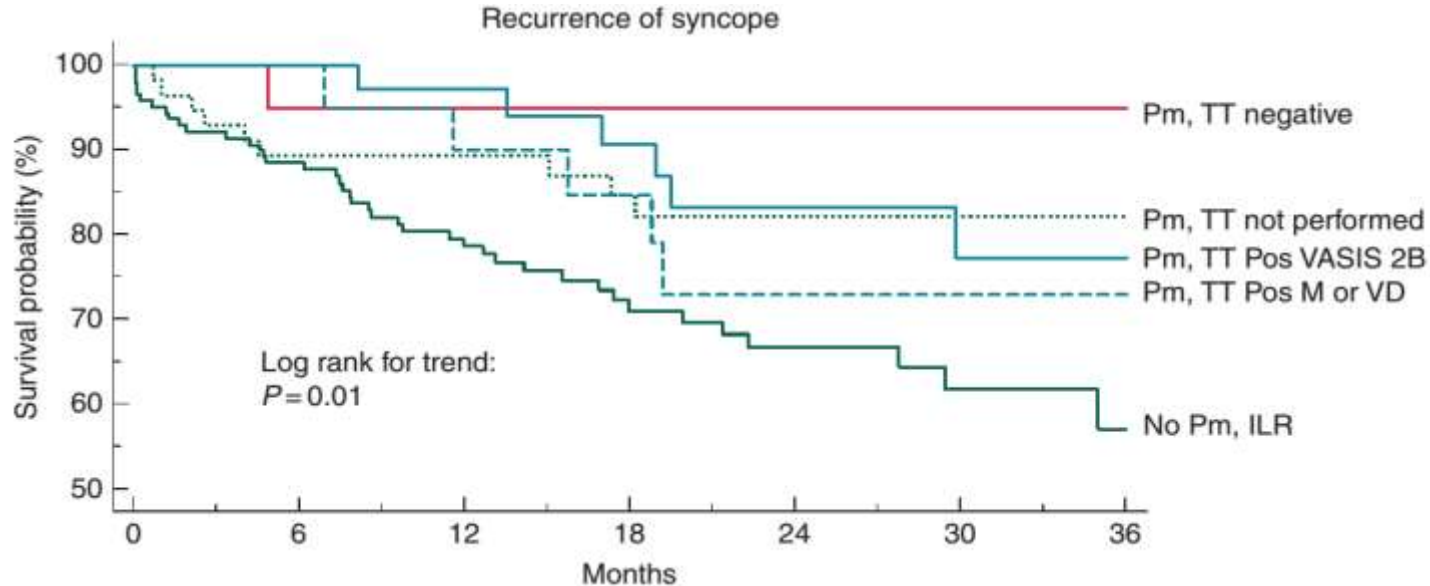
Syncope Unit Project 2 (SUP 2)



Syncope Unit Project 2 (SUP 2)

Table 3 Estimated recurrence rate of syncope, analysed by means of Kaplan–Meier survival curves, in paced patients according to TT findings



Characteristics	TT- (n = 20)	TT+ VASIS 2B (n = 38)	TT+ M or VD forms (n = 23)	TT not performed
1-Year recurrence rate (95% CI)	5 (0–10)	3 (0–9)	10 (0–24)	11 (3–19)
2-Year recurrence rate (95% CI)	5 (0–10)	17 (3–31)	27 (7–47)	20 (8–32)
3-Year recurrence rate (95% CI)	5 (0–10)	23 (5–41)	27 (7–47)	20 (8–32)



The benefit of pacemaker therapy in patients with presumed neurally-mediated Syncope and documented asystole is greater when tilt test is negative
An analysis from the Third International Study on Syncope of Uncertain Etiology (ISSUE-3)

M.Brignole, P.Donateo, M.Tomaino, R.Massa, M.Iori, X.Beiras, A.Moya, T.Kus, J.C. Deharo, S.Giuli, A.Gentili and R.Sutton

52 Patients (26 TT+, 26 TT-) with **asystolic ILR** were treated with a **PM**

Recurrence of syncope in  8 (31%) in patients with TT+
 1 (4%) in patients with TT-

The benefit of pacemaker therapy in patients with neurally-mediated syncope and documented asystole: a metaanalysis of implantable loop recorder studies (ISSUE-2, ISSUE-3, SUP-2, USA-FU)

Brignole M, Deharo JC, Menozzi C, Moya A, Sutton R, Tomaino M, Ungar A .

Patients with negative tilt test will have <6% risk of recurrence of syncope within 3 years, like patients paced for intrinsic atrioventricular block



1. Asystolic Tilt Test and PM



2. Dual Chamber pacemaker with RDR- algorithm vs other possible algorithms

BIOSync CLS

Benefit of dual-chamber pacing with Closed Loop Stimulation (CLS) in tilt-induced cardio-inhibitory reflex syncope.

A randomized double-blind parallel trial

PI	Site	City	Country
Dr. Michele Brignole (study coordinator)	Ospedali del Tigullio	Lavagna	IT
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Dr. Arnoud Aerts	Atrium MC	Heerlen	NL
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Prof. Jean Claude Deharo	Timone University Hospital	Marseille	FR
Mohamed Hamdan	University of Wisconsin	Madison	US
Dr. Maurizio Lunati	Ospedale Niguarda	Milano	IT
Dr. Angel Moya	Hospital Universitario Vall d'Hebròn	Barcelona	ES
Dr. Felix Ayala-Paredes	CHUS - Centre hospitalier universitaire de Sherbrooke	Sherbrooke	CA




PACEMAKER

IN SELECTED PATIENTS WITH EVIDENCE OF
CARDIOINHIBITION DOCUMENTED WITH:

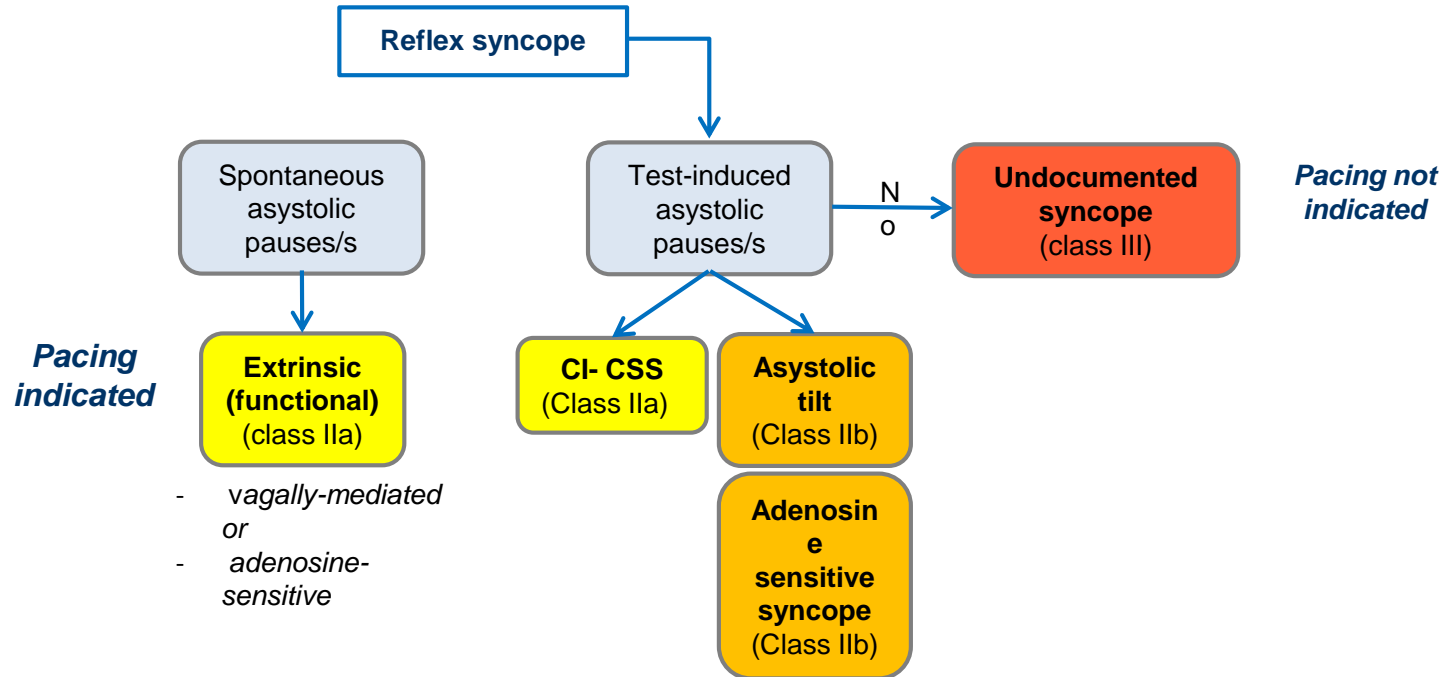


- CAROTID SINUS MASSAGE
- TILT TABLE TEST
- LOOP RECORDER

Cardiac pacing in different clinical settings

	Expected 2-year syncope recurrence rate	Clinical setting	
	High efficacy ($\leq 5\%$ recurrence rate)	Established bradycardia	no hypotensive mechanism
	Moderate efficacy (5% to 25% recurrence rate)	Established bradycardia	<i>and</i> hypotensive mechanism
	Low efficacy ($> 25\%$ recurrence rate)	Suspected bradycardia	<i>and</i> hypotensive mechanism

Pacing for reflex syncope





Pacing for reflex syncope: decision pathway

