Syncope

David M. Donaldson, MD FACC

Rhode Island Chapter

American College of Cardiology

- 47 year old female high school teacher from Warwick, RI who presents with syncope while at Newport Creamery two weeks ago.
- PMH: hypothyroidism, benign left breast nodule, and a surgically corrected right ACL in 2008 @ SCH.
- Active, exercises daily without symptoms.
- ROS: (-) except travel to Toronto one week ago.
- Labs last week including: CBC, SMA-7, Mg, TSH are within normal limits.
- EKG within normal limits 2 months ago.

Your highest yield test would be?

1. Lyme test
2. Tilt Table Test
3. Echocardiogram
4. Brain MRI
5. Bilateral Carotid Duplex
6. History
7. Repeat 12 lead EKG

Syncope

- Self-limited loss of consciousness associated loss postural tone.
- Sudden or rapid onset.
- Highly variable prodrome.
- Spontaneous and complete recovery

Causes of Syncope

- Orthostatis = 11%
- Arrhythmias = 14%
- Structural Heart or Lung Dz = 4%
- Neurally mediated = 24%
- Psych/Neurologic = 12%
- UNKNOWN = 34%

- Kapoor et al 1998

Orthostatic Syncope

- Drop in systolic BP > 20 mmHg
- Drop in diastolic BP >10 mmHg
- Within 3 minutes of standing.

Arrhythmia / Heart / Pulmonary Dz

- Tachy or Brady Arrhythmias
- Valvular Heart Disease, Myocardial ischemia, HCM
- Pulmonary hypertension

- Often life-threatening or high risk of injury
- Treat promptly

Neurally-Mediated Reflex Syncope

- Vasovagal syncope
- Carotid sinus syndrome “Hypersensitivity”
- Situational syncope
  - post-micturition
  - cough
  - swallow
  - Strong emotion

Vasovagal Syncope Physiology

- Cardio-inhibitory = drop in heart rate
- Vasodepressor = drop in blood pressure
- “Mixed” = Both components are present

Questions:

- Complete Description (patient and witness)
- Onset – short or long prodrome
- Duration of episode
- Frequency of episodes
- Posture at time of episode
- Activity at time of episode (eating, walking, shaving, hyperventilation)
- Symptoms – nausea, fatigue, pallor, dehydrated, pain, fevers
- Sequelae – confusion, fatigue, or trauma
- Medications (new meds, LQTS, OTC meds)
- Family History of SCD
- Triggers (sight, sounds, temperature, location)

- **High risk prodrome** (CP, palps, exercising, no bracing for fall, driving)
- **High Risk occupations** (pilot, public vehicle operator, CDL, police / fire fighter)
- **High risk Associations** ("cardiac sounding", FH)

My 5 “Key” Points

1. CAD or abnormal echo/EKG or new murmur.
2. High Risk Prodrome or occupations
3. Family history of unexplained cardiac arrest
4. Loss of consciousness while operating vehicle
5. Syncope with no prodromal symptoms “unheralded syncope”

47 year old female high school teacher from Warwick, RI with a history of hypothyroidism, benign left breast nodule, and a surgically corrected right ACL in 2008 @ SCH passed out at Newport Creamery two weeks ago.
She is active, exercises daily without symptoms.
Labs last week including: CBC, SMA-7, Mg, TSH are within normal limits.
EKG within normal limits 3 months ago.

My 5 “Key” Points

1. CAD or abnormal echo/EKG or new murmur.
2. High Risk Prodrome or occupations
3. Family history of unexplained cardiac arrest
4. Loss of consciousness while operating vehicle
5. Syncope with no prodromal symptoms “unheralded syncope”

Thank you

Therapy

- Salt / Volume (2 L/day)
  - Clear colored urine
  - Salt tablets
  - Fludrocortisone
- Beta- blockers
- SSRI’s
- Vasoconstrictors (midodrine)