DEM Journal Club

Article Appraisal

Article: Syncope Prognosis Based on Emergency Department Diagnosis: A Prospective Cohort Study

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Background and Study Objective(s):

Syncope is a common presentation to the ED, representing 1 to 3% of all visits. Elucidating the etiology of syncope can be challenging given the wide spectrum of possible pathophysiology. Previous literature and physician experience suggest the importance of history in reaching a diagnosis. To date, no previous studies have explored the association between ED diagnosis and patient prognosis. This study sought to address this gap by assessing short-term (30 day) serious outcomes in ED patients presenting with syncope based on the etiologic diagnosis prior to disposition.

Study Design:

This was a prospective cohort study based on a secondary analysis of data from an ongoing syncope risk tool derivation study. The data was gathered from six Canadian academic ED's over a period of 55 months. Emergency physicians and residents screened consecutive patients presenting with syncope for inclusion in the study. Syncope was defined as transient loss of consciousness followed by complete recovery. Patients presenting with symptoms inconsistent with syncope, such as loss of consciousness >5 minutes, persistent change in mental status, or symptoms suggestive of seizure, as well as those who had suffered major trauma or who were unable to communicate (e.g. language barrier), were excluded from the study. Because the study was designed to assess prognosis of patients after ED disposition, those who had serious conditions identified while in the ED were also excluded. From those patients included in the study, research personnel collected demographic data, details of ED management, physician diagnosis upon discharge (as well as physician confidence in the diagnosis), and serious outcomes at 30 days following the initial visit. Serious outcomes included death, arrhythmias, myocardial infarction, structural heart disease, pulmonary embolism, significant hemorrhage, subarachnoid hemorrhage, or other serious conditions that would necessitate treatment, cause a return visit, or require procedural intervention.

Results:

5,010 patients were ultimately included in the analysis. Of these, 2,671 (53.3%) were diagnosed with vasovagal syncope, 1615 (32.2%) were classified as "unknown", 456 (9.1%) as orthostatic hypotension, and 268 (5.4%) were diagnosed as cardiac syncope. 177 patients (3.5%) suffered a serious outcome of which 15 (0.3%) were deaths, 115 (2.3%) were cardiac events, and 47 (0.9%) were non-cardiac. Of the 15 deaths, none occurred in those diagnosed

with vasovagal syncope. When compared with the vasovagal group, there was a significantly higher proportion of serious outcomes in the other diagnostic categories which increased in the following order: vasovagal, orthostatic, unknown and finally cardiac ($p < 0.01$). The proportion of patients undergoing investigations in the ED increased in the same order and was significant ($p < 0.001$) for all groups when compared to the vasovagal syncope group. Physician confidence in the diagnosis was similarly highest in the vasovagal group.

Validity of Results:

Overall, the study was well constructed and reached conclusions that were very much in keeping with clinical experience. Appropriately, the study excluded groups that would 'muddy the water' (e.g. major trauma related syncope, presyncopal presentations, etc.) and focused on an well-defined syncope definition. Further, excluding those with serious conditions which developed while in the ED likely made the results more conservative. The study was of adequate size to be able to make meaningful comparisons among subgroups and 30 days represented a very reasonable and relevant time-frame for follow-up. On a less positive note, 1526 patients who met inclusion criteria were not enrolled in the study and thus represented a potential for bias. The authors state that they "identified no systematic reasons for non-recruitment", though they provide no evidence to support such statement. One wonders if non-recruitment was lower during times of high volumes and strain on the ED, thus masking periods where physician diagnostic accuracy might be expected to decrease. As well, there was no analysis performed assessing the extent of participation by particular ED physicians, leaving open the possibility of bias in terms of which physicians regularly participated in the study. Those that did participate may have been more or less diagnostically accurate than a more balanced ED physician cohort.

Generalizability of Results:

The data was gathered from Canadian academic EDs in Alberta and Ontario and thus is easily generalizable to our own context in British Columbia.

The Bottom Line:

In patients presenting with syncope to the ED, physician diagnosis is strongly correlated with the probability of serious outcomes. This is a logically consistent and expected result as physician diagnosis is based on a trained practitioner's synthesis of patient history, a physical exam and other investigations. While the results of the study are not practice changing, they do empirically confirm the value of physician diagnosis and its potential role as a component in future clinical decision rules for syncope presentations in the ED.