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Abstract

Syncope is a symptom which is often taken for granted and less attention is given resulting in great delay seeking medical assistance. The intensity of this symptom and treatment depends on the type of syncope and its origin. The classification of syncope goes with the causes of syncope and they are i) neutrally mediated syncope, ii) orthostatic syncope, iii) cardiac syncope, and iv) cerebrovascular syncope. This article focuses on the approach to its evaluation as well. Management of syncope is in accord to its classification is encompassed. Besides, pharmacological management, non- pharmacological measures which could be emphasized by the nursing community is elaborated.

Key words: Syncope, neutrally mediated syncope, orthostatic syncope, cardiac syncope, cerebrovascular syncope.

Introduction

Syncope is often considered with several more vague symptoms that are manifestations of many clinical conditions ¹. Syncope is a transient loss of consciousness precipitated by cerebral hypoperfusion, which is associated with the absence of postural tone and usually followed by a complete recovery within a few minutes ^{2,3}. A potentially lethal cause should be suspected in elderly. While less common, even younger individual with syncope can be at risk of death. Establishing the diagnosis of syncope is important so that specific treatment can be instituted to prevent future recurrences and eliminate the underlying predisposing disease ⁴.

Syncope is a common medical problem and accounts for approximately 3% of emergency room visits and 1-6% of hospital admissions. The prevalence of syncope increases with age of 75. In long term care institutions, the annual incidence is approximately 6% ⁵. True syncope is an abrupt but transient loss of consciousness associated with absence of postural tone followed by rapid, usually complete, recovery without the need for intervention

to stop the episode. A prodrome may be present. While alarming, this symptom is non-specific. It is generally triggered by a process that results in abrupt, transient 5–20 seconds interruption of cerebral blood flow, specifically to the reticular activating system ¹.

Patients' reactions to syncope can vary from complete lack of recognition and concern, to fear and difficulty returning to previous level of activities with complete disability. Even if syncope is benign, it can have a major impact on quality of life and may change lifestyle dramatically, independent of physicians' concerns and recommendations. The degree of functional impairment from syncope can match that of other chronic diseases, including rheumatoid arthritis, chronic back pain, or chronic obstructive lung disease ¹.

Classification and Etiology of Syncope ⁶

1. Neurally mediated (reflex) syncope

- Vasovagal syncope
- Carotid sinus syncope
- Situational syncope

2. Orthostatic syncope

- Autonomic failure
- Drug-induced orthostatic hypotension

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- Volume depletion

3. Cardiac arrhythmia–related syncope

- Sinus node dysfunction (bradycardia/tachycardia syndrome)
- Atrioventricular conduction system disease
- Paroxysmal supraventricular and ventricular tachycardias
- Wolff -Parkinson-White syndrome
- Inherited syndromes (Long QT syndrome, Brugada syndrome)
- Drug-induced proarrhythmias

4. Structural heart disease–related syncope

- Obstructive cardiac valvular disease
- Cardiomyopathy
- Atrial myxoma
- Coronary artery disease

5. Cerebrovascular syncope

- Vascular steal syndromes
- Vertebrobasilar artery disease
- Carotid artery disease

Evaluation of syncope ¹

The initial evaluation of a patient presenting a transient loss of consciousness consists of careful history, physical examination including orthostatic blood pressure measurements and standard ECG. Initial evaluation recommended in the guidelines on syncope of the European Society Cardiology is to all: history, physical examination and standard 12 lead ECG. In selected cases (when appropriate): Echocardiography, in hospital telemetric monitoring and neurological evaluation or blood tests.

Diagnostic tests to determine causes of syncope⁷

The head up tilt test records blood pressure and heart rate on a minute-by-minute or beat-to-beat while the table is tilted in a head-up position at different levels. This test may reveal abnormal cardiovascular reflexes that produce syncope in some patients.

Important historical features for temporary loss of consciousness are given in the table below

Questions about	Parameters
Circumstances just prior to attack	Which position did the patient assume: supine, sitting or standing? Whether patient's activity was related to rest, change in posture, during or after exercise, during or immediately after urination, defecation, cough or swallowing? Predisposing factors: crowded or warm places, prolonged standing, post prandial period and of precipitating events such as fear, intense pain or neck movements
Onset of attack	Nausea, vomiting, abdominal discomfort, feeling of cold, sweating, aura, pain, in neck or shoulders, blurred vision, dizziness.
Attack	Way of falling, skin colour: pallor, cyanosis or flushing, duration of loss of consciousness, breathing pattern, movements: tonic, clonic or minimal myoclonus and their duration, onset of movement in relation to fall, tongue biting
End of attack	Nausea, vomiting, sweating, feeling of cold, confusion, muscle aches, skin colour, injury, chest pain, palpitations, urinary or fecal incontinence
Background	Family history of sudden death, congenital arrhythmogenic heart disease or fainting Previous cardiac disease Neurological history such as Parkinsonism, epilepsy, Metabolic disorders Medication such as antianginal, antihypertensive, antidepressant, diuretics In case of recurrent syncope- information on recurrence such as the time from the first syncopal episode and on the number of spells.

Blood volume determination

An intravenous line is inserted into a vein and a small amount of radioactive substance is injected. The blood volume test is used to evaluate if the amount of blood is appropriate for gender, height and weight.

Hemodynamic testing

Three sets of images are taken after a radioactive material has been administered through intravenously. The purpose of hemodynamic testing is to evaluate the intravascular pressure and blood flow that occur when the heart muscle contracts and pumps blood throughout the body.

Autonomic reflex testing

A series of different tests are done to monitor blood pressure, blood flow, heart rate, skin temperature and sweating in response to certain stimuli. Taking these

measurements can help determine if autonomic nervous system is functioning normally or if nerve damage has occurred.

Management of syncope

Vasovagal syncope

This can be usually prevented by removing or avoiding precipitants, by lying down or by placing the head between the knees during presyncopal period. Fludrocortisone a sodium retaining steroid reduces the vasodepressor response and relieves the symptoms of vasodepressor carotid sinus syndrome⁸.

Neurogenic syncope

Treatment of underlying seizure disorder should control further seizures. Standard anticonvulsants may be used to control seizures⁹.

Cardiac syncope

Drug therapy for bradyarrhythmias and tachyarrhythmias and surgery may be indicated for structural or ischemic conditions. The second form of treatment is ablation which is infrequently an option for ventricular tachycardia. The third and most effective treatment for both ventricular tachycardia and ventricular fibrillation is insertion of an implantable defibrillator. A demand pacemaker is indicated when heart block or severe bradycardia has been proven responsible for the syncope^{10,11}.

Vascular syncope

Subclavian vascular studies are indicated if subclavian steal is suspected. If test results reveal a stenotic lesion of 75% or greater in the carotid system, surgery should be contemplated. If the posterior circulation is involved aspirin or anticoagulants may be necessary. Surgery is indicated for symptomatic proximal subclavian artery occlusion¹².

Metabolic syncope

Hypoglycemia should be treated immediately with 50% dextrose in water intravenously; the underline caused must then be determined and treated reasons for underlying hypoxia and hyperventilation should

be investigated as appropriated and treatment should be instituted¹³.

Non pharmacological interventions

The cornerstone of the non-pharmacological management of patients with reflex syncope is education and reassurance regarding the benign nature of the condition. Patients should be instructed to avoid potential triggers. An informative and instructive talk with the patient about the benign nature and prognosis is the first step in the treatment of patients with vasovagal syncope. Conditions triggering vasovagal reflexes should be avoided such as a hot environment, humid atmosphere, prolonged standing, and reduced water intake. A reduction or cessation of vasoactive substances may be necessary. Aggressively counsel the patient to stop smoking and refer to the physician for medications to support nicotine withdrawal and a smoking withdrawal program. There is a 45% smaller hyperemic vascular response in smokers than non smokers¹⁴. Discontinuation of hypotensive drug treatment for concomitant conditions is an important first line measure for the prevention of syncope recurrences in many subjects, especially in older patients. Substitution of salt and intake of isotonic drinks expands the circulating blood volume and may improve venous return¹⁵.

Patients should be motivated to identify prodromals of syncope. Lying or sitting down when initial symptoms appear may avert or attenuate syncope or traumatic falls. Furthermore counterpressure maneuvers such as hand-grip and leg crossing may inhibit vasovagal syncope by increasing the venous return. Leg crossing combined with tensing of muscles at the onset of prodromal symptoms can delay or even prevent vasovagal syncope¹⁶. A more complex and time-consuming concept is that of tilt training: orthostatic training was found to significantly improve symptoms in adolescents with neurocardiogenic syncope. Twice-a-day training sessions of 40 min tilt positioning at home by standing against a wall significantly reduced the incidence of recurrence¹⁷.

Conclusion

The manifestations of syncope are common and present a challenging diagnostic exercise since the causes range from the trivial to the serious. Nurse

practitioners require a good understanding of the complex mechanisms of syncope and should follow an organized approach in evaluating this common clinical condition. It is essential that precision in diagnosis aids in rendering timely management and prevent further complications.

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