A simple algorithm improved physicians' diagnostic performance for patients presenting with syncope

Ammirati F, Colivicchi F, Santini M, on behalf of the investigators of the OESIL study. **Diagnosing syncope in clinical practice. Implementation of a simplified diagnostic algorithm in a multicentre prospective trial—the OESIL 2 Study (Osservatorio Epidemiologico della Sincope nel Lazio).** Eur Heart J. 2000 Jun;21:935-40.

QUESTION

In patients presenting to the emergency department (ED) with syncope, what are the relative frequencies of different causes?

DESIGN

2-month cohort study.

SETTING

9 community hospitals in Italy.

PATIENTS

195 patients who were > 12 years of age (mean age 63 y, 56% women) and presented to the ED with syncope (sudden transient loss of consciousness and of postural tone with spontaneous recovery). Patients with a known seizure disorder with a prolonged postictal recovery phase or those without a clear loss of consciousness were excluded. Follow-up was complete.

DIAGNOSTIC STRATEGY

A 2-step diagnostic algorithm was applied to all patients. The first step consisted of a history and physical examination, 12-lead electrocardiogram with rhythm strip, hemoglobin count, and blood glucose test. If no conclusive diagnosis was reached, patients received further evaluation (second step) consisting of clinical and laboratory investigations done on the basis of abnormalities found at the first-step assessment. The algorithm indicated 3 diagnostic hypotheses: cardiac syncope, neurally mediated syncope, and neurologic or psychiatric syncope. For suspected cardiac syncope, patients received an echocardiogram; for suspected neurally mediated syncope, they received carotid sinus massage and head-up tilt testing; and for suspected neurologic or psychiatric syncope, they received an electroencephalogram, brain imaging, or carotid Doppler ultrasonography. Further evaluation occurred if the diagnosis was still inconclusive.

MAIN OUTCOME MEASURE

Final diagnosis.

MAIN RESULTS

After the first step of the algorithm, a diagnosis was achieved for 43 patients (22%). After the second step, a conclusive diagnosis was reached for 161 patients (83%). The final diagnoses are in the Table.

CONCLUSION

In patients presenting to the emergency department with syncope, a 2-step diagnostic algorithm provided a definitive diagnosis in 83%.

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Final diagnoses in 195 patients presenting with syncope

Diagnosis	Number of patients (%)
Neurally mediated syncope (Vasovagal 30%, situational 3.5%, carotid sinus syndrome 2.0%)	69 (35.2%)
Cardiac syncope (Bradyarrhythmias 11.3%, tachyarrhythmias 7.1%, hemodynamic 3.0%)	41 (20.9%)
Neurologic syncope (Cerebrovascular 10.8%, epilepsy 3.0%)	27 (13.8%)
Orthostatic hypotension	12 (6.1%)
Psychiatric syncope	11 (5.6%)
Metabolic syncope	1 (0.5%)
Syncope of unknown origin	34 (17.5%)

COMMENTARY

The most pressing goal of the syncope work-up is to identify those patients with a cardiac-related cause who may have life-threatening conditions. Ammirati and colleagues completed a well-designed study. An impressive number of patients were diagnosed using their 2-step algorithm: 83% of all patients received a definitive diagnosis. Previous studies diagnosed 50% to 60% of the patients (1, 2).

Several issues, however, limit the applicability of this study, and they may affect the applicability of this algorithm to other settings. For example, the authors failed to provide adequate information about how patients were classified into the 3 groups: cardiac, neurally mediated, or neurologic or psychiatric syncope. In addition, how decisions were made regarding the need for admission is unclear.

Finally, although the algorithm reduced the overall number of undiagnosed cases of syncope more than did previous studies, it failed to provide adequate follow-up to ensure that the correct diagnoses were reached (1). The increase in the proportion of diagnoses achieved in this study can be mostly attributed to a higher number of patients, given the diagnosis of neurally mediated (vasovagal) syncope by positive tilt-table testing. This type of testing, however, may falsely diagnose patients with neurally mediated syncope in up to 25% of the cases (2), making follow-up crucial.

The study by Ammirati and colleagues is an important step toward helping clinicians more efficiently manage a common problem. More studies are needed to validate the accuracy and generalizabilty of this simple and practical diagnostic approach.

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