Pearls and Pitfall in managing acute chest pain

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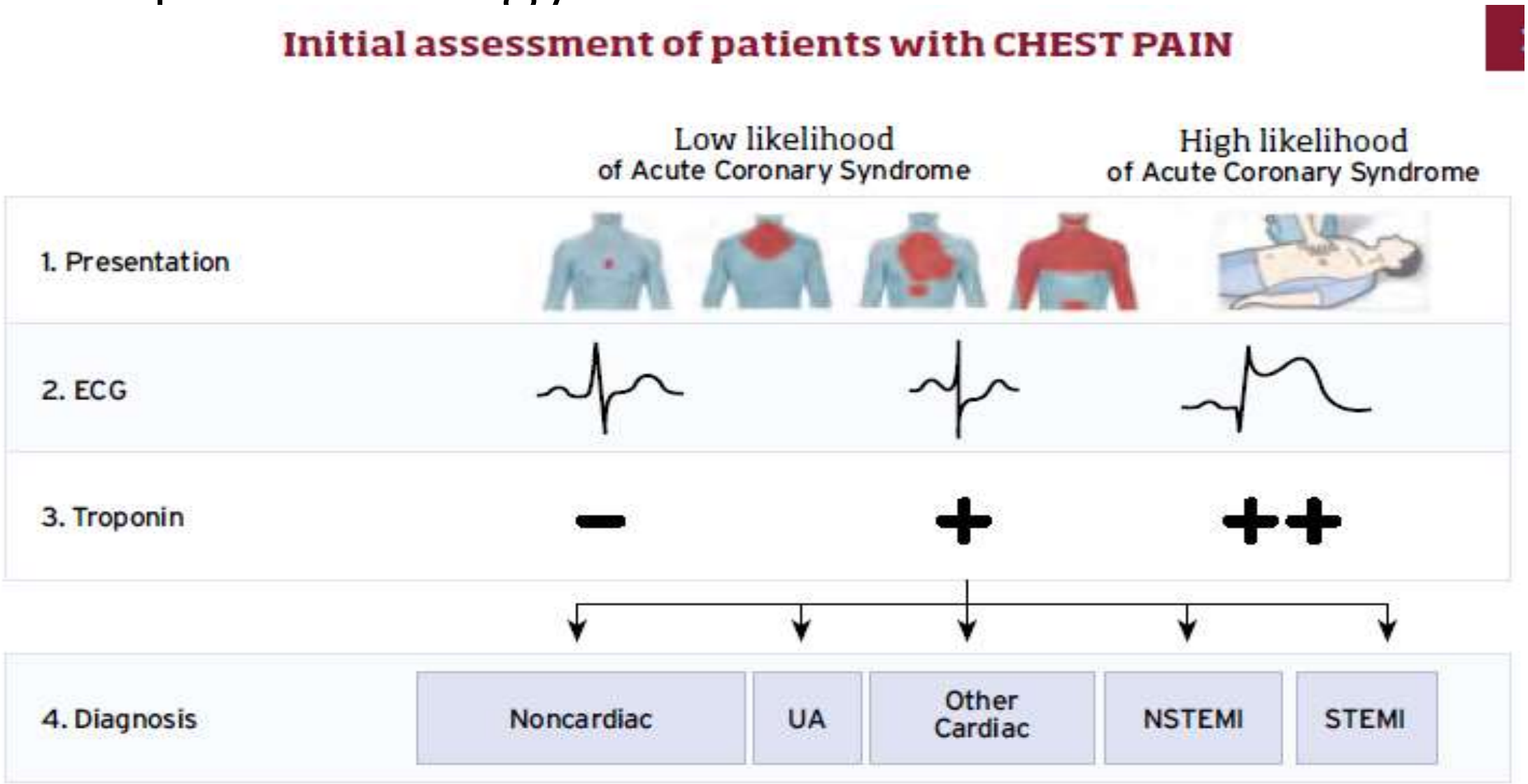
Chest Pain Perception

- Nyeri dada
- Masuk angin
- Angin duduk
- Rasa tidak nyaman di dada
- Sesak nafas

Chest pain etiology



ence: Roffi et al. Eur Heart J 2015; eurhearti.ehv320.

Mengancam Nyawa	Tidak Mengancam Nyawa
Sindrom Koroner Akut	Angina Pektoris Stabil
Diseksi Aorta	Perikarditis
Emboli Paru	Refluks Esophageal
	Penyakit katup jantung
	Hiperetrofi kardiomiopati
	Muskuloskeletal

Cardiovascular Emergencies. Amal Mattu (ed). ACEP. 2017

Typical Features of Various Chest Pain

Cause of pain	Type of pain	Referred pain	Response to posture/movement	Response to food/fluid	Tenderness	Response to nitroglycerin
Ischaemic cardiac pain	Visceral	Yes	No	No	No	Yes
Non-ischaemic cardiac pain	Visceral	Yes	No	No	No	No
Pulmonary disease	Visceral/cutaneous	Usually no	No	No	No	No
Pneumothorax	Visceral/cutaneous	No	Yes	No	Usually no	No
Musculoskeletal	Cutaneous	No	Yes	No	Yes	No
Gastrointestinal	Visceral	Sometimes	No	Yes	No	No
Aortic aneurysm	Visceral	Yes	No	No	No	No
Psychiatric	Visceral/cutaneous variable	No	No	No	No	No

Visceral Pain

- Non localized
- Burning and crushing sensation
- Radiating pain

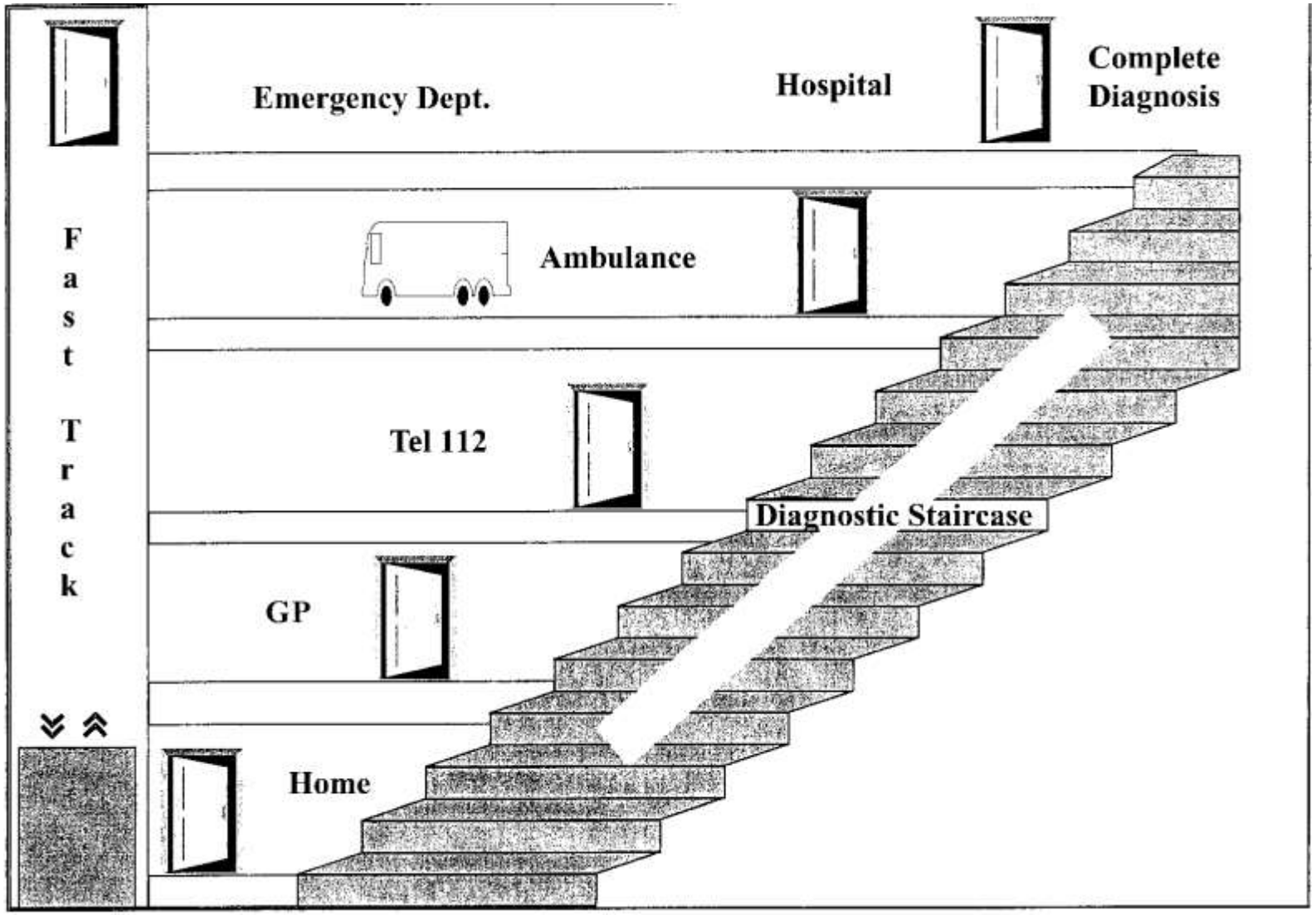
Why the pain is radiating ?

- Afferent visceral fibers from the heart, lungs great vessels, and esophagus enter the same thoracic dorsal ganglia
- Radiation of pain is caused by somatic afferent fibers synapsing in the same dorsal root ganglia

Acute Coronary Syndromes

Deficit oxygen supply to heart muscle because of low perfusion supply or increase in demand

Five Door of Diagnostic Opportunity



Eur Heart J, Vol. 23, issue 15, August 2002

Pitfalls

Acute Dyspnue equal to chest pain

Pitfalls : Atypical or no chest pain at all

- More common among women (42%) than Men (31%)
- Advance age
- Diabetes
- Heart failure
- Non Caucasian races

Pitfalls : Exacerbation of Chronic Disease can overlap the ACS

- Acute Exacerbation of COPD
- Acute exacerbation of Asthma
- CKD overload
- Acute decompensated heart failure
- Da costa syndrome in Depression/anxiety

Pitfalls : delayed Presentation and delayed ECG

- Traditional concept of chest pain and traditional management
- No ECG in Puskesmas
- No ECG in Ambulance
- Low accessible ECG in ED

Pearls

- Identify Traditional Risk Factors
  - Hypertension
  - Dyslipidemia
  - Diabetes Mellitus
  - Family history of coronary artery disease
  - Smoking or history of smoking

TABLE 3-1. LIKELIHOOD OF SIGNIFICANT CORONARY ARTERY DISEASE IN PATIENTS WITH SYMPTOMS SUGGESTIVE OF UNSTABLE ANGINA

High Likelihood (85-99%)	Intermediate Likelihood (15-84%)	Low Likelihood (1-14%)
Any of the following features	**Absence of high-likelihood features and any of the following**	**Absence of high- or intermediate- likelihood features but may have**
History of prior AMI, sudden death, or other known history of CAD	Definite angina; males <60 or females <70 y of age	Chest pain classified as probably not angina
Definite angina: males ≥60 or females ≥70 y of age	Probable angina: males ≥60 or females ≥70 y of age	One risk factor other than diabetes
Transient hemodynamic or ECG changes during pain	Chest pain probably not angina in patients with diabetes	T-wave flattening or inversion <1 mm in leads with dominant R waves
Variant angina (pain with reversible ST-segment elevation)	Chest pain probably not angina and 2 or 3 risk factors other than diabetes	Normal ECG
ST-segment elevation or depression ≥1 mm	Extracardiac vascular disease	
Marked symmetric T-wave inversion in multiple precordial leads	ST depression 0.05-1 mm T-wave inversion ≥1 mm in leads with dominant R waves	

Abbreviations: AMI = acute myocardial infarction; CAD = coronary artery disease; ECG = electrocardiogram.

Source: Braunwald E, Mark DB, Jones RH, et al: Unstable Angina: Diagnosis and Management. Clinical Practice Guideline No. 10 (amended). AHCPR Publication No. 94-0602. Rockville, MD, Agency for Health Care Policy and Research and the National Health, Lung and Blood Institute, Public Health Service, U.S. Department of Health and Human Services, 1994.

Pearls : Typical Presentation

- Crushing chest pain in the middle chest
- Cresendo
- Abrupt during resting state or minimal effort or after activities
- Dyspnea
- Diaphoresis
- Radiating pain
- The pain do not resolve after rest/ ISDN sublingual/oxygen

Pearls

- Early ECG (< 10 minutes) for
  - Chest pain
  - Dyspnoe
  - Geriatric with weakness
  - ECG on Prehospital

Pearls : Observation protocol

- Red Zone for two hours
- **Observe of progressive sign and symptoms**
- Nasal cannule
- Iv line stand by (optional)
- Initial ECG and ECG after 2 hours observation
- Nitrat sub lingual (optional)
- Pre test probability
- POCT : blood sugar

Pearls : Using ultrasound to detect cardiac hypokinetic or other cardiac conditions

FIGURE 1-1.

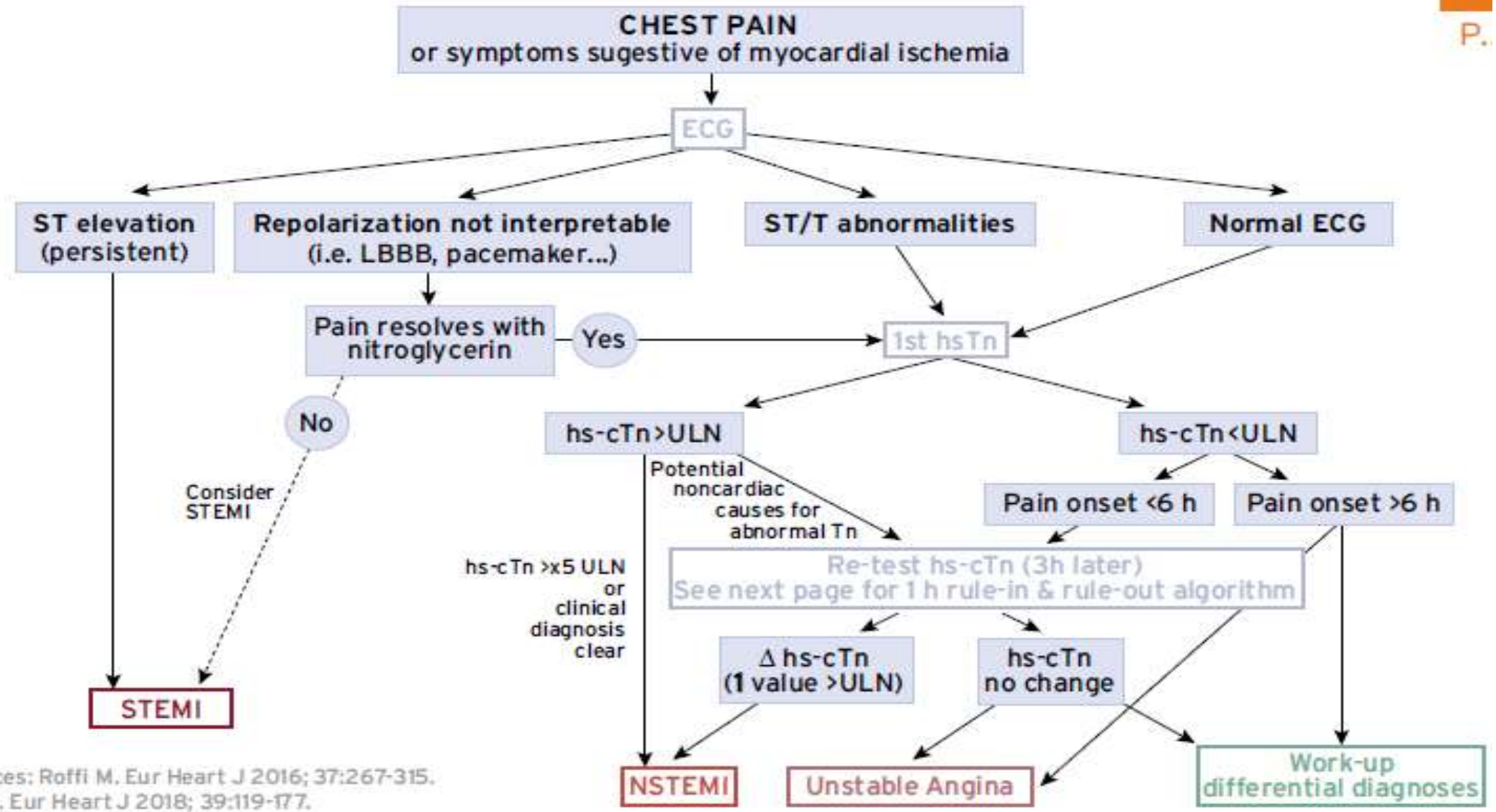
Right heart strain; note dilated right ventricle. Photo courtesy of K. Kelley.

FIGURE 1-2.

Echocardiographic image of a patient with a pericardial effusion. Photo courtesy of K. Kelley.

Clinical Decision Making

ACUTE CORONARY SYNDROMES: Diagnosis (1)



References: Roffi M. Eur Heart J 2016; 37:267-315.
Ibañez B. Eur Heart J 2018; 39:119-177.