Evaluation of Arrhythmia Detection Rates Among Patients with Syncope or Palpitations Discharged from the Emergency Department with Ambulatory Cardiac Monitoring Device

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Study Objectives

Palpitations and syncope are two common chief complaints encountered by emergency department (ED) physicians. Diagnostic work-up in the ED often fails to yield a definitive diagnosis for these complaints. Even following hospitalization, a significant percentage of arrhythmias are not detected within 48 hours, indicating that a longer monitoring period may be warranted. To address this issue, our department launched a pilot program in which patients presenting with low to moderate risk syncope and/or palpitations were offered an ambulatory continuous cardiac monitoring device, a ZioPatch®, at the time of ED discharge. The objective of this study was to determine the rate of arrhythmia detection with on-site application of a ZioPatch® at the time of ED discharge for patients presenting with low to moderate risk syncope or palpitations.

Methods

This was an IRB-exempt retrospective cohort study conducted at a large, university affiliated ED. All patients ≥18 years old with low to moderate risk syncope or palpitations who were discharged from the ED with a 14-day continuous cardiac monitoring device, ZioPatch®, between December 2021 and May 2022 were included. Patient demographic data and device reports were reviewed, and the rates of arrhythmia detection were investigated.

Results

A total of 39 patients were discharged with a ZioPatch® during the pilot program. 11 patients presented with syncope or near syncope and 19 presented with palpitations. 33 patients returned the device for interpretation (84.6% return rate). Participants were 51.5% male with a mean age of 45.3 years. Arrhythmias were found in 33% of patients. 10 patients had supraventricular tachycardia and 4 patients had ventricular tachycardia with 1 or more beats. Notably, one patient experienced 1362 episodes of ventricular tachycardia, prompting an ED provider to urge the patient to return to the ED for workup and admission upon reviewing his ZioPatch® rhythm strip. Additional findings included sinus arrhythmia in 1 patient, symptomatic premature atrial contractions in 3 patients, and symptomatic premature ventricular contractions in 8 patients (2 of whom also had a notable arrhythmia finding).

Conclusions

Implementation of a 14-day, ambulatory continuous cardiac monitoring device at the time of ED discharge shows immense potential in the care of patients with low to moderate risk syncope or palpitations, who despite their risk classification, had substantial prevalence of arrhythmias. Further refinement of this pilot program will likely impact the standard of care for ED patients experiencing palpitations and syncope.