

معاونت آموزشی مرکز آموزشی و درمانی ضیائیان برگزار می کند:

ژورنال کلاب با عنوان:

# Transient loss of consciousness

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استاد راهنما:

آقای دکتر احسان سخاوتی مقدم

عضو هیئت علمی گروه آموزشی قلب

ارائه دهندگان:

-آقای دکتر کورش فرزین (دستیار گروه آموزشی پزشکی خانواده)

-خانم دکتر ساجده رضایی منش (کارورز گروه آموزشی قلب)

لینک وبینار:

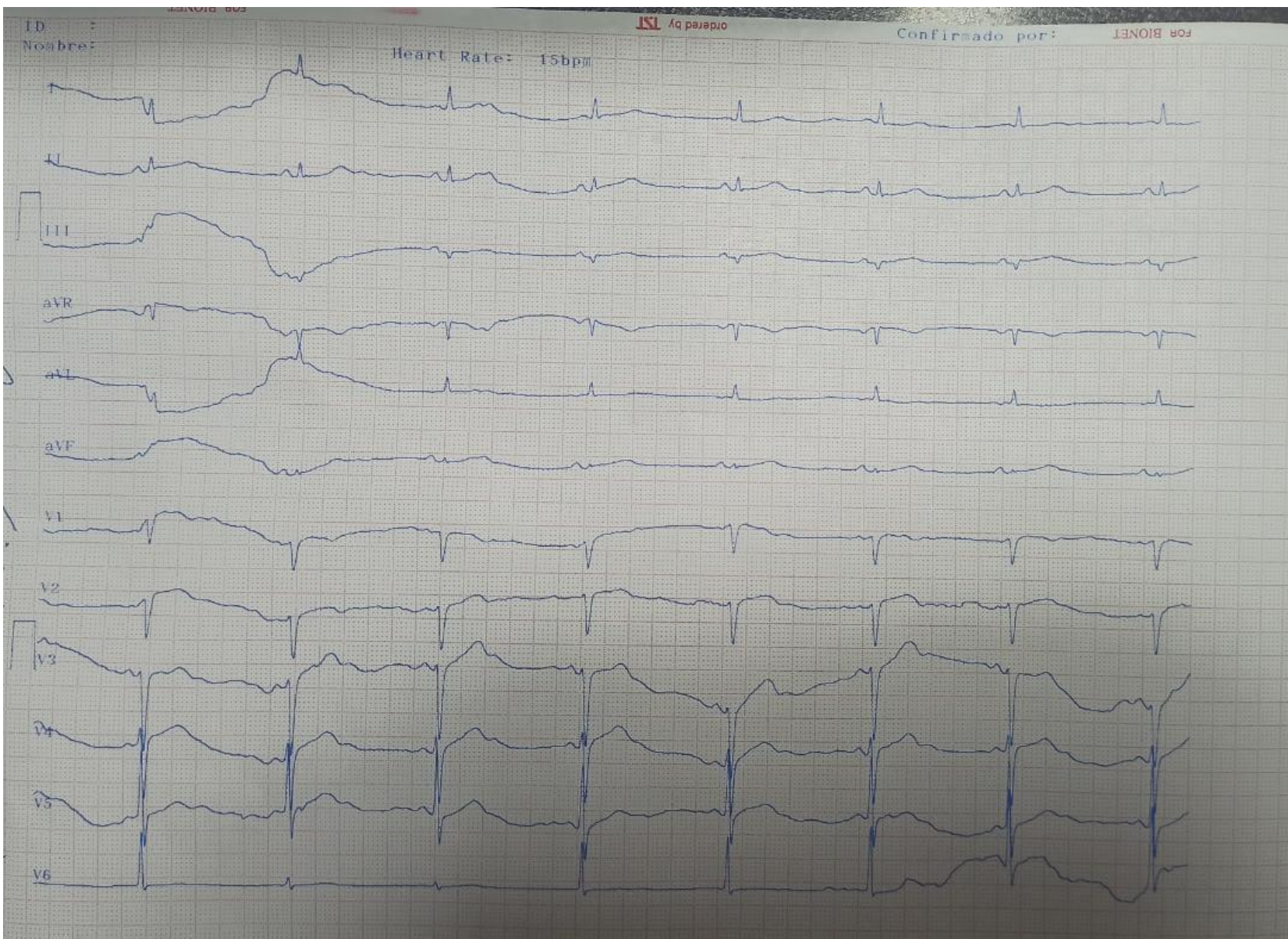
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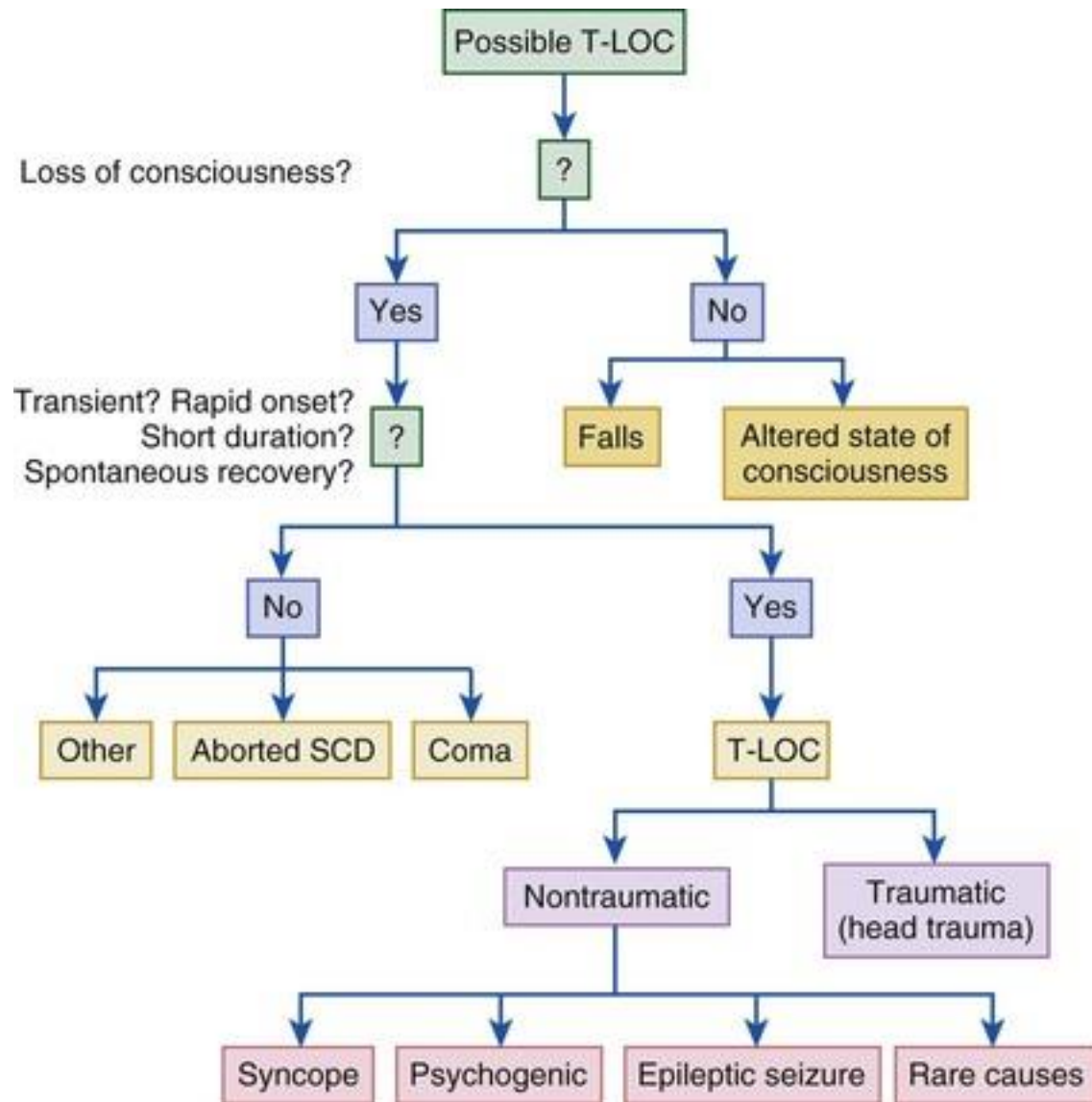


- بی‌مار آقای ۴۲ ساله ای است که با شکایت یک نوبت کاهش سطح هوشیاری ناگهانی مراجعه کرده است.
- بی‌مار هفته گذشته به دنبال بی‌دار شدن از خواب بصورت ناگهانی دچار کاهش سطح هوشیاری شده. به گفته مادر ناگهان به زمین خورد و پس از پاشیدن آب به صورتش حدودا پس از یک دقیقه به هوش آمده که وی را بلافاصله شناخته است.
- در PMH سابقه یک نوبت CVA یک سال قبل را ذکر می‌کند.
- Drug history سابق مصرف متادون، اسپرین، آتورواستاتین و سدیم والپروات دارد.
- Physical exam سمع ری و قلب نرمال دارد.
- سی‌تی اسکن ری بی‌مار نرمال بوده و یافته پاتولوژی یک خاصی روی ت









# **Transient loss of consciousness**

## **LOC**

- **Syncope is a transient loss of consciousness associated with loss of postural tone, followed quickly by a spontaneous return to baseline neurologic function requiring no resuscitative efforts.**
- **The underlying mechanism**
- **TLOC is caused by a period of inadequate cerebral nutrient flow**
- **Recovery from true syncope is usually complete and rapid**



# CAUSES OF SYNCOPE

**C**ardiac 

- Structural
- Arrhythmia

**O**rthostatic

**N**eurocardiogenic 

- Vasovagal
- Micturition/Defecation
- Carotid Hypersensitivity
- Cough Syncope

**S**eizure

**N**europathic (Dysautonomia) 

- Autoimmune/Paraneoplastic
- Chronic/toxic (diabetes)
- Post-viral
- Neurodegenerative
- POTS

**O**ther (Mechanical, Glucose)

**C**erebrovascular (Vertebrobasilar ischemia)

# causes that are **not** syncope

- Seizures
- Sleep disturbances, including narcolepsy and cataplexy.
- Accidental falls or other incidents resulting in traumatic brain injury (ie, concussion).
- Intoxications and metabolic disturbances (including hypoglycemia).
- Some psychiatric conditions (eg, conversion reactions resulting in psychogenic pseudosyncope or pseudoseizures( nonepileptic seizures) .

# CLINICAL PRESENTATION

## Syncope Symptoms

The most common warning signs and symptoms of syncope



Light-headedness



Visual disturbances  
(black spots)



Unsteadiness



Paleness



Sudden sweat



Slurred speech



- **The key factors suggesting a cardiac origin of syncope**
- **INITIAL EVALUATION**
- **History**
- **Associated symptoms preceding the event**
- **Associated symptoms following the event**
- **Preexisting medical conditions**
- **Medications**
- **Family history**
- **Physical examination**
- **DIFFERENTIAL DIAGNOSIS**
- **APPROACH TO DIAGNOSIS**



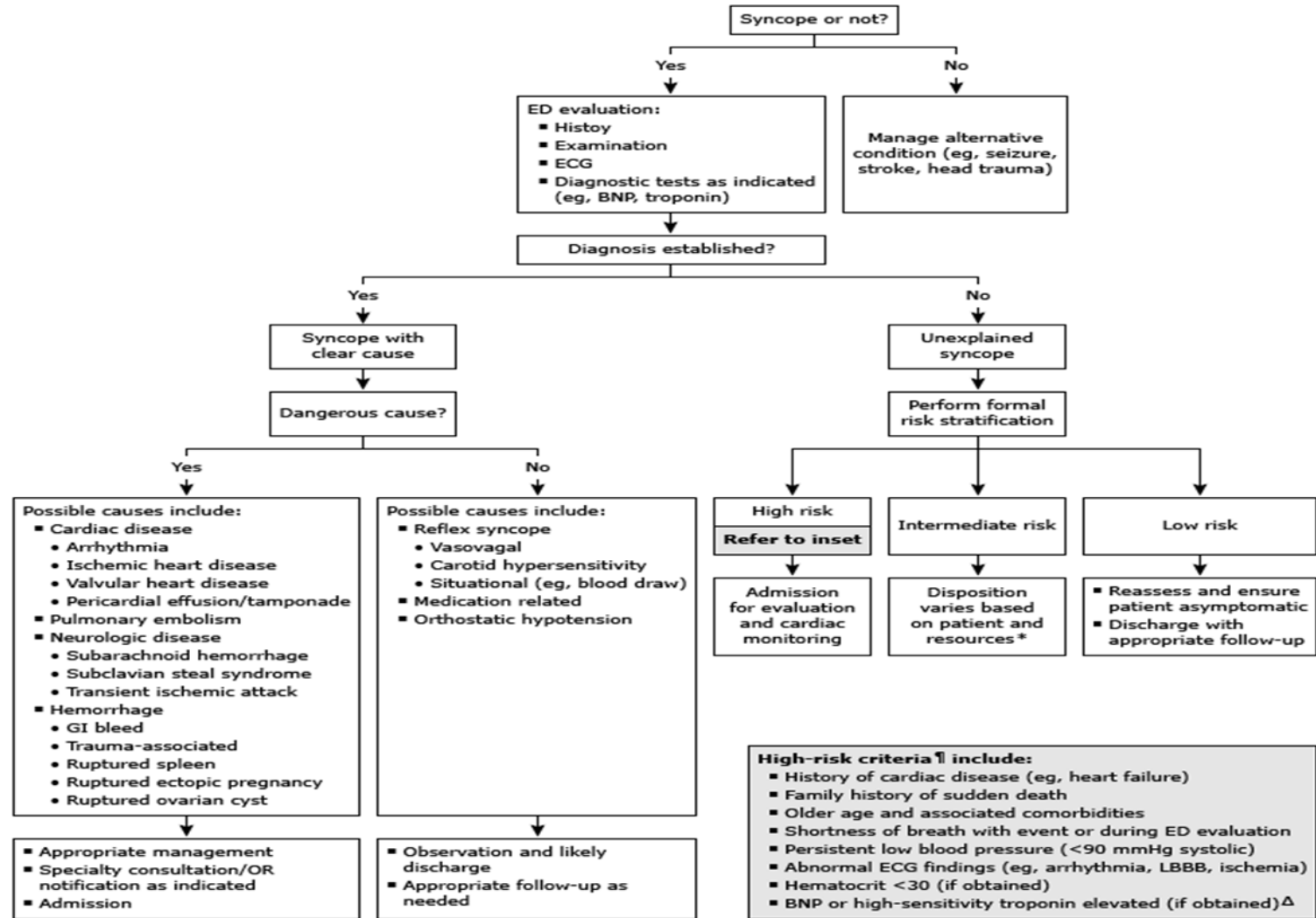
## Clinical features of syncope that suggest a cause

<b>Neurally mediated syncope:</b>
Absence of heart disease
Long history of recurrent syncope
After sudden unexpected unpleasant sight, sound, smell or pain
Prolonged standing or crowded, hot places
Nausea, vomiting associated with syncope
During a meal or post-prandial
With head rotation or pressure on carotid sinus (as in tumours, shaving, tight collars)
After exertion
<b>Syncope due to OH:</b>
After standing up
Temporal relationship with start or changes of dosage of vasodepressive drugs leading to hypotension
Prolonged standing especially in crowded, hot places
Presence of autonomic neuropathy or Parkinsonism
Standing after exertion
<b>Cardiovascular syncope:</b>
Presence of definite structural heart disease
Family history of unexplained sudden death or channelopathy
During exertion, or supine
Abnormal ECG
Sudden onset palpitation immediately followed by syncope
ECG findings suggesting arrhythmic syncope:
- Bifascicular block (defined as either LBBB or RBBB combined with left anterior or left posterior fascicular block)
- Other intraventricular conduction abnormalities (QRS duration $\geq 0.12$ s)
- Mobitz I second degree AV block
- Asymptomatic inappropriate sinus bradycardia (<50 bpm), sinoatrial block or sinus pause $\geq 3$ s in the absence of negatively chronotropic medications
- Non-sustained VT
- Pre-excited QRS complexes
- Long or short QT intervals
- Early repolarization
- RBBB pattern with ST-elevation in leads V1-V3 (Brugada syndrome)
- Negative T waves in right precordial leads, epsilon waves and ventricular late potentials suggestive of ARVC
- Q waves suggesting myocardial infarction

OH: orthostatic hypotension; ECG: electrocardiogram; LBBB: left bundle branch block; RBBB: right bundle branch block; AV: atrioventricular; bpm: beats per minute; VT: ventricular tachycardia; ARVC: arrhythmogenic right ventricular cardiomyopathy.

*Reproduced with permission from: European Heart Rhythm Association (EHRA), Heart Failure Association (HFA), Heart Rhythm Society (HRS), et al. Guidelines for the diagnosis and management of syncope (version 2009): the Task Force for the Diagnosis and Management of Syncope of the European Society of Cardiology (ESC). Eur Heart J 2009; 30:2631. Copyright © 2009 Oxford University Press.*

## Emergency department approach to an adult patient with syncope



ED: emergency department; ECG: electrocardiogram; BNP: brain natriuretic peptide; GI: gastrointestinal; OR: operating room; LBBB: left bundle branch block.

\* The disposition of patients at intermediate risk varies depending on local practice and resources, including availability of consultants and hospital or observation unit beds, and the availability of timely out-patient follow-up with ambulatory cardiac monitoring.

† For details about high-risk criteria, including tables summarizing high-risk features of the history, examination, and ECG, refer to the UpToDate topic covering assessment of syncope in the ED.

Δ BNP and high-sensitivity troponin testing is most useful in older adults and patients with heart disease. It is not needed in all patients.

## High- and low-risk factors in syncope patients

Low-risk factors	High-risk factors
<b>Characteristics of the patients</b>	
Young age (<40 years)	
<b>Characteristics of syncope</b>	
Only while standing	During exertion
Standing from supine/sitting position	In supine position
Nausea/vomiting before syncope	New onset chest discomfort
Feeling of warmth before syncope	Palpitations before syncope
Triggered by painful/emotionally distressing stimulus	Associated with dyspnea
Triggered by cough/defecation/micturition	
<b>Factors present in the history of the patient</b>	
Prolonged history (years) of syncope with same characteristics as current episode	Family history of sudden death
	Decompensated (congestive) heart failure
	Aortic stenosis
	Left ventricular outflow tract disease
	Dilated cardiomyopathy
	Hypertrophic cardiomyopathy
	Arrhythmogenic right ventricular cardiomyopathy
	Left ventricular ejection fraction <35%
	Documented ventricular arrhythmia
	Coronary artery disease/Myocardial infarction
	Congenital heart disease
	Pulmonary hypertension
ICD implantation	
<b>Symptoms, signs, or variables associated with the syncopal episode</b>	
	Anemia (Hb <9 g/dL)
	Lowest systolic blood pressure in the emergency department <90 mmHg
	Sinus bradycardia (<40 bpm)
<b>ECG features*</b>	
	New (or previously unknown) left bundle branch block
	Bifascicular block + first degree AV block
	Brugada ECG pattern
	ECG changes consistent with acute ischemia
	Non-sinus rhythm (new)
	Bifascicular block
	Prolonged QTc (>450 ms)

According to characteristics of the patient and the syncopal episode, the subject can be defined as low, high or indeterminate risk. Low risk: patients with one or more low-risk characteristics and without any high-risk characteristics. High risk: patients with at least one high-risk characteristic. Intermediate or indeterminate risk: patients without any high- or low-risk characteristics, or patients with only low-risk factors and some co-morbidities such as chronic renal failure, respiratory failure, hepatic failure, neoplasm, cerebrovascular disease or previous history of heart disease. Note that finding any of these abnormalities does not always lead to a definite diagnosis.

ICD: implantable cardioverter defibrillator; AV: atrioventricular; bpm: beats per minute; ECG: electrocardiogram.

\* Note that not all the ECG patterns are covered by the table, and some other ECG patterns could be considered in stratifying patient risk such as short QT syndrome, early repolarization, ECG findings indicating hypertrophic cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy, and incidental finding of Q wave.

Reproduced from: Costantino G, Sun BC, Barbic F, et al. Syncope clinical management in the emergency department: a consensus from the first international workshop on syncope risk stratification in the emergency department. *Eur Heart J* 2016; 37(19):1493-8. By permission of Oxford University Press on behalf of the European Society of Cardiology. Copyright © 2016. [www.escardio.org](http://www.escardio.org).



