Syncope, defined as a transient loss of consciousness attributable to global cerebral hypoperfusion, remains a common and complex chief complaint in emergency departments (ED).\(^1\) Although accounting for <2% of all ED presentations, roughly 40% of such patients are subsequently admitted costing more than $2.4 billion in the US alone.\(^2,3,4\) Currently, there is no evidence that current admission patterns improve long-term quality-of-life or survivability, furthering the concern over economic cost with low diagnostic and therapeutic benefit.\(^1,4-7\)

Clinical decision making can be challenging in the ED management of patients with syncope.\(^1\) Often, a definitive diagnosis cannot be determined during the initial ED evaluation. Because syncope may potentially be a harbinger of sudden death among patients with increased risk of cardiac syncope, admission of the high- and intermediate-risk patients remains common practice.\(^1,2,6\) This can also result in patients with any more than ‘no-risk’ being hospitalized. Although the rationale of this zero-miss approach can conceptually be appealing, the presumption that in-hospital evaluation improves a patient’s clinical outcome has never been validated.

As a result, an international interest has developed to improve risk stratification tools and diagnostic algorithms for syncope.\(^4,12\) Commonly cited as perhaps one of the first and best known decision aides, the “San Francisco Syncope Rule” (SFSR) identified five predictors of adverse outcome after syncope (SBP<90 mm Hg, shortness of breath, ECG: non-sinus or new changes, Hx of CHF, Hct < 30%), and whose absence aligns with very low risk (98%, 56% Sens, Spec).\(^9\) Although multiple decision guides, like SFSR, provide a framework for risk stratification, variation in definitions, accuracy and clinically coherent outcome categories limit uniform adoption.
In this issue of AEM, Numeroso et al present the Intermediate-Risk Syncope study (IRiS), focusing on short term prognosis and management of syncope with those determined to have intermediate or high risk of poor outcomes associated with cardiogenic syncope.\textsuperscript{1,12-14} Patients were only classified as high risk if they presented with classic “red flags” for severe disease – family history of sudden cardiac death, exertional syncope, active chest pain or palpitations, or ECG evidence of conduction abnormalities. In the IRiS study, 347 patients (185 male and 162 female, average age 73) with undetermined syncope were classified as intermediate (250) or high (97) risk. Low risk patients were systematically identified with well-described criteria and excluded from the study, as were patients with defined etiologies of their syncope present upon ED evaluation. Intermediate-risk patients were identifiably younger with less frequent comorbidities and with a drastically lower incidence of serious adverse events (0.8% versus 27.8%, \(p < 0.001\)). Intermediate-risk patients were generally admitted (62.8%) to a hospital floor or into an Emergency Department Observation Unit. For hospital admissions, the authors reported a mean prolonged hospitalization (8.8 days), elevated costs ($270,183) and a high rate of unexplained syncope (51%). Those characteristics leading to stratification as high risk were the only covariates statistically associated with serious events.

The main finding of this study is the surprisingly low incidence of adverse events observed in the intermediate-risk group (2/250) compared to high-risk patients (27/97, including 3 deaths). Based on their findings, the authors believe that intermediate-risk patients could be safely discharged, with potentially significant costs saving. Per this study, the goal should be evaluating risk factors for cardiogenic syncope. Ascribing too much importance to advanced age, stable heart disease, or comorbidities, while previously described as markers of increased risk, likely leads to inappropriate hospitalization. Although in general cardiogenic syncope continues to be associated with a significantly worse prognosis when compared to non-cardiogenic syncope, this study challenges conventional wisdom and suggests that pre-existing coronary artery disease and heart failure does not automatically confer high risk in the absence of decompensation.\textsuperscript{6-12,14}

This study represents a welcome advance in refining risk profiles of patients with undifferentiated syncope. Practice guidelines tend to be conservative and risk averse by nature, frequently resulting in more diagnostic workup (and therefore resource consumption) rather than less. As clinical decision making remains challenging in the ED management of patients with recent syncope, appropriate risk stratification and evidence-based care pathways differentiating low, intermediate and high risk are essential. In many circumstances of undifferentiated syncope, intermediate risk patient assessments may occur in a specialized evaluation unit, such as an emergency department-based clinical decision unit.\textsuperscript{15-17} This may allow for the typical ED dyad of ‘admit or discharge’ to become more nuanced. Admit those that are obviously ill, send home those who obviously aren’t, and briefly observe those who are neither.

While it has been suggested that current guideline ambiguity with risk stratification may account for sub-optimal study and outcome comparisons, both the SEEDS and EDOSP studies identified that syncopal patients at intermediate risk could be safely discharged after a period of observation with appropriate outpatient follow-up, ensuring improved resource utilization, reduced length of stay and hospitalizations. Further supporting this division between moderate and high risk, the IRiS study intimates this as an essential division point with those at high risk for adverse outcomes remaining in a more traditional inpatient care pathway. As has been shown in other medical conditions, when

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integrating current and future best practices, a syncope protocol in such a unit may provide a reduction in hospital admissions, costs while improving outcomes for patients with syncope. It remains to be seen, and an opportunity for future research, that given the low rate of adverse events in the intermediate risk group in IRiS, whether even a brief observation stay might be overkill.

Despite substantial research efforts, uncertainty remains in the decision-making for patients with syncope. Although this study presents another step toward defining the appropriate management of syncopal patients in the ED, further prospective studies are needed. There remains continued interest among clinicians and researchers to improve diagnostic algorithms and optimize care and resource utilization for this clinical entity.

References:


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