

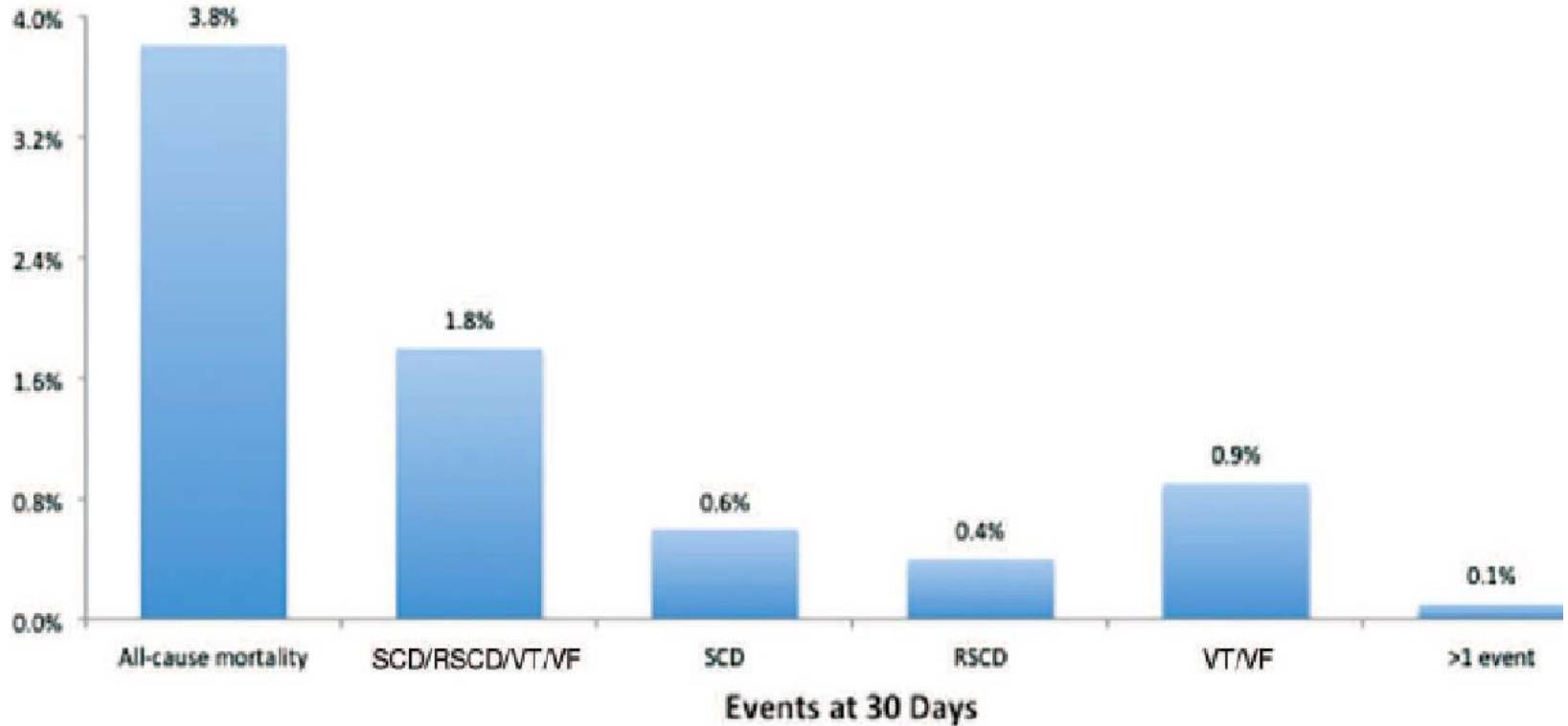
# **XỬ TRÍ RỐI LOẠN NHỊP TIM TRONG SUY TIM CẤP**

**GS.TS. HUỖNH VĂN MINH**

**Phó Chủ tịch Phân hội Rối loạn nhịp tim Việt nam**

**MỞ ĐẦU**

# Các biến cố trong vòng 30 ngày sau nhập viện do ST



# Các yếu tố khởi phát suy tim cấp

Acute coronary syndrome.

Tachyarrhythmia (e.g. atrial fibrillation, ventricular tachycardia).

Excessive rise in blood pressure.

Infection (e.g. pneumonia, infective endocarditis, sepsis).

Non-adherence with salt/fluid intake or medications.

Bradyarrhythmia.

Toxic substances (alcohol, recreational drugs).

Drugs (e.g. NSAIDs, corticosteroids, negative inotropic substances, cardiotoxic chemotherapeutics).

Exacerbation of chronic obstructive pulmonary disease.

Pulmonary embolism.

Surgery and perioperative complications.

Increased sympathetic drive, stress-related cardiomyopathy.

Metabolic/hormonal derangements (e.g. thyroid dysfunction, diabetic ketosis, adrenal dysfunction, pregnancy and peripartum related abnormalities).

Cerebrovascular insult.

Acute mechanical cause: myocardial rupture complicating ACS (free wall rupture, ventricular septal defect, acute mitral regurgitation), chest trauma or cardiac intervention, acute native or prosthetic valve incompetence secondary to endocarditis, aortic dissection or thrombosis.

# Bệnh sinh loạn nhịp nhanh trong suy tim cấp

<i>Structural and Hemodynamic Abnormalities</i>	Myocardial scar Left ventricular hypertrophy Left ventricular stretch
<i>Metabolic Abnormalities</i>	Neurohormonal activation Electrolyte abnormalities
<i>Electrophysiologic Changes</i>	Prolongation of action potential Changes of calcium homeostasis Changes of potassium current
<i>Others</i>	Pharmacologic agents Myocardial ischemia

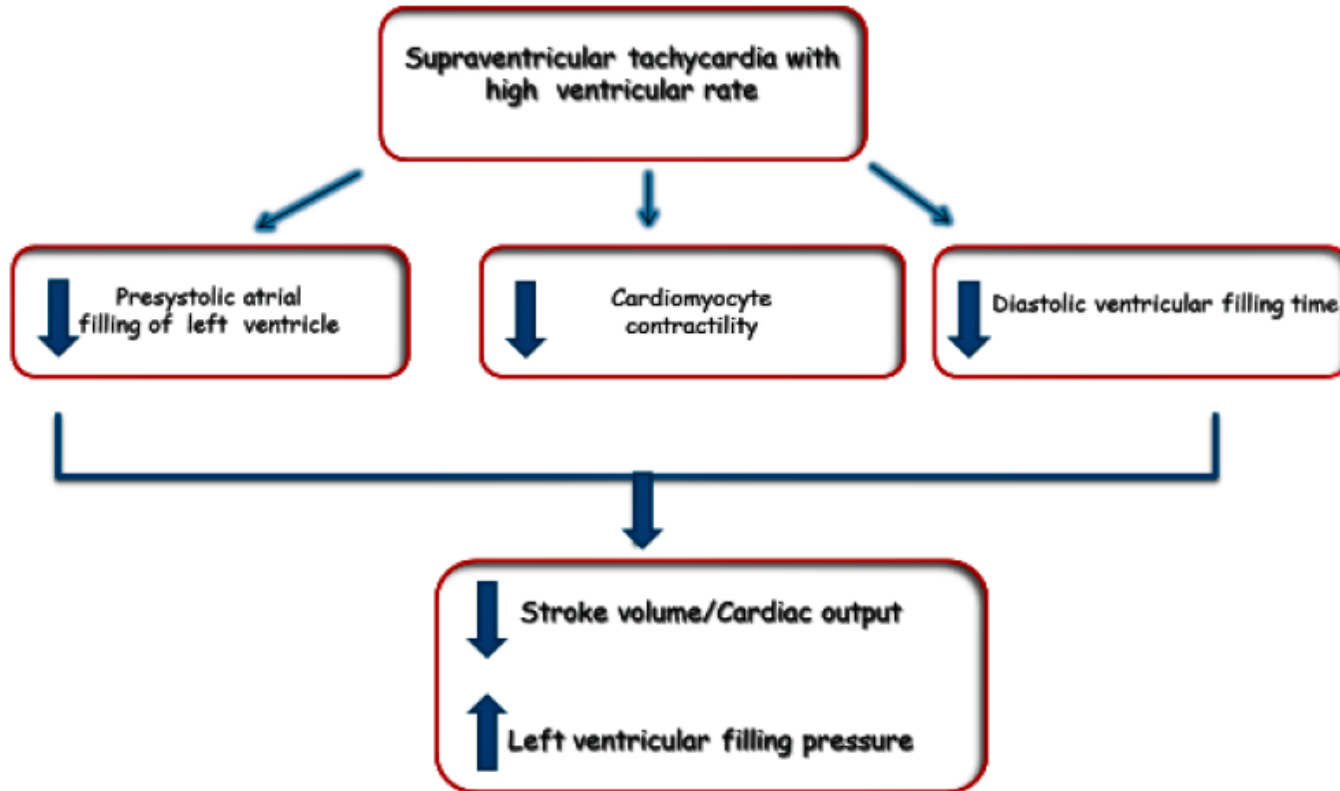
# NỘI DUNG

1. Loạn nhịp trên thất.
2. Loạn nhịp thất.
3. Loạn nhịp chậm

# NỘI DUNG

1. **Loạn nhịp trên thất.**
2. Loạn nhịp thất.
3. Loạn nhịp chậm

# Ảnh hưởng huyết động của nhịp nhanh trên thất



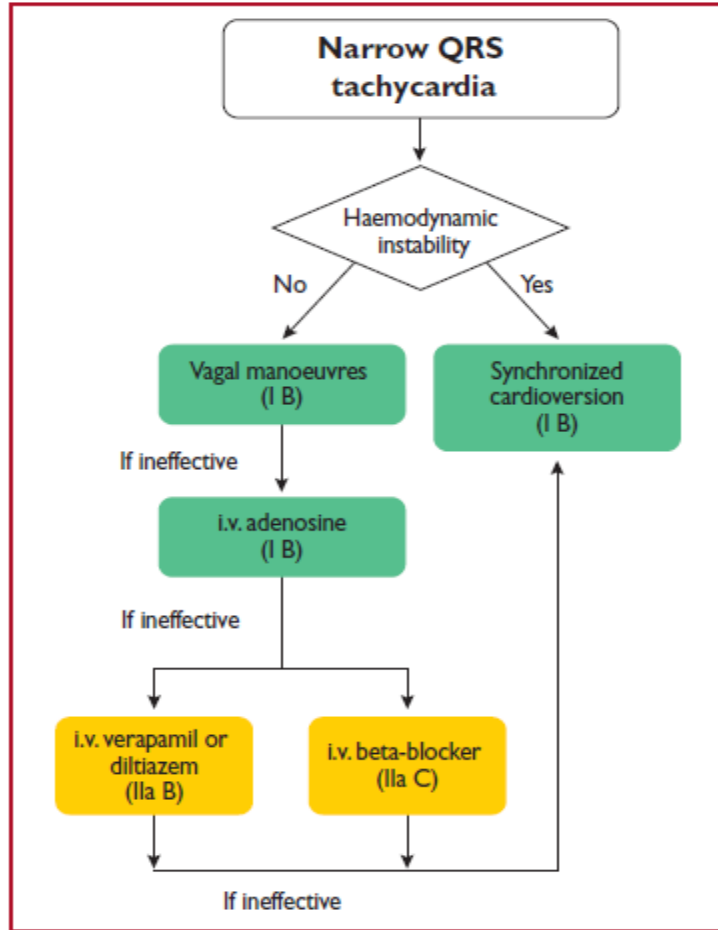


# Điều trị NNTrT ở bệnh nhân ST do bệnh cơ tim nhịp nhanh (tachycardiomyopathy)

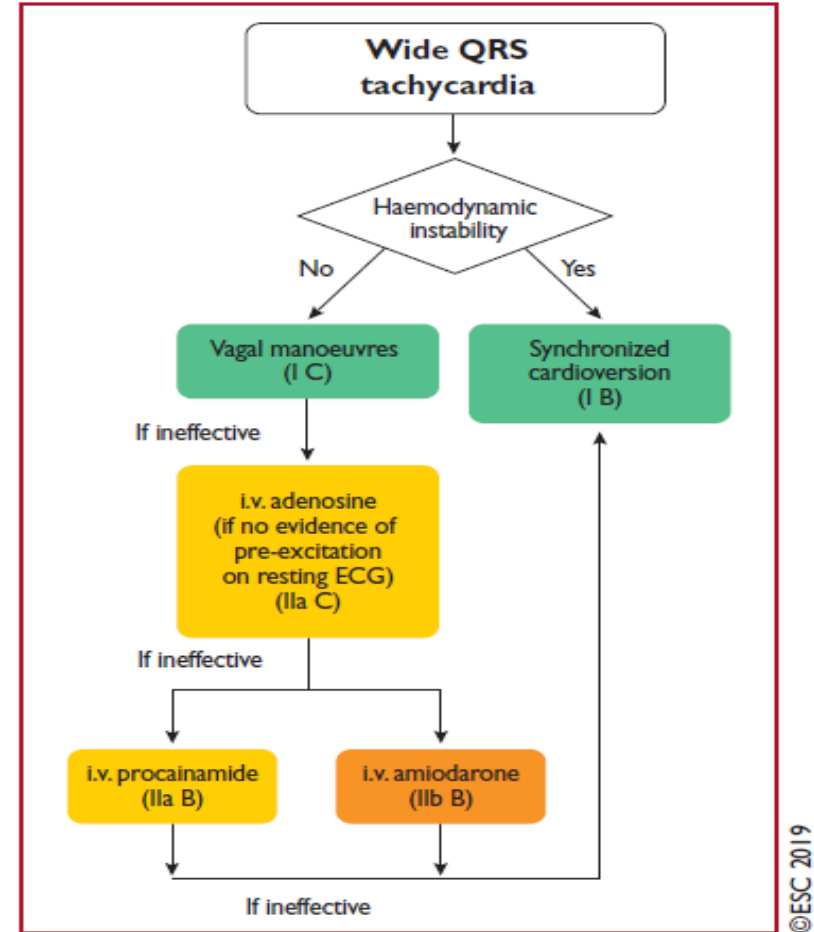
Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
<b>Catheter ablation</b> is recommended for tachycardiomyopathy due to SVT.	<b>I</b>	<b>B</b>
<b>Beta-blockers</b> (from the list with proven mortality and morbidity benefits in HFrEF) are recommended for tachycardiomyopathy due to SVT, when catheter ablation fails or is not applicable.	<b>I</b>	<b>A</b>
It is recommended to consider tachycardiomyopathy in patient with reduced LVEF with an elevated heart rate (>100 bpm).	<b>I</b>	<b>B</b>

©ESC

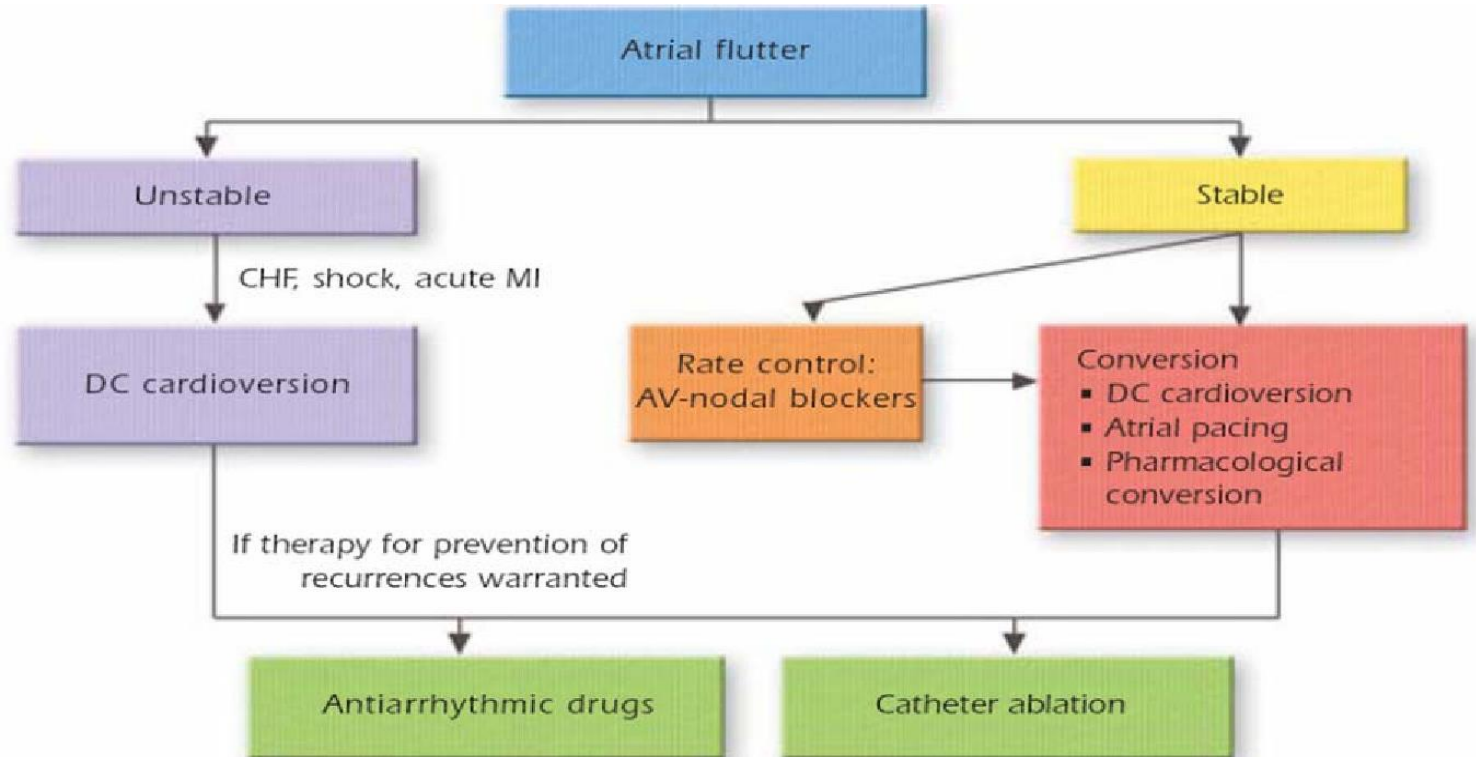
# Nhịp nhanh với QRS hẹp



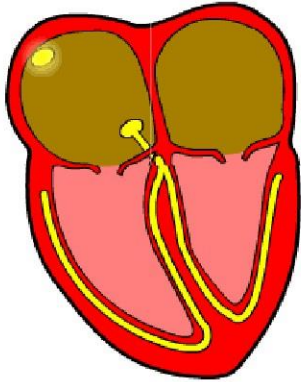
# Nhịp nhanh với QRS rộng

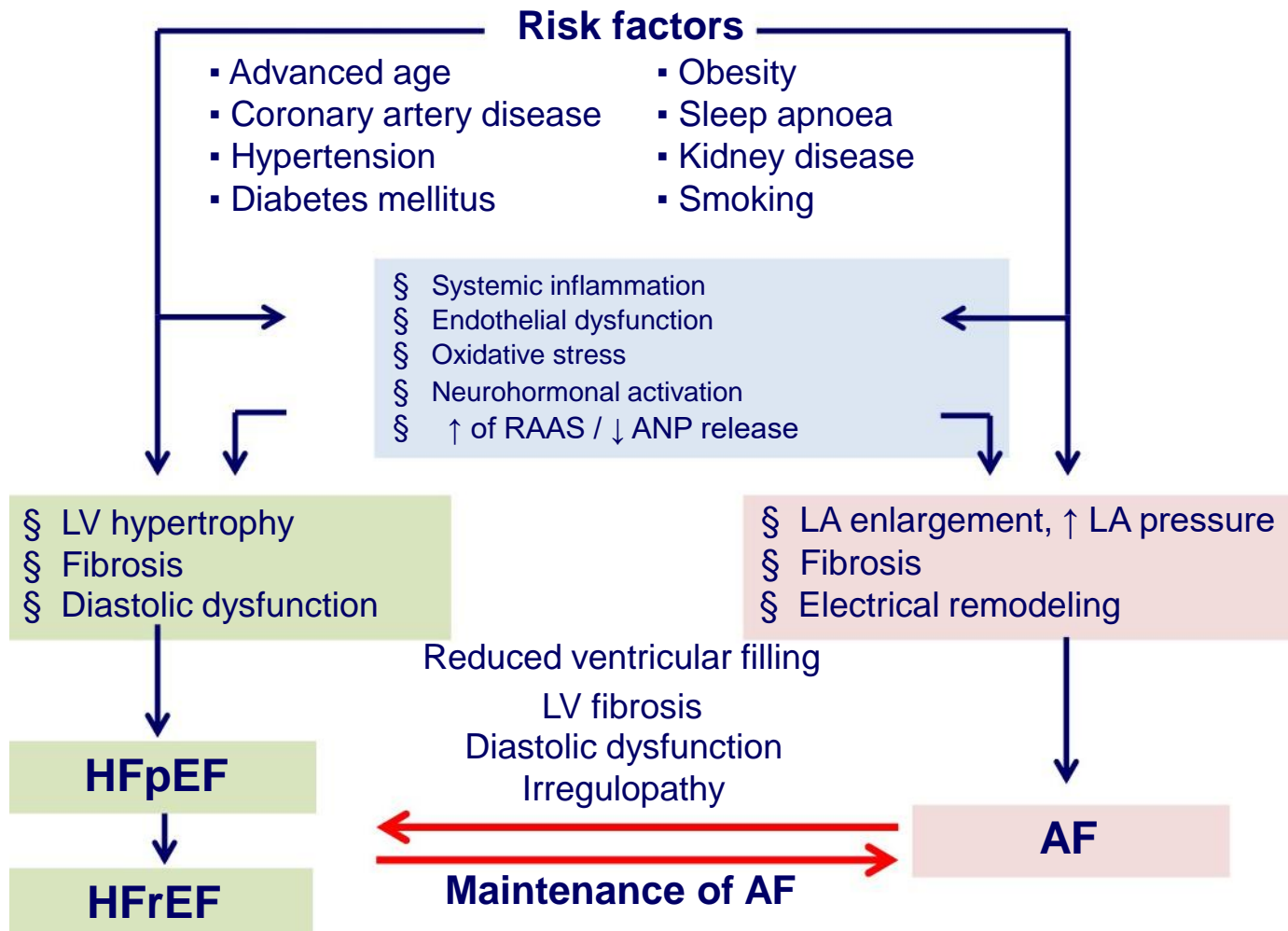


## Xử trí cuồng nhĩ theo huyết động ổn định hay không ?

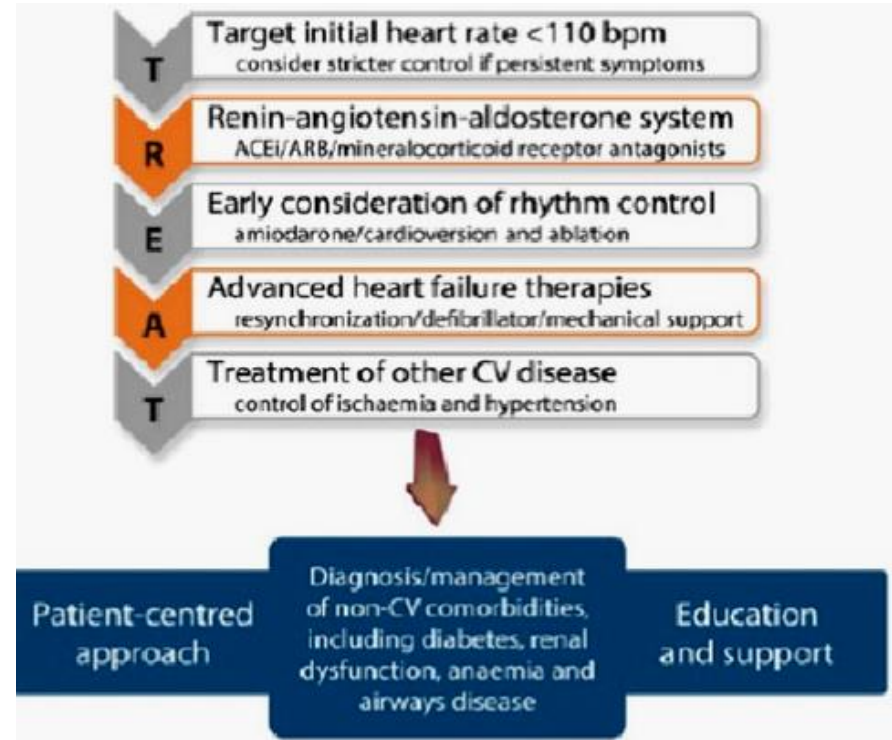
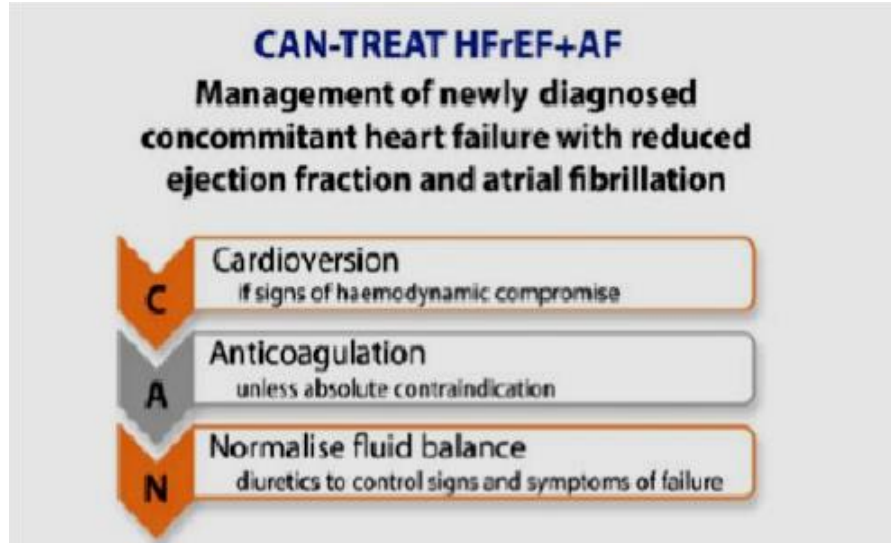


# Rung nhĩ và suy tim

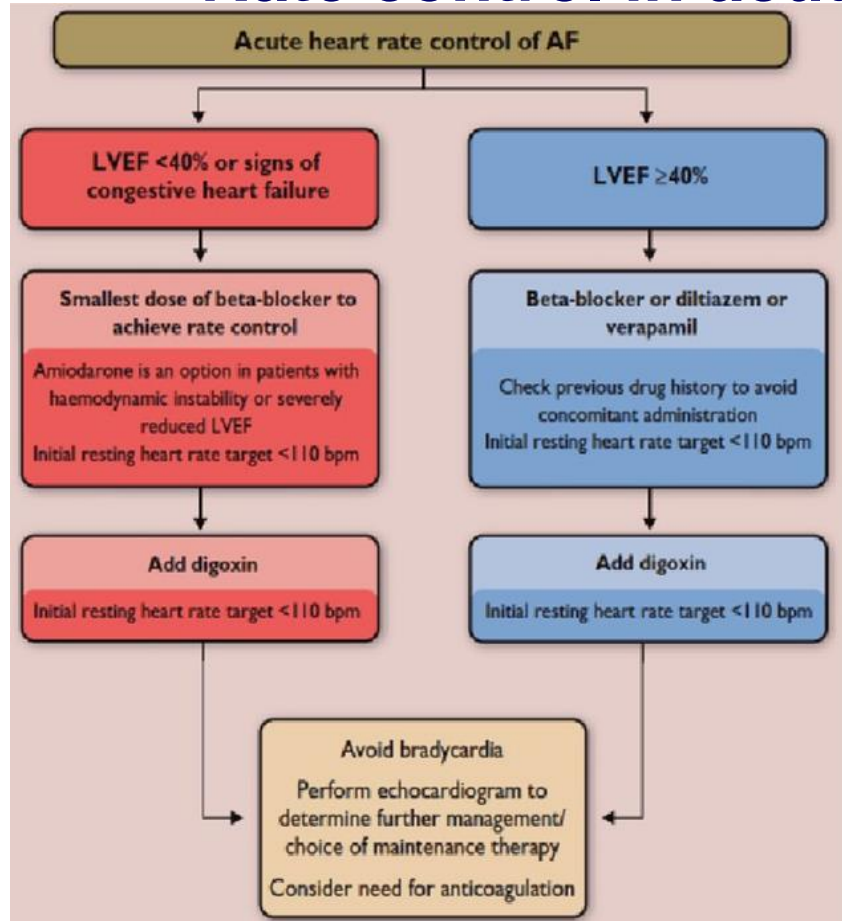




# Nguyên tắc xử trí RN trong ST



# Rate control in acute heart failure



**Look for triggers:**

Ischemia

Valve disease

Infection

Hyperthyroidism

Others

**Treat them !**

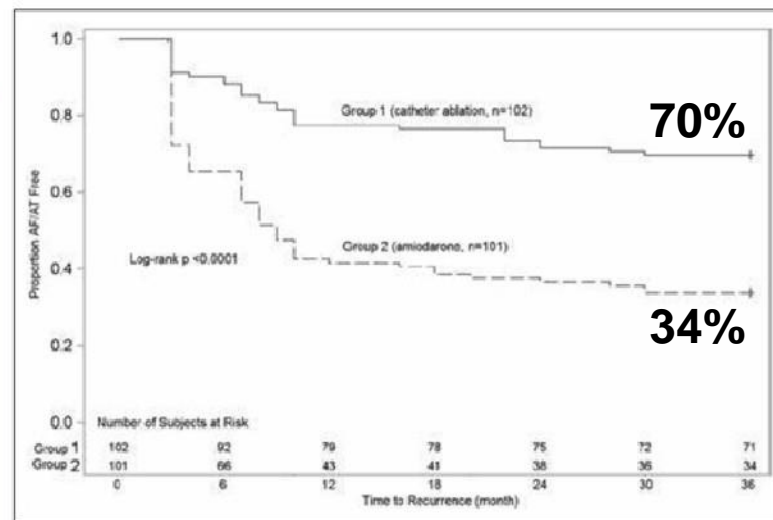
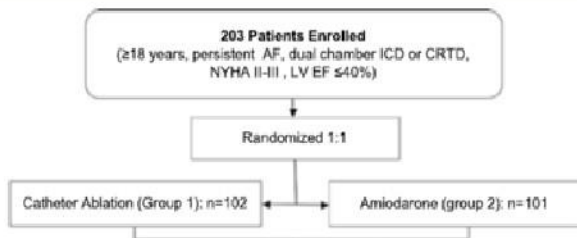
**Do not focus only on the ECG !**



# Ablation Versus Amiodarone for Treatment of Persistent Atrial Fibrillation in Patients With Congestive Heart Failure and an Implanted Device

## Results From the AATAC Multicenter Randomized Trial

Di Biase Circulation, 2016;133:1637-1644



	Ablation	Amiodarone	p	RR	NNT
Unplanned Hospitalization	32	58	<0.01	0.55	3.8
All causes deaths	8	18	0.037	0.44	10

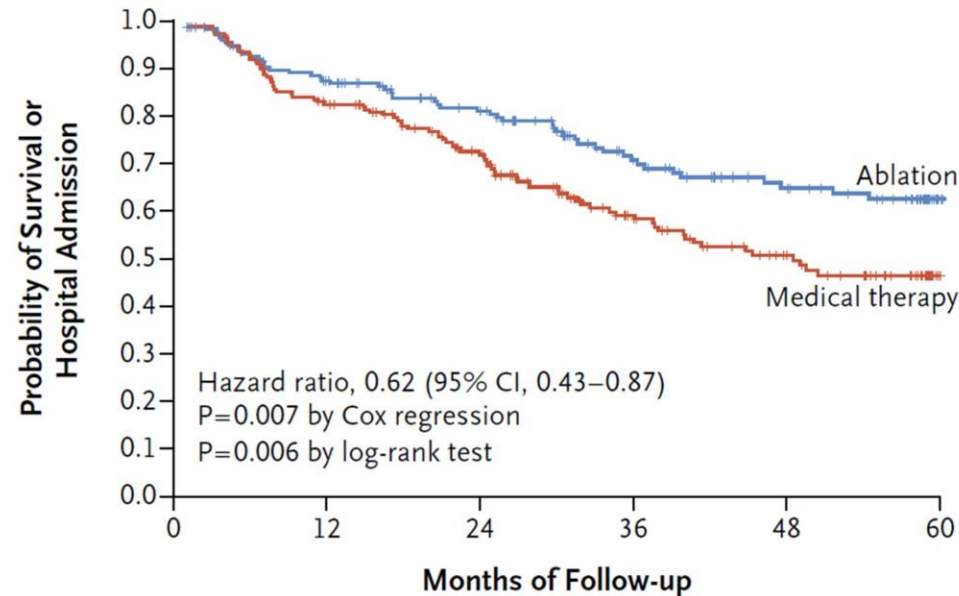
Success rate of ablation in the different centers after a single procedure ranged from 29% to 61%.



# CASTLE-AF

Catheter Ablation versus Standard conventional Treatment in patients with Left ventricular dysfunction and Atrial Fibrillation

Paroxysmal/persistent AF, LVEF  $\leq 35\%$ , NYHA class II-IV, ICD/CRT-D with atrial sensing & home monitoring facilities



## No. at Risk

Ablation	179	141	114	76	58	22
Medical therapy	184	145	111	70	48	12

Marrouche et al *N Engl J Med.*  
2018;378:17-427

# Catheter Ablation in HF

Recommendation for Catheter Ablation in HF		
COR	LOE	Recommendation
<b>IIb</b>	<b>B-R</b>	<p>AF catheter ablation may be reasonable in selected patients with symptomatic AF and HF with reduced left ventricular (LV) ejection fraction (HFrEF) to potentially lower mortality rate and reduce hospitalization for HF.</p> <p><b>NEW:</b> New evidence, including data on improved mortality rate, has been published for AF catheter ablation compared with medical therapy in patients with HF.</p>

# Anticoagulation Regimen – Balancing Risks and Benefits

Recommendations for Selecting an Anticoagulant Regimen—Balancing Risks and Benefits		
COR	LOE	Recommendations
I	A	<p>For patients with AF and an elevated CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 2 or greater in men or 3 or greater in women, oral anticoagulants are recommended.</p> <p>Options include:</p> <ul style="list-style-type: none"> <li>• Warfarin (LOE: A)</li> <li>• Dabigatran (LOE: B)</li> <li>• Rivaroxaban (LOE: B)</li> <li>• Apixaban (LOE: B) or</li> <li>• Edoxaban (LOE: B-R)</li> </ul> <p><b>MODIFIED:</b> This recommendation has been updated in response to the approval of edoxaban, a new factor Xa inhibitor. More precision in the use of CHA<sub>2</sub>DS<sub>2</sub>-VASc scores is specified in subsequent recommendations. The LOEs for warfarin, dabigatran, rivaroxaban, and apixaban have not been updated for greater granularity as per the new LOE system. (Section 4.1. in the 2014 AF Guideline) The original text can be found in Section 4.1 of the 2014 AF guideline. Additional information about the comparative effectiveness and bleeding risk of NOACs can be found in Section 4.2.2.2.</p>
	B	
	B	
	B	
	B-R	

# Percutaneous Approaches to Occlude the LAA

Recommendation for Percutaneous Approaches to Occlude the LAA		
COR	LOE	Recommendation
<b>IIb</b>	<b>B-NR</b>	<p>Percutaneous LAA occlusion may be considered in patients with AF at increased risk of stroke who have contraindications to long-term anticoagulation.</p> <p><b>NEW: Clinical trial data and FDA approval of the Watchman device necessitated this recommendation.</b></p>

# Cardiac Surgery – LAA Occlusion/Excision

Recommendation for Cardiac Surgery—LAA Occlusion/Excision		
COR	LOE	Recommendation
<b>IIb</b>	<b>B-NR</b>	<p>Surgical occlusion of the LAA may be considered in patients with AF undergoing cardiac surgery, as a component of an overall heart team approach to the management of AF.</p> <p><b>MODIFIED: LOE was updated from C to B-NR because of new evidence.</b></p>

# NỘI DUNG

1. Loạn nhịp trên thất.
2. **Loạn nhịp thất.**
3. Loạn nhịp chậm

## The management of ventricular tachyarrhythmias in heart failure

Recommendations	Class	Level
Potential aggravating/precipitating factors (e.g. low serum potassium/magnesium, ongoing ischaemia) should be sought and corrected in patients with ventricular arrhythmias.	<b>IIa</b>	<b>C</b>
Treatment with beta-blocker, MRA and sacubitril/valsartan reduces the risk of sudden death and is recommended for patients with HFrEF and ventricular arrhythmias (as for other patients) (see Section 7).	<b>I</b>	<b>A</b>
Implantation of an ICD or CRT-D device is recommended for selected patients with HFrEF (see Section 8).	<b>I</b>	<b>A</b>
Several strategies should be considered to reduce recurrent symptomatic arrhythmias in patients with an ICD (or in those who are not eligible for ICD), including attention to risk factors and optimal pharmacological treatment of HF, amiodarone, catheter ablation and CRT.	<b>IIa</b>	<b>C</b>
Routine use of antiarrhythmic agents is not recommended in patients with HF and asymptomatic ventricular arrhythmias because of safety concerns (worsening HF, proarrhythmia, and death).	<b>III</b>	<b>A</b>

# Devices in Heart Failure

## HF With Reduced Ejection Fraction

COR	LOE	Recommendation for HFrEF
<b>IIa</b>	<b>B-NR</b>	1. In patients with HFrEF who are awaiting heart transplant and who otherwise would not qualify for an ICD (e.g., NYHA class IV and/or use of inotropes) with a plan to discharge home, an ICD is reasonable.

## Left Ventricular Assist Device

COR	LOE	Recommendation for Patients With an LVAD
<b>IIa</b>	<b>C-LD</b>	1. In patients with an LVAD and sustained VA, an ICD can be beneficial.



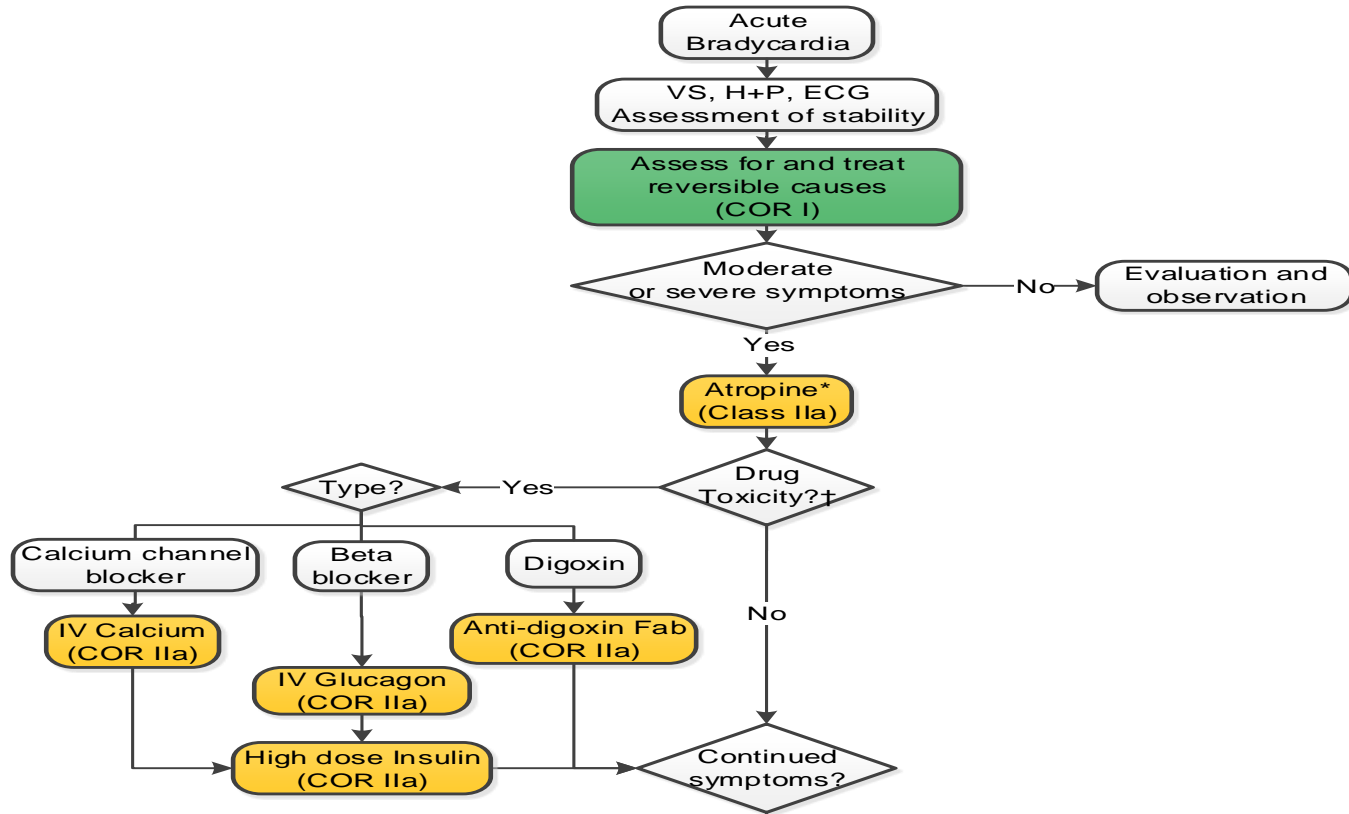
# NỘI DUNG

1. Loạn nhịp trên thất.
2. Loạn nhịp thất.
3. **Loạn nhịp chậm**

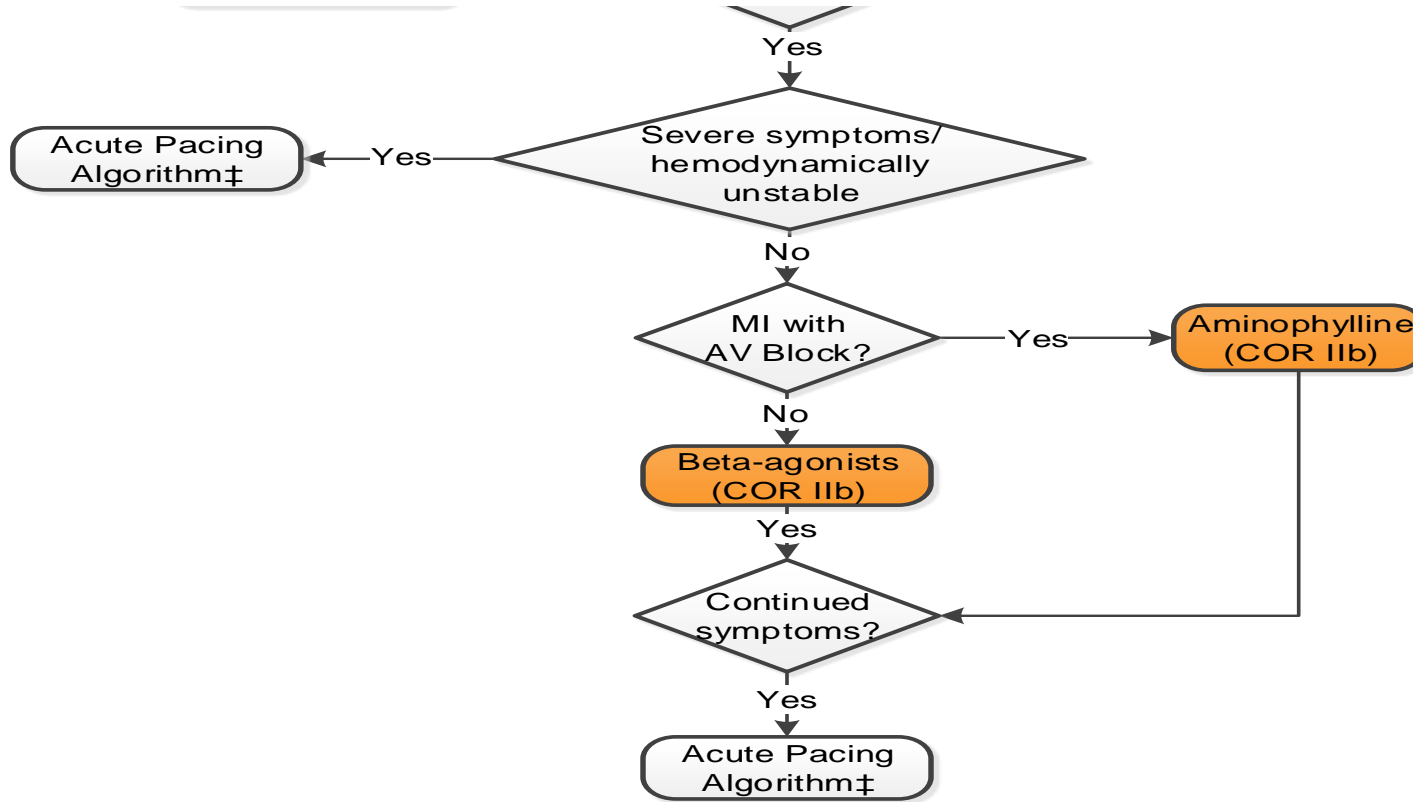
## Medications That Can Induce/Exacerbate Bradycardia or Conduction Disorders

Antihypertensive	Antiarrhythmic	Psychoactive	Other
<ul style="list-style-type: none"> <li>• <b>Beta-adrenergic receptor blockers</b> (including beta-adrenergic blocking eye drops used for glaucoma)</li> <li>• Clonidine</li> <li>• Methyldopa</li> <li>• Non-dihydropyridine calcium channel blockers</li> <li>• Reserpine</li> </ul>	<ul style="list-style-type: none"> <li>• Adenosine</li> <li>• Amiodarone</li> <li>• Dronedarone</li> <li>• Flecainide</li> <li>• Procainamide</li> <li>• Propafenone</li> <li>• Quinidine</li> <li>• Sotalol</li> </ul>	<ul style="list-style-type: none"> <li>• Donepezil</li> <li>• Lithium</li> <li>• Opioid analgesics</li> <li>• Phenothiazine antiemetics and antipsychotics</li> <li>• Phenytoin</li> <li>• Selective serotonin reuptake inhibitors</li> <li>• Tricyclic antidepressants</li> </ul>	<ul style="list-style-type: none"> <li>• Anesthetic drugs (propofol)</li> <li>• Cannabis</li> <li>• <b>Digoxin</b></li> <li>• <b>Ivabradine</b></li> <li>• Muscle relaxants (e.g., succinylcholine)</li> </ul>

# Acute Bradycardia Algorithm



# Acute Bradycardia Algorithm



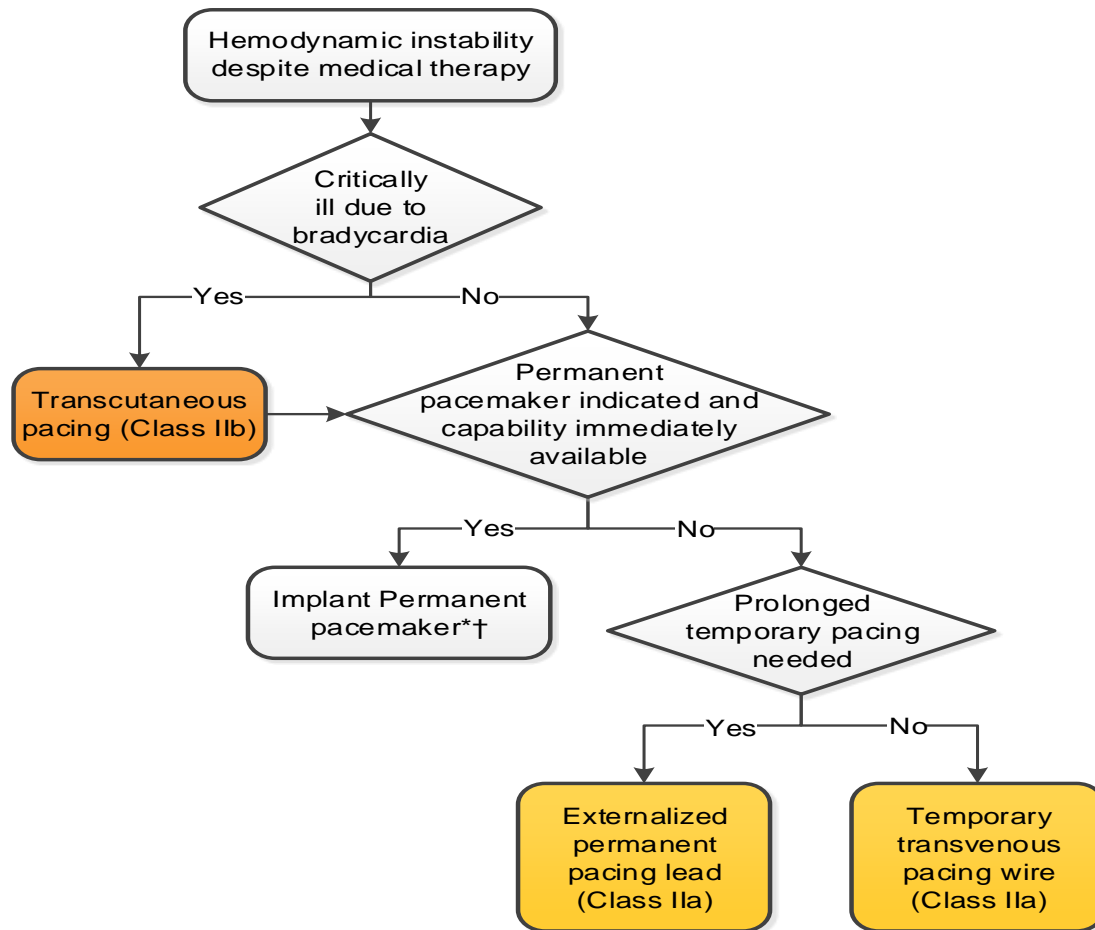
# Acute Medical Management of Bradycardia Attributable to SND or AV Block

Symptomatic sinus bradycardia or atrioventricular block	
Atropine	0.5-1 mg IV (may be repeated every 3-5 min to a maximum dose of 3 mg)
Dopamine	5 to 20 mcg/kg/min IV, starting at 5 mcg/kg/min and increasing by 5 mcg/kg/min every 2 min
Isoproterenol	20-60 mcg IV bolus followed doses of 10-20 mcg, or infusion of 1-20 mcg/min based on heart rate response
Epinephrine	2-10 mcg/min IV or 0.1-0.5 mcg/kg/min IV titrated to desired effect
Calcium channel blocker overdose	
10% calcium chloride	1-2 g IV every 10-20 min or an infusion of 0.2-0.4 mL/kg/h
10% calcium gluconate	3-6 g IV every 10-20 min or an infusion at 0.6-1.2 mL/kg/h
Beta-blocker or calcium channel blocker overdose	
Glucagon	3-10 mg IV with infusion of 3-5 mg/h
High dose insulin therapy	IV bolus of 1 unit/kg followed by an infusion of 0.5 units/kg/h
Digoxin overdose	
Digoxin antibody fragment	Dosage is dependent on amount ingested or known digoxin concentration

## Acute Medical Management with Theophylline or Aminophylline for Bradycardia Attributable to SND or Atrioventricular Block

Second- or third-degree atrioventricular block associated with acute inferior MI	
Aminophylline	250 mg IV bolus
<b>Post-heart transplant</b>	
Aminophylline	6 mg/kg in 100-200 mL of IV fluid over 20-30 min
Theophylline	300 mg IV, followed by oral dose of 5-10 mg/kg/d titrated to effect
<b>Spinal cord injury</b>	
Aminophylline	6 mg/kg in 100-200 mL of IV fluid over 20-30 min
Theophylline	Oral dose of 5-10 mg/kg/d titrated to effect

# Acute Pacing Algorithm



# KẾT LUẬN

- Rối loạn nhịp tim trong suy tim cấp thường gặp, góp phần nặng thêm của suy tim.
- Xử trí cần chú ý độ nặng của suy tim như dựa vào EF, các bệnh lý phối hợp.
- Việc chỉ định các phương tiện trong điều trị loạn nhịp tim như cắt đốt, ICD, CRT có xu hướng mở rộng hơn khi các nội khoa tối ưu không đáp ứng./.



**Cám ơn sự theo dõi của quý đại biểu.  
Hẹn gặp lại tại Hội Nghị Loạn Nhịp Tim Toàn quốc tại Huế  
vào tháng 8/2020**

