



A REVIEW ON CLINICAL ASSESSMENT AND MANAGEMENT OF SYNCOPE

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ABSTRACT:

A brief loss of awareness and postural tone that is followed by an unplanned recovery is known as syncope. A broad range of descriptions are used by patients to characterize syncopal occurrences, some of which include fainting, blacking out, falling out, experiencing a spell, or losing consciousness. Dysrhythmia and valvular abnormalities, such as ventricular tachycardia, atrioventricular block, or severe aortic stenosis. When hypotension and hyperventilation coexist, it can result in syncope, muscle weakness, and transient unconsciousness. Any injuries received during a sudden syncope fall should be treated right away. People frequently sense the beginning of a syncope episode. They experience heart palpitations, which are irregular heartbeats that feel like "fluttering" in the chest, along with nausea and dizziness.^[1,9,11]

KEY WORDS:

Syncope, postural, dysrhythmia, aortic stenosis and fluttering, vasovagal syncope

INTRODUCTION :

A brief loss of awareness and postural tone that is followed by an unplanned recovery is known as syncope. Syncope ultimately arises from decreased cerebral perfusion, while many classification schemes are employed to better identify and address underlying diseases that may cause syncope.

Syncopal episodes can come on suddenly and without any warning signs or symptoms, or they can have other warning indications and symptoms including nausea, dizziness, lightheadedness, diaphoresis, and visual problems before them.

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What is Syncope?

Syncope (or fainting), occurs due to temporary decrease in blood flow and oxygen to the brain. It is characterized by rapid onset, short duration and spontaneous recovery.

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ETIOLOGY :

Rather than being an illness in and of itself, syncope is a symptom of an underlying medical condition. Most syncopal occurrences have a benign etiology, despite the fact that syncope mimics a death-like experience that causes significant consternation among patients and their family.

Benign causes of syncope include volume depletion, vasovagal (sometimes called neurocardiogenic), and medication-related etiologies. Dysrhythmia and valvular abnormalities, such as ventricular tachycardia, atrioventricular block, or severe aortic stenosis, are associated with more concerning reasons. The most concerning indicator of a poor etiology of a syncopal event is a history of left ventricular dysfunction (along by concurrent conduction system degeneration that increases the risk of dysrhythmias).[2,8]

CAUSES OF SYNCOPE :

The following reasons contribute to the brain's decreased blood supply:

1. Cardiovascular disorders:

- Arrhythmias of the heart (tachy and bradyarrhythmia's)
- Obstructive and structural diseases (PE, HOCM, MI, valvular abnormalities) [1]

2. Causes of cerebrovascular accidents (vertebrobasilar insufficiency) [1]

3. Vascular tone and blood flow abnormalities

- Vasovagal, or neurogenic
- Orthostatic hypotension (diminished blood flow, peripheral neuropathy, autonomic failure, and medication)
- Situational (cough, postprandial, deglutition, micturition, feces)
- syncope of the carotid sinus[1]

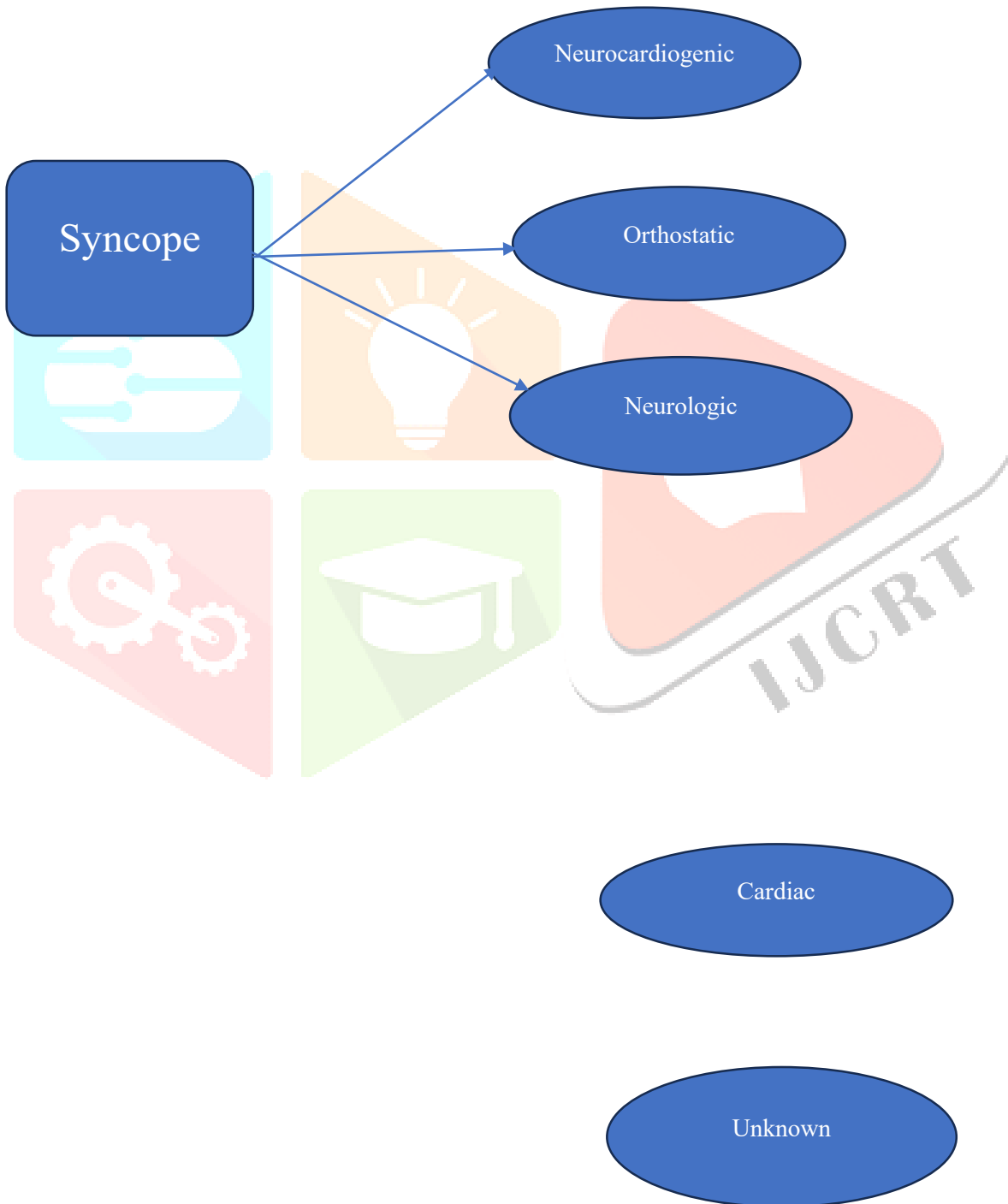
4. Others that resemble syncope

- Convulsions
- Metabolic (symptomatic anemia, hypoxia, hypoglycemia)
- Psychogenic (occasioning panic attacks) [1]

CLASSIFICATION :

Syncope can be broken down into 5 main categories:

neurocardiogenic, orthostatic, neurological, cardiac and unknown cause [2]

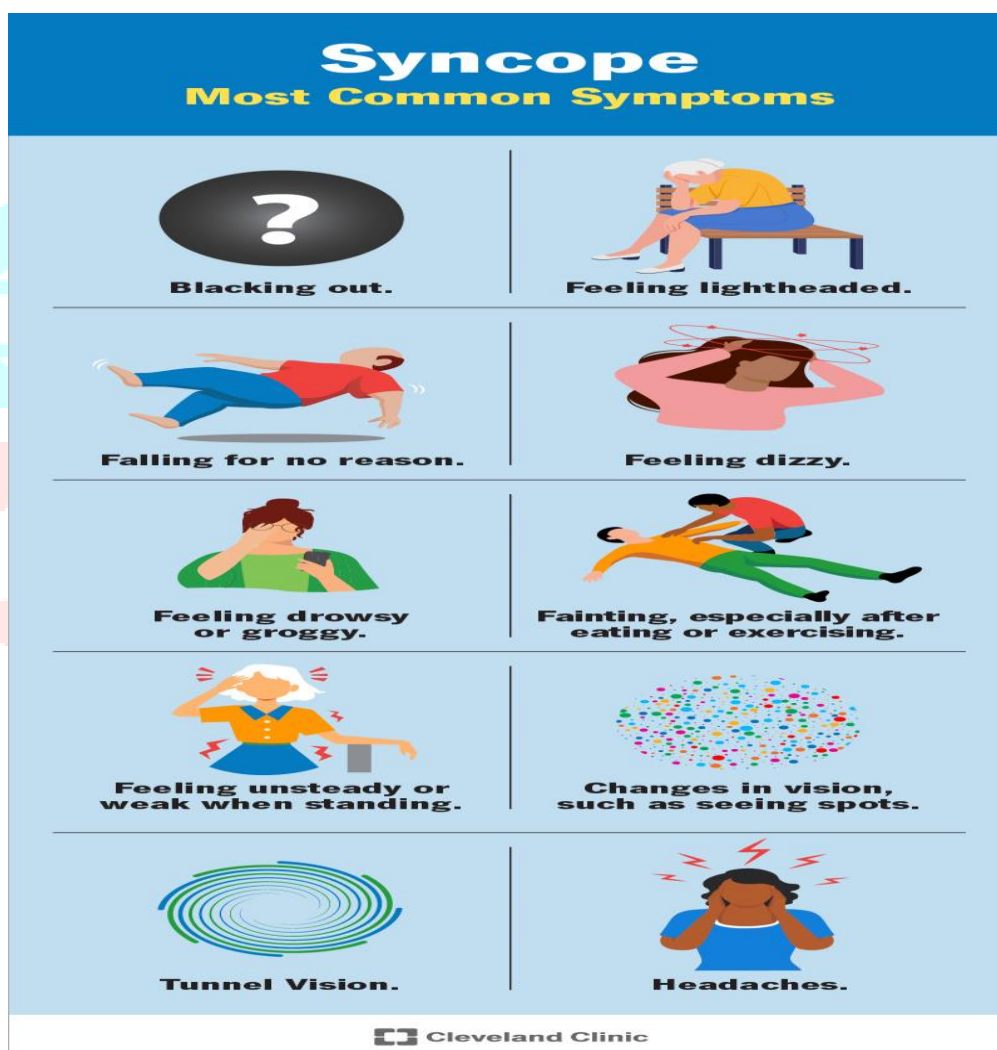


| Classification | Definition | Causes |
|------------------|---|---|
| Neurocardiogenic | Inappropriate vasodilation ± bradycardia | Increases vagal tone (951icturition, defecation); situational (prolonged standing); vagal nerve stimulation (shaving) |
| Orthostatic | Documented postural hypotension with symptoms | Drop in systolic blood pressure by ≥ 20 mmHg or tachycardia > 20 bpm; example : volume loss, dysfunction of autonomic nervous system, medication side effects |
| Neurologic | Least common, must return to baseline with no neurological defecits | Example: transient ischemic attack's, seizure, complex migraine, subclavian steal |
| Cardiac | Most dangerous form, can be life-threatening, multiple etiologies | Arrhythmias (tachy or brady), valvular heart disease, myocardial infarction, cardiac tamponade |
| Unknown | Unexplained thorough work-up | despite Rule out potential life-threatening causes |

SYMPTOMS OF SYNCOPE :

The most common syncope symptoms include :

- Blacking out
- Feeling lightheaded
- Falling for no reason
- Feeling dizzy
- Feeling drowsy or groggy
- Fainting, especially after eating or exercising
- Feeling unsteady or weak when standing
- Changes in vision, such as seeing spots or having tunnel vision [9]

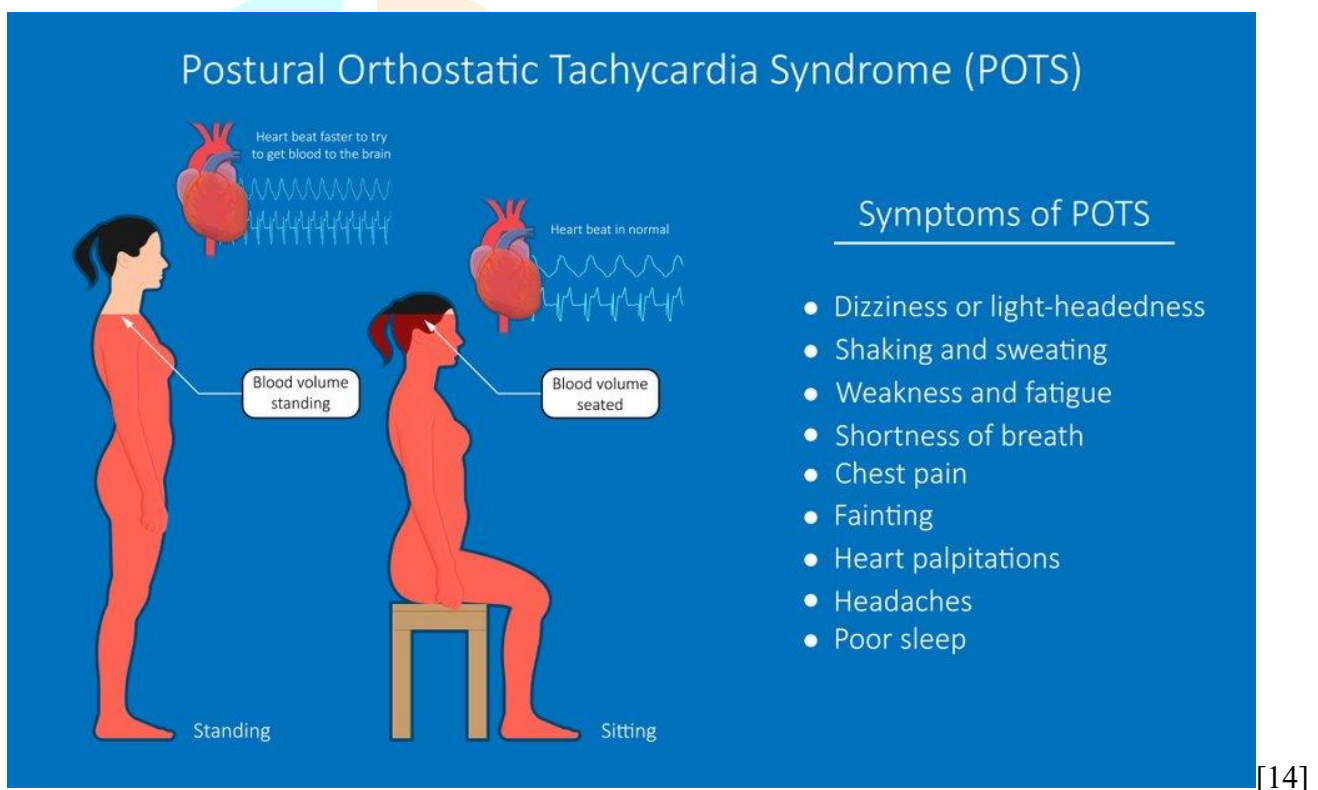


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1. Neurocardiogenic syncope : is also called vasovagal syncope

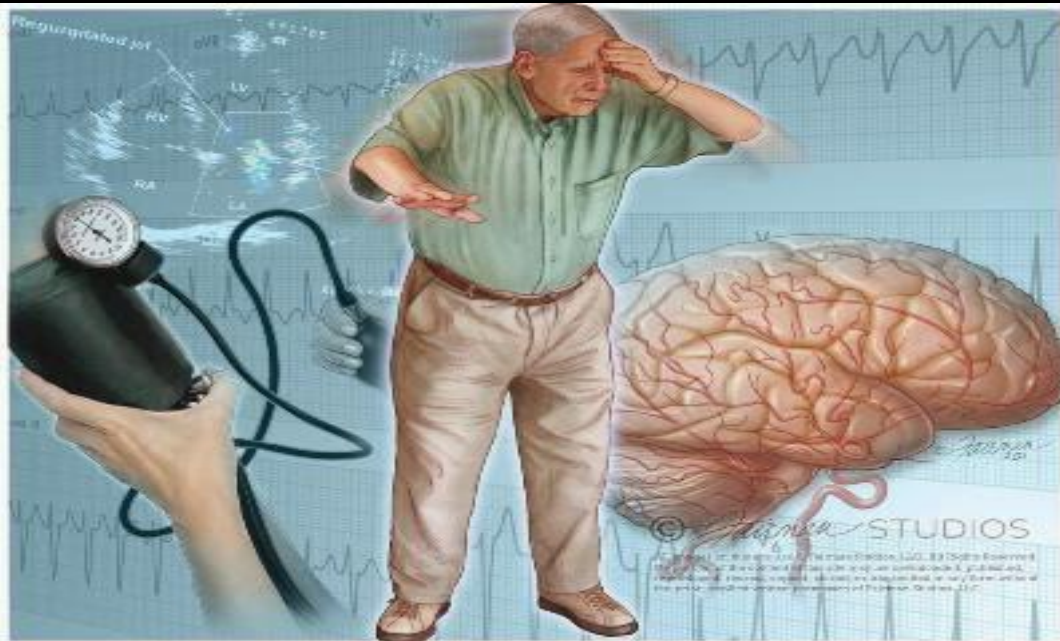


2. Postural orthostatic tachycardia syndrome : is also called postural syncope



3. Cardiac syncope :

- Abnormal heart rhythm (arrhythmia)
- Hypertrophic cardiomyopathy
- Blockage in your heart's blood vessels (myocardial ischemia)
- Valve disease
- Aortic stenosis (narrowing)
- Blood clot
- Heart failure



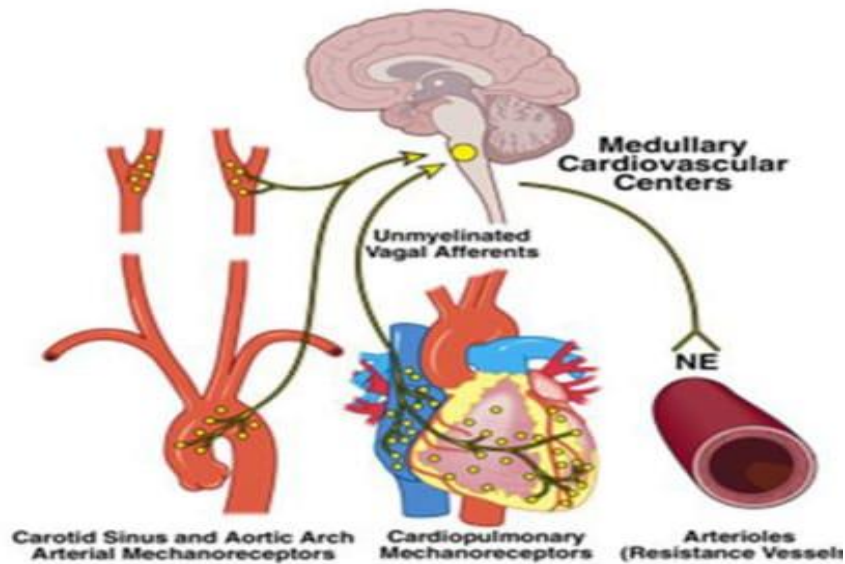
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4. neurologic syncope:

- CVA/Stroke
- Carotid stenosis
- Parkinson's disease
- Psychosis
- Seizure
- TIA/Mini stroke
- Tumor

Pathophysiology of syncope :

The brain uses syncope as a homeostatic mechanism to allow us to survive. The brain instantly stops all other non-essential bodily functions when blood and oxygen levels in the brain drop significantly. This allows the brain to concentrate its attention and resources—such as blood, oxygen, and other resources—only on the body's essential organs. The brain responds to decreased oxygen levels by making the breathing faster, or hyperventilating, in an effort to raise the oxygen levels back to normal. In order to supply the brain with more oxygen, the heart rate (or pulse) also quickens. Due to decreased blood flow to other body parts and an increase in blood flow to the brain, this elevated heart rate results in hypotension, or a drop in blood pressure, in other parts of the body. When hypotension and hyperventilation coexist, it can result in syncope, muscle weakness, and transient unconsciousness.[9]



[11]

Diagnosis :

Medical History: The physician will document the patient's physical activity, posture, and any relevant symptoms both before and after the incident. The doctor will go over the various symptoms as well. In addition, details regarding any diseases, such as cardiac issues, if they exist, and the kinds of medications taken in the past will be recorded.[9]

Physical Examination for Syncope Diagnosis: The patient will undergo a physical examination to measure blood pressure and heart rate (BP). Checking the patient's mental state, including confusion and hesitancy, is part of the general examination. The waves in the Jugular vein are closely examined. A thorough neurological examination comes next.[9]

Diagnostic Tests Performed to Identify the Cause of Syncope:

- **Electrocardiogram Test (ECG):** To check the electrical activity of the heart.
- **Carotid Sinus:** Checks the carotid sinus by rubbing the area to determine if the symptoms of dizziness and syncope are caused due to carotid sinus.
- **Blood Tests:** Blood tests are done to check for anaemia, diabetes, and other infections if any.[9]
- **Tilt-Table Test:** This examination tracks the patient's heart rate, blood pressure, and rhythm as they rise from a laying down position to an upright one. A healthy person's heart rate and blood pressure will alter when they move from a lying down to an upright position in order to guarantee that the brain receives an adequate amount of blood. This shift in posture can result in syncope if the reflexes are not functioning correctly.[9]

- **Holter Monitor Test:** During one or two days, the patient wears a portable device that records his or her heart's electrical activity and heartbeat while the patient goes about their daily business. It is tucked under garments close to the heart. The patient is advised that if a particular symptom occurs, they need to press a button to record the heart rhythms of that particular moment. This way, the doctor can view the cardiac activity of that particular situation at a later time and assess the patient's condition.[9]

Treatment :

The goal of treatment for syncope is to address the underlying cause. Patients should be forced to sit or lie down quickly during an acute episode, and raising the legs aids in recovery for those experiencing reflex postural hypotension. After the acute event, placing patients in a horizontal position and avoiding premature rising. Any injuries received during a sudden syncope fall should be treated right away.

1. Vasovagal syncope:

Conservative measures include increasing fluid and salt intake, tilt training, and avoiding triggers or situations that have caused them.

In the event that conservative measures are ineffective, drug therapy involving beta-blockers, SSRIs, hydrocortisone, promazine, and a few other medications may be helpful. [1]

2. Orthostatic syncope:

Taking a slow, deep breath and getting up from a seated and supine position.
avoiding drugs (vasodilators, diuretics) that can result in orthostatic hypotension.
Compression stockings are used to increase venous return.
intravenous fluids for individuals with low intravascular volume.
If a patient is refractory, use proamatinine. [1]

3. Cardiovascular disorders: using cardiology to treat the underlying condition.

Arrhythmias

Sinus Node Dysfunction

Such drugs ought to be stopped if the patient finds them unnecessary while they are being taken. If not, the next step in management should be to look into pacemakers. It is advised to use implantable dual-chamber pacemakers to stop syncopal episodes in the future. In theory, this result should be avoided by implanting a pacemaker.[18] Nevertheless, there hasn't been any evidence that this intervention improves overall survival, and 20% of these pacemaker recipients have recurrent syncopal episodes.

Atrioventricular Conduction System Dysfunction

Pacemaker implantation helps prevent syncope from recurring in patients with Mobitz type 2 second- or third-degree AV block. Patients with concomitant heart failure, a reduced left ventricular ejection fraction, or prolonged QRS segments on the ECG are advised to use biventricular pacing modes.(8)

Prevention of syncope :

People frequently sense the beginning of a syncope episode. They experience heart palpitations, which are irregular heartbeats that feel like "fluttering" in the chest, along with nausea and dizziness. It's likely that you can avoid fainting if you:

- Raise your legs while sitting or lying down.
- With your hands, form a fist
- Tense or tighten your arms.
- Squeeze your thighs together or cross your legs.

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