

## **DIFFERENTIAL DIAGNOSIS**

### **Syncope in the Emergency Department**

#### **Objectives:**

At the end of this small group exercise you will have gained experience in assessing the validity, clinical significance and applicability to emergency care of a study concerning disease probability for differential diagnosis.

#### **Assignment:**

1. Read the attached scenario.
2. Read the attached guidelines for reading articles concerning differential diagnosis.
3. Critically appraise the attached article using the accompanying worksheet.
4. Describe how you would address the question raised in the scenario taking into account your review of the article.

NOTE: The article used in this module is over 17 years old. A number of relevant studies have been published more recently. However, the methods used by Kapoor et al are particularly rigorous and we believe that this remains a particularly useful basis for an introductory exercise.

#### **Clinical Scenario:**

You are the attending of record for a 45 year-old male brought by ambulance to the Emergency Department of your community hospital with a chief complaint of “passing out”. The man says he remembers walking slowly along the sidewalk when he started to feel nauseous and then a little light-headed. The next thing he remembers is lying on the ground surrounded by people. The EMTs report that the patient was awake but groggy when they arrived, and that eyewitnesses on the scene described no seizure activity. There is no clinical evidence of head trauma. The patient reports no previous similar episodes. On physical examination, he is alert and well appearing. His pulse is 92/minute and regular, and his blood pressure is 122/82 with minimal orthostatic changes. The rest of his examination, including cardiac and neurologic evaluation, is normal. An EKG is also normal.

The resident asks you “What are the diagnoses of most patients who present to the emergency department with syncope?” You reply “What are you worried about in an afebrile, apparently stable, patient who returned to normal mental status and normal hemodynamic and respiratory condition in the absence of therapeutic intervention? The resident suggests: “Maybe it’s his heart.” You confirm the resident’s sense of priority and add that the differential diagnosis is broad but cardiac vs. non-cardiac categorization

is clinically useful. At the end of the shift, reviewing the “interesting cases” you have collaborated in managing, you identify the probability of different diagnoses for patients with syncope presenting to your ED as the most significant opportunity for reflection and exploration. You decide to do a literature search and to report the results in the next “case review” conference in your program.

A Medline search on “syncope” yields too many references to scroll through. Lacking a validated strategy for finding primary studies on differential diagnosis, you log in to UpToDate as a vehicle for locating a relevant primary study. Entering the single term “syncope” leads you to an index of topics, beginning with the generic header “Syncope”. You select this and the lead option on the resulting menu: “Evaluation of syncope in adults.” You scan the beginning of the chapter under this header and call up the abstract of citation 3, having to do with distinguishing cardiac from non cardiac causes of syncope. The abstract describes a large prospective series of patients with syncope which addressed both diagnostic and prognostic issues. You recognize it as a “classic paper” in this area and decide to review it thoroughly.

**Attachments:**

1. Guyatt G, Rennie D, Meade MO, Cook DJ Editors, The Users’ Guides to the Medical Literature, A Manual for Evidence-Based Clinical Practice. 3rd Edition. McGraw-Hill 2015, Chapter 17.
2. Kapoor WN. Evaluation and Outcome of Patients with Syncope. *Medicine* 1990;69:160-175.
3. Worksheet for evaluation of an article on disease probability.