

Syncope: A Brief ReviewK. Jemini Charan^{1*}, Sunil Paul Guttula²,¹Department of Training & Development, Apollo Speciality Hospital, Nellore, Andhra Pradesh, India.²Department of Pharmacy Practice, Aditya Pharmacy College, Surampalem, Andhra Pradesh, India.**ARTICLE INFO****Article History:**

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ABSTRACT

Syncope can be described as the transient loss of consciousness due to decreased blood flow to the brain, also termed as pass out. Syncope may result from a sudden drop in blood pressure, reduced heart rate (bradycardia) or due to fluctuations in the blood volume. People are likely to become conscious and alert immediately after an episode of syncope or pass out but with little confusion. Depending on the etiology, syncope can be categorized into Vasovagal syncope (cardio-neurogenic syncope), Situational syncope, Postural syncope, Neurological syncope and Metabolic syncope. Syncope and non-syncopal conditions, with real or apparent loss of consciousness, are often differentiated in most cases with an in-depth clinical history, but this might sometimes be extremely difficult. In order to develop an effective mechanism-specific treatment, determining the mechanism of syncope is a prerequisite for advising the patients with regard to prognosis.

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Introduction

Syncope can be described as the transient loss of consciousness due to decreased blood flow to the brain, also termed as pass out. Syncope may result from a sudden drop in blood pressure, reduced heart rate (bradycardia) or due to fluctuations in the blood volume. People are likely to become conscious and alert immediately after an episode of syncope or pass out but with little confusion [1]. Diagnosing syncope is very challenging as there are many other conditions such as epileptic seizures, trauma, hypoglycemia, hyponatremia and other metabolic disturbances which mimic syncope. So taking detailed medical history always helps the clinicians to distinguish the different types of syncope with other medical conditions. The circumstances that have occurred immediately prior to the syncope attack often suggest a specific cause. So obtaining the details of prodromal phase, during the attack and the recovery phase provides a lot of information and is crucial part in the diagnosis of syncope [2].

Types of syncope

Depending on the etiology, syncope can be categorized into Vasovagal syncope (cardio-neurogenic syncope), Situational syncope, Postural

syncope, Neurological syncope and Metabolic syncope.

Vasovagal syncope

Vasovagal syncope is the most common type of syncope which is also known as cardio-neurogenic syncope. The pathophysiology of the hypotension/bradycardia reflex liable for vasovagal syncope isn't completely understood. Central mechanism and peripheral circulatory collapse are implicated in its pathogenesis; however their relative contribution isn't fully elucidated. Reflex activation triggering a rapid decrease in heartbeat and a discount of vascular tone is can be observed.

In the first moments of a vasovagal syncope an empty heart is seen in echocardiographic investigations due to an acute loss of preload (empty heart syndrome) as a result there will be no sufficient blood flow to the brain leading to syncope attack. In some cases hypoperfusion of brain for long time may cause seizure like movements.

Symptoms such as pale skin, cold & clammy sweat, blurred vision or loss of vision, lightheadedness, tunnel vision, nausea, weakness and

Tinnitus are most commonly observed, but in some people syncope may occur without any prodromal symptoms [3].

Situational syncope

It is the temporary loss of consciousness during a particular situation. There are diverse situations that trigger the situational syncope, which includes having blood drawn, straining while urinating & defecating, emotional stress, anxiety, fear, pain, hunger, excessive use of drugs & alcohol and hyperventilation. These triggers may produce vaso-vagal reflex which leads to the reduced heart rate and vasodilation of blood vessels in the lower extremities. As a result there will be low or no blood supply to brain and more blood can be pooled in the lungs, causing syncope. Nausea, excessive sweating and weakness are the most common symptoms observed in situational syncope [4].

Postural syncope

This type of syncope is most common in people with postural hypotension. In people with postural hypotension, there will be sudden decrease in blood pressure due to sudden change in body position. Postural syncope is mainly seen when there is decrease in systolic blood pressure of at least 20 mm hg and diastolic blood pressure of at least 10 mm hg when a person suddenly stands up from lying position. In people with postural hypotension there will be delayed or no constriction of blood vessels in the lower parts of the body. As a result, when a person stands up most of the blood gets pooled in the lower limbs. This pooled blood will take some time to return the heart and during this time, the heart cannot pump sufficient blood to brain leading to reduced perfusion and eventually cause syncope. Most common symptoms include dizziness and lightheadedness [5].

Neurologic syncope

This type of syncope is mainly caused due to seizure, stroke and transient ischemic attack and less commonly caused due to hydrocephalus and migraines [6].

Metabolic syncope

Metabolic syncope includes hypoglycemia, hypoxia and hyperventilation. Metabolic entities are more susceptible to alter consciousness than to cause

true syncope, but they need to be kept in mind, as they're treatable. Restlessness confusion and anxiety are common signs and symptoms of metabolic syncope as in hypoxia or hypoglycemia. Syncope can occur in any position. Pupils may be dilated in hypoxia and carpopedal spasm may accompany in hyperventilation. In hyperventilation, the patient often relates a sensation of smothering or shortness of breath in conjunction with circumoral, facial and extremity paresthesias [7].

Diagnosis

Syncope and non-syncopal conditions, with real or apparent loss of consciousness, are often differentiated in most cases with an in depth clinical history, but this might sometimes be extremely difficult. When a patient presents to the accident and emergency department, it is important to correctly differentiate benign from potentially life-threatening causes of syncope. Red flag symptoms indicating the latter include: pain, palpitations, back pain, haematemesis, melena before the syncopal episode and syncope with exercise. Palpitations before loss of consciousness are a big predictor of a cardiac explanation for syncope.

A detailed account of the event is taken from the patient or bystander. Symptoms, patient's position at the time of event, precipitating factors, duration of syncope, recovery time and case history must be considered for evaluation. Sometimes, it will be challenging for the health care professionals in differentiating the syncope and convulsion. Jerking and twitching are often seen with cardiac or vasovagal syncope. These are often differentiated from rhythmic jerking of all the limbs in tonic-clonic seizures. When the diagnosis remains uncertain, further testing is required.

Medication history should be collected properly from the patient which may provide some useful information that suggests a possible cause of the syncopal episode. Drugs that may precipitate syncopal episodes include vasodilators, diuretics, sedatives and negative chronotropes. Vasodilatory medications, such as, anti-anginal medications, anti-hypertensive agents and drugs used in the treatment of erectile dysfunction, can cause syncope because of their vasodilatory effects. Certain medication interactions which prolong the QT interval can cause abnormal cardiac dysrhythmias and may leads to syncope.



These kinds of effects due to medications are more commonly seen in elderly patients [8].

Blood tests

It looks for conditions like anemia that can contribute to fainting. A stress hormone named copeptin (CPT), and as a novel marker of acute disease, was thought to have a role in diagnosing syncope. In order to distinguish the syncope from other conditions, full blood count (FBC) and blood glucose levels can be useful for the interpretation [9].

Electrocardiogram

This test mainly records the electrical signals that the heart produces and can also detect irregular heart rhythms and other cardiac problems. The electrocardiogram (ECG) is among the key clinical variables used to evaluate the patient. Apart from providing certain electrocardiographic presentations the ECG findings can also guides the clinician to provide early therapy. Bradycardia, atrioventricular block, intraventricular conduction abnormality and tachydysrhythmia always provides with an answer for the cause of syncopal event [8].

Tilt-table test

This test allows the doctor to check the heart rate and blood pressure when you're in different positions by tilting at various angles. Tilt table test remains the valid cornerstone test modality for the diagnosis of syncope. However, great emphasis must be placed on the interpretation of tilt table test relevant to the symptoms of the patient [10].

Portable Holter monitor

This device gives a detailed 24-hour heart rhythm analysis. As of now the insertable loop recorder is usually indicated when the patient has recurrent syncopes and conventional Holter and electrophysiological testing have been negative. The Holter monitors are the small devices which can record and store the data with 2-3 ECG leads attached to the patient's chest. These devices can record the information of heart function over a course of time and can store the data for a period of 1 to 2 weeks [11].

Exercise stress test

Usually, this test is used to find out the cardiac abnormalities when the person is stressed which can

be of great used for the diagnosis of situational syncope. More commonly a treadmill is used to increase stress during this test [12].

Treatment

Treatment is required for recurrent and unpredictable who gets exposed to severe trauma. Drugs such as β -blockers, disopyramide, scopolamine, clonidine, theophylline, fludrocortisone, ephedrine, etilefrine, midodrine, clonidine, serotonin reuptake inhibitors etc can be used in the treatment & management of syncope. Reassurance and education regarding the nature of the disease and the avoidance of triggering events are required for most of the patients. In order to develop an effective mechanism-specific treatment, determining the mechanism of syncope is a prerequisite for advising the patients with regard to prognosis [8].

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