



A Synopsis on Syncope



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Syncope is a transient loss of consciousness with loss of postural tone and spontaneous recovery. It is a common disorder with a wide range of etiologies (Figure 1), affecting 20% of the population.

The majority of syncopal spells are cardiovascular in origin. The history can be difficult to piece together as syncopal events are often periodic, unpredictable and resolve spontaneously.

Evaluation

The most powerful assessment tools are the history and physical examination.

It is essential to obtain collateral history from an observer to ascertain possible seizure activity and duration of loss of consciousness, and to corroborate the patient's description of the prodrome and recovery period (Table 1).

The physical examination is most useful in assessing blood pressure and ruling out causes of syncope. Lying and standing blood pressures should be obtained, including an assessment of blood pressure after three minutes of standing. The cardiovascular examination should focus on signs of obstructive etiologies, such as aortic stenosis. A brief neurologic examination is indicated, particularly if there is a suspicion of seizure or transient ischemic attack.

Ivy's Issue

- Age: 21
- She recently fainted and required stitches to her forehead.
- Upon further questioning, she remembers feeling faint a number of times during childhood and adolescence, but usually caught herself before falling.



- Diagnosis: The age of presentation, typical history and childhood history suggest vasovagal syncope.

Ben's Bother

- Age: 59
- He recently lost consciousness at home; his wife rushed over to him and he responded immediately.
- He visits his family physician the next day.
- A review of medications reveals he is accidentally taking double the amount of hydrochlorothiazide prescribed.
- Diagnosis: This is an example of volume depletion and postural hypotension from excess diuretic.



Table 1

Historic clues in patients with syncope

General questions

- Duration and frequency
- Circumstances
- Time to return to normal
- Prodrome
- Duration of unresponsiveness
- Drug history

Neurocardiogenic (Vasovagal)

- Warm, diaphoretic prodrome
- Upright posture
- Return to normal within minutes
- Averted syncopal spells
- Childhood fainting

Arrhythmia

- Sudden loss of consciousness
- Palpitations

Seizure

- Aura
- Tongue biting
- Incontinence
- Tonic-clonic movements
- Post-ictal state

Tests

Often, a thorough history, physical and electrocardiogram will suffice for diagnosis.

Routine use of many tests leads to low yields and difficult interpretation. Examples of poor diagnostic yields are routine echocardiography (3%), routine blood work and electroencephalogram (1%). Other methods of testing are indicated in Tables 2 to 5

Management

Pacemakers eliminate syncope in virtually all patients with documented symptomatic bradycardia. Similarly, antiarrhythmic drug therapy, ablation or an implantable cardioverter defibrillator are usually successful in eliminating syncope from tachyarrhythmias.

There are currently no therapies proven in large, randomized, clinical trials to prevent vasovagal syncope.¹ Appropriate management includes reassurance and conservative measures. The primary approach involves an increase in fluid intake to two to three litres per day with liberal salt intake. Counterpressure maneuvers, such as vigorous isometric arm tensing and leg crossing have been shown to avert syncope.

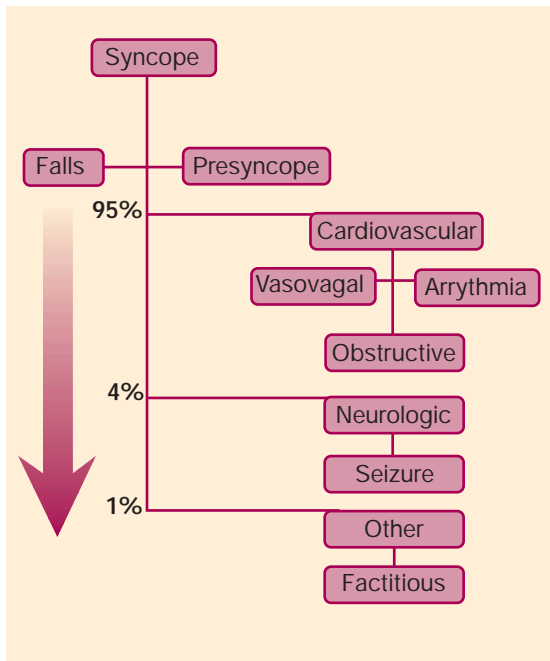


Figure 1. Etiologies of syncope.

Venous support stockings, tilt training and regular exercise have also been advocated in specific cases. Beta-blockers, fludrocortisone and selective serotonin reuptake inhibitors are often used, although with little scientific proof.

Referrals

Referral for specialist workup should focus on three patient groups:

1. Patients with significant structural heart disease who require aggressive arrhythmia workup to diagnose or exclude a life-threatening arrhythmia.
2. Patients with recurrent, unexplained syncope in whom consideration should be given for tilt testing and an implantable loop recorder.
3. Patients with vasovagal syncope who fail to respond to conservative measures as outlined above, where consideration of pharmacologic therapy is necessary.



Table 2

Electrophysiologic testing

- Electrophysiologic (EP) testing involves insertion of temporary transvenous pacing and recording catheters to assess bradycardias and to induce tachycardias.
- EP testing is indicated in patients with syncope who have structural heart disease when noninvasive testing does not yield a diagnosis.
- The essential limitation of this technique is the need to extrapolate from abnormal test results to a cause for spontaneous syncope.
- The role of EP testing has diminished further as the indications for primary prevention ischemic coronary disease have grown. Syncope in a patient with poor left ventricular function should be considered life threatening and managed aggressively as an in-patient.

Table 3

Tilt table testing

- The tilt table test is an orthostatic stress test that attempts to reproduce symptoms experienced during spontaneous syncope.
- Passive testing involves tilting alone. Active testing includes the addition of isoproterenol or nitroglycerine to enhance hypercontractility and vasodilatation.
- The patient is positioned on a motorized table with a footboard which is capable of tilting the patient up to 60 to 80 degrees.
- In patients where a clinical diagnosis of vasovagal syncope is made, the tilt test is positive in approximately 70%.⁵ Thus, tilt testing is indicated for patients with an intermediate probability of vasovagal syncope, where a positive test confirms a clinical diagnosis and a negative test points to a different etiology.

References

1. Sheldon R, Morillo CA, Krahn A: Management of vasovagal syncope: 2004. *Expert Rev Cardiovasc Ther* 2004; 2(6):915-23.



Further references available—contact *The Canadian Journal of CME* at cme@sta.ca.

Table 4

Ambulatory monitoring testing

- Holter monitoring is the standard test in patients with syncope and presyncope who undergo short-term cardiac monitoring.
- It plays a role only in patients with frequent symptoms where 24- to 48-hour ECG monitoring is likely to obtain a symptom-rhythm correlation.
- Loop recorders continuously record an ECG signal and store four to 40 minutes of preceding recording in their memory loop. The stored rhythm strip can be transmitted over an analogue phone line for an external loop recorder and by pacemaker interrogation for an implanted device. These devices have revolutionized the ability to detect the ECG during infrequent and unpredictable events.
- If patients have infrequent episodes, an implantable loop recorder permits prolonged monitoring.

Table 5

Electrocardiogram testing

- An electrocardiogram (ECG) is an inexpensive and accessible test that should be performed in all patients with syncope.
- The ECG will often help to rule in or out significant structural heart disease.
- Key elements include conduction disturbances suggesting propensity to AV block and Q waves suggesting previous myocardial infarction.

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