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EDITORIAL COMMENT

The importance of dedicated teams for the management of patients with syncope

A importância de equipas dedicadas à abordagem de doentes com síncope

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Due to their paroxysmal, random, self-limited behavior and short duration, transient losses of consciousness (TLOC) have always been challenging symptoms in clinical practice, especially in the emergency department (ED), where rapid decisions must be made for the appropriate management of patients.[1,2]

The etiological diagnosis of TLOC is most often presumptive and based on the individual patient's characteristics (including age, gender, pre-existing conditions and current medications); the witnessing of an event (duration of loss of consciousness, loss of muscle tone or convulsive movements, pallor or cyanosis); a detailed history, including predisposing and triggering factors (posture, temperature and environmental characteristics, time of occurrence, fasting state or after meals); and a detailed physical examination performed at the first assessment.[2]

Syncope is distinguished by its pathophysiological mechanism – transient global cerebral hypoperfusion – and is the most frequent cause of TLOC observed in the general population. However, the wide spectrum of etiologies involving syncope, from benign to potentially fatal, mandates the immediate recognition of patients at highest risk, in order to intervene in their natural history, through appropriate preventive and therapeutic measures.[3]

There is currently no independent gold standard method for diagnosing syncope. Therefore, data obtained from the witness of a crisis, findings on physical examination, and alterations observed in diagnostic tests during or shortly after a spontaneous episode are extremely important. These data may include severe hypertension or hypotension, dyspnea, bradycardia, tachycardia, active bleeding, pallor, sweating, cyanosis, malnutrition or dehydration observed on physical examination, or ischemic changes on the electrocardiogram (ECG), both during the loss of consciousness and after recovery.

Population studies have shown that cardiac syncope, both arrhythmic and originating from structural changes in the heart, is associated with a poor prognosis. By contrast, patients with syncope of neurally-mediated origin have an excellent prognosis, similar to the general population without a history of syncope.[4]

Multiple etiological factors can coexist in an individual with syncope, which makes it even more difficult to determine prognosis and to institute appropriate treatment. For this reason, several risk scores have been proposed in recent years, the main objective of which is to establish criteria and factors to differentiate syncope of cardiac and non-cardiac

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origin. Risk stratification based on these scores has been widely applied in different centers to patients with syncope of undetermined origin.[5]

The current concept of susceptibility to hypotension, proposed by Sutton et al.,[6] is based on the demonstration that vasodepressor phenomena can occur in patients with syncope of other than dysautonomic etiology, including those with cardiac syncope (approximately 45% of positive results on tilt table testing). This approach highlights the need for well-established criteria for diagnosis and indication of complementary tests, so that high-risk patients are not mistakenly considered to have a good prognosis.

The EGSYS score,[7,8] which uses clinical and electrocardiographic variables, was designed to distinguish cardiac from non-cardiac syncope in the ED. It is relatively simple and easy to assimilate and is quite appropriate for quick decisions, especially in the ED. EGSYS scores factors previously correlated with cardiovascular disorders positively, and factors suggestive of reflex syndromes negatively. Positive factors include the existence of previous heart disease or abnormalities on the 12-lead ECG, palpitations preceding syncope, syncope associated with physical exertion and syncope in horizontal decubitus. Among the negative factors are neurovegetative prodromal symptoms and repeated precipitating factors.

In the ED, an EGSYS score>3 has proved to be quite effective for decision-making concerning hospitalization and faster investigation, or for patient discharge and an outpatient assessment. Sensitivity and specificity for diagnosis of cardiac syncope in the original publication was 92% and 69%, respectively.

In this issue of the *Journal*, de Sousa et al.[9] sought to assess the role of the EGSYS score in the context of outpatient consultations, in patients previously assessed in the ED or referred by other health services for consultations with cardiology specialists. The study was retrospective, based on data from electronic medical records, and telephone contact was used in a two-year follow-up to determine patients' clinical course. The low sensitivity (48.2%) of an EGSYS score $\geq$3 to predict syncope of cardiac etiology in outpatient consultations is most likely due to the fact that high-risk patients had been preselected in the originating departments. However, its reasonable specificity and considerable negative predictive value (77.9% and 88.3%, respectively) suggest its utility as a marker of good prognosis in an outpatient setting. As an easily remembered and easily applied questionnaire without additional costs, its use during outpatient consultations can be a good basis for reassuring the patient and family members.

In recent years, particular attention has been given to the concept of multidisciplinary syncope units,[10] which are virtual or physical spaces with access to specialists in the area and specialized equipment and in which a pragmatic approach is adopted, based on consensus on current practice and on the available evidence.

The main purpose of a syncope unit is to determine with greater precision, among patients with a defined diagnosis, which need immediate interventions and, among those still without diagnosis, what is the best investigation strategy, according to their risk stratification, with the best cost-benefit ratio for the health system.[10]

There is agreement that the initial assessment, consisting of history, physical examination and ECG, can provide a confident diagnosis when the recommendations of specialists are followed. In addition, according to the latest European Heart Rhythm Association (EHRA)/European Society of Cardiology (ESC) guidelines (2018),[11] there is strong consensus that the clinical judgment of syncope specialists is often more effective than the various published risk scores for predicting the patient's short-term prognosis.

Risk factors for cardiac syncope and higher mortality are generally accepted to include advanced age (>60 years), male gender, pre-existing ischemic or structural heart disease, previous arrhythmias, ventricular dysfunction, palpitations preceding syncope, brief or absent prodromes, effort-induced syncope, syncope in the supine position, low number of episodes (potentially greater risk in recent history), abnormal cardiac physical examination, known congenital heart disease, known hereditary heart disease, and history of sudden death in relatives under 50 years of age.

Factors associated with a better prognosis are younger age, systemic diseases, syncope in orthostatic position or postural changes, autonomic prodromes (nausea, vomiting, heat), dehydration, painful or distressing stimuli, medical procedures, situational triggers (coughing, laughing, defecation, urination, swallowing), and frequent recurrences (old history with similar precipitating factors).

In the presence of at least one risk factor, the patient should be referred for observation in the ED to undergo specific diagnostic exams, until acute and potentially fatal causes are ruled out. If high risk is confirmed, hospital admission is indicated. In cases of intermediate risk, patients should be referred to a syncope unit for more rapid investigation.

In the study by de Sousa et al., even though the patients were previously selected, it can be seen that the cases diagnosed with syncope of cardiac origin in outpatient consultations showed a statistically significant difference from those with non-cardiac syncope in two risk factors: a higher incidence of previous heart disease or abnormal ECG, and less frequent situational precipitating factors.

Despite the evidence of their benefit, there are major barriers to the establishment of syncope units, from underestimating the consequences of syncope (in terms of both morbidity and mortality) to the low number of syncope specialists and hence a lack of formal training programs. The study of syncope is not recognized as a medical subspecialty and there is no proper integration between the physicians involved in this area (neurologists, cardiologists, emergency doctors, psychiatrists, geriatricians and general practitioners), which tends to lead to multiple and duplicated diagnostic exams that are often unnecessary and costly, resulting in low efficiency in the results of these workups.[10] Patients with syncope of undetermined origin require special attention, not only in the ED, but also in outpatient consultations. They should preferably be referred to specialists in the area,[5,11] for the application of effective methods and algorithms that have been recognized and validated in consensus, in order for their diagnosis and prognosis to be determined as rapidly and as accurately as possible.

For this, the creation of syncope units should be encouraged worldwide, with the aim of improving results and reducing costs.

In addition to the potential risk of sudden death and morbidity resulting from falls, recurrent syncope can cause disabling conditions, and significantly impact patients' quality of life.

Accurate and early recognition of the underlying mechanisms involved in syncope is the only way to prevent recurrences and to administer appropriate therapies, enabling these patients to return to their normal lives.

Conflicts of interest

The author has no conflicts of interest to declare.

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