Risk stratification of older adults who present to the emergency department with syncope: the FAINT score

SUMMARY:
- Most patients older than 60 years of age with syncope are admitted to the hospital. If a problem is found during the ED encounter, then the patients can be admitted to address the problem. However, if the ED visit yields no findings, patients are often admitted solely for cardiac monitoring. Under these circumstances, few findings are typically identified.
- This study attempted to determine clinical characteristics that would accurately predict or more specifically rule out adverse events among older patients with syncope. This is a prospective observational study of adults >60 years of age who presented with syncope or near syncope at 11 academic EDs in the U.S. between 2013 and 2016 and for whom no serious cause of syncope was identified in the ED (such as cardiac arrhythmia, pulmonary embolism, gastrointestinal bleed, or subarachnoid hemorrhage).
- All subjects received a history and physical examination, as well as tests for cardiac biomarkers, including brain natriuretic peptide (BNP), and electrocardiography. Further work-up was performed at the discretion of the treating MD.
- The primary outcome was 30-day all-cause death or serious cardiac outcome, percutaneous coronary intervention, arrhythmia, coronary artery bypass graft, or valve replacement, as assessed by research staff through telephone calls and record review. The methods for the chart review were very strong.
- The authors started with 13 candidate variables according to literature review and expert physician judgment. They used a Bayesian logistic regression to identify the variables that most strongly influenced the probability of having an adverse event. A total of 3,686 patients were enrolled, 10.7% with serious diagnosis in the ED; 103 patients were lost to follow up. The final cohort included 3,177 patients with a mean age of 72 years. The cohort comprised 83% white and 50% male patients. At 30 days, 5.7% of patients experienced a primary outcome.
- Ultimately, the 5 variables that most strongly influenced the probability of having an adverse event were history of heart failure (F), history of arrhythmia (A), abnormal initial electrocardiogram (I), elevated BNP (N), and elevated high-sensitivity troponin (T). Because elevated BNP was awarded 2 points, the score ranged from 0 to 6.
- A FAINT score of 0, meaning that the patient had none of these features, was associated with a 0.9% risk of an adverse event, whereas a score ≥1 was associated with a 6.9% risk of an adverse event.
- The sensitivity was 97%, 89%, and 79% for scores of 1, 2, and 3, respectively. However, the specificity was poor: 22% for a score of 1 and 37% for a score of 2.
- Important limitations include that this study examined only the FAINT score’s ability to determine death or serious cardiac outcomes, but not other adverse outcomes for which patients might be admitted. The authors reasoned that they would have already ruled out conditions such as pulmonary embolism and subarachnoid hemorrhage in the ED, which may be true. In addition, this score uses the high-sensitivity troponin assay, which many hospitals do not have. Without this assay, the sensitivity of the rule might decrease (although the specificity might increase). Finally, this is only a derivation study; therefore, external validation is required, and the findings are not ready for clinical application.
- The greatest study limitation is that the criteria are so broad that the derived score is nonspecific, thus prompting the question of whether trying to validate these findings is actually worthwhile.

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EDITOR’S COMMENTARY: This is a well-performed multisite derivation study of a novel scoring scheme aimed at identifying patients at low risk for adverse cardiac events or death following an ED visit for syncope. The resulting FAINT score is relatively intuitive and easy to use. Low scores have high sensitivity but very low specificity, thus rendering the tool as a whole somewhat suspect.