Invasive therapy for inherited cardiac arrhythmias: towards a better benefit-risk equilibrium

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Vasovagal syncope as a cause of syncope in long QT syndrome

Letter to the Editor

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The report by Liu et al.\(^1\) containing data from the International Long QT Syndrome Registry regarding the risk factors for recurrent syncope and subsequent fatal or near fatal events in children and adolescents with long-QT syndrome (LQTS) who present for evaluation after episodes of syncope is of great interest. The registry includes all sorts of syncope episodes, and in their discussion, Liu et al. aptly emphasize that risk stratification in these patients requires careful examination to distinguish whether a syncope episode stemmed from LQTS-associated dysrhythmia or whether it was simply a vasovagally mediated episode occurring in an LQTS host.

In the general population, a vasovagal faint is by far the most frequent cause of syncope.\(^2\) It refers to a syncope episode induced by a fall in blood pressure and cerebral hypoperfusion due to reflex response upon various triggering factors (standing up, prolonged orthostatic stress, reaction to blood taking, and so on). The underlying mechanism is a loss of vasoconstrictor tone associated with relative or absolute bradycardia. Although some patients present with clear and prolonged premonitory symptoms, acute onset has also been reported.\(^3\) In general, the overall prognosis in patients with vasovagal syncope is excellent.\(^4\)

The lifetime cumulative incidence of ≥1 syncope episode in teenagers in the general population is high, with about 40% by age 21 years.\(^2, 5\) This is almost identical to the cumulative prevalence of 41% in children and adolescents with prolonged corrected QT intervals or young carriers of LQTS-causing mutations in the study by Liu et al.\(^1\) There is no reason to assume that vasovagal syncope has a lower prevalence in patients with LQTS than in the general population. Thus, whereas syncope in the setting of LQTS is definitively a red flag, given the risk for fatal arrhythmic events\(^6\), the epidemiological data on the frequency of vasovagal syncope in the general population suggest that the vast majority of syncope episodes in patients with LQTS are caused by vasovagal syncope. The obvious challenge for clinicians is to identify the patients who are at risk. With an additional positive family history of syncope or sudden death\(^3\), the identification of high-risk patients would possibly be more accurate.

Thus, although the risk for an aborted cardiac arrest or LQTS-related sudden cardiac death rises with the occurrence of syncope episodes, syncope does not equate to torsades de pointes, especially not in the young, and careful history taking remains a cornerstone of diagnosis and treatment in these patients.


