

OBJECTIVE

- Ambulatory ECG devices can provide comprehensive cardiac arrhythmia assessment in the outpatient setting.
- In comparison with Holter monitors which are typically worn for 24 to 48 hours, Mobile Cardiac Telemetry or Event monitors allow ECG recording for up to 30 days.
- Extended cardiac monitoring is often needed by physicians to assess the efficacy of treatment, evaluate symptoms, and to stratify patients at risk.
- In this study, we compare the impact of outpatient cardiac monitoring between 1-14 days and 15-30 days.

METHODOLOGY

- ECG data was collected from 2,679 patients using Zywie ECG monitors (Zywie, Inc., Georgia). These patients were prescribed to be monitored for 14-30 days.
- ECG recordings were analyzed to identify the first occurrence of an episode of any of the following arrhythmias:
 1. Atrial fibrillation (AF) >15s
 2. Ventricular tachycardia (VT), the number of heart beats >3
 3. Pause >3s.

RESULTS

- In the retrospective analysis, we identified at least one episode of AF in 486 patients, VT in 106 patients, and pause in 78 patients during study duration (Figure 1). The incidence of the first episode of AF, VT, and pause identified only after 14 days was observed in an additional 15.8%, 28.3%, 23.1% patients, respectively (Figure 2).
- In Figure 3, among the VT episodes identified beyond 14 days, 85.3% episodes had a duration between 1-10s and 14.7% with a duration >10s. Similarly, 76% of identified pauses had a duration between 3-4s, 12% between 4-5s, and 12% with a duration >5s.

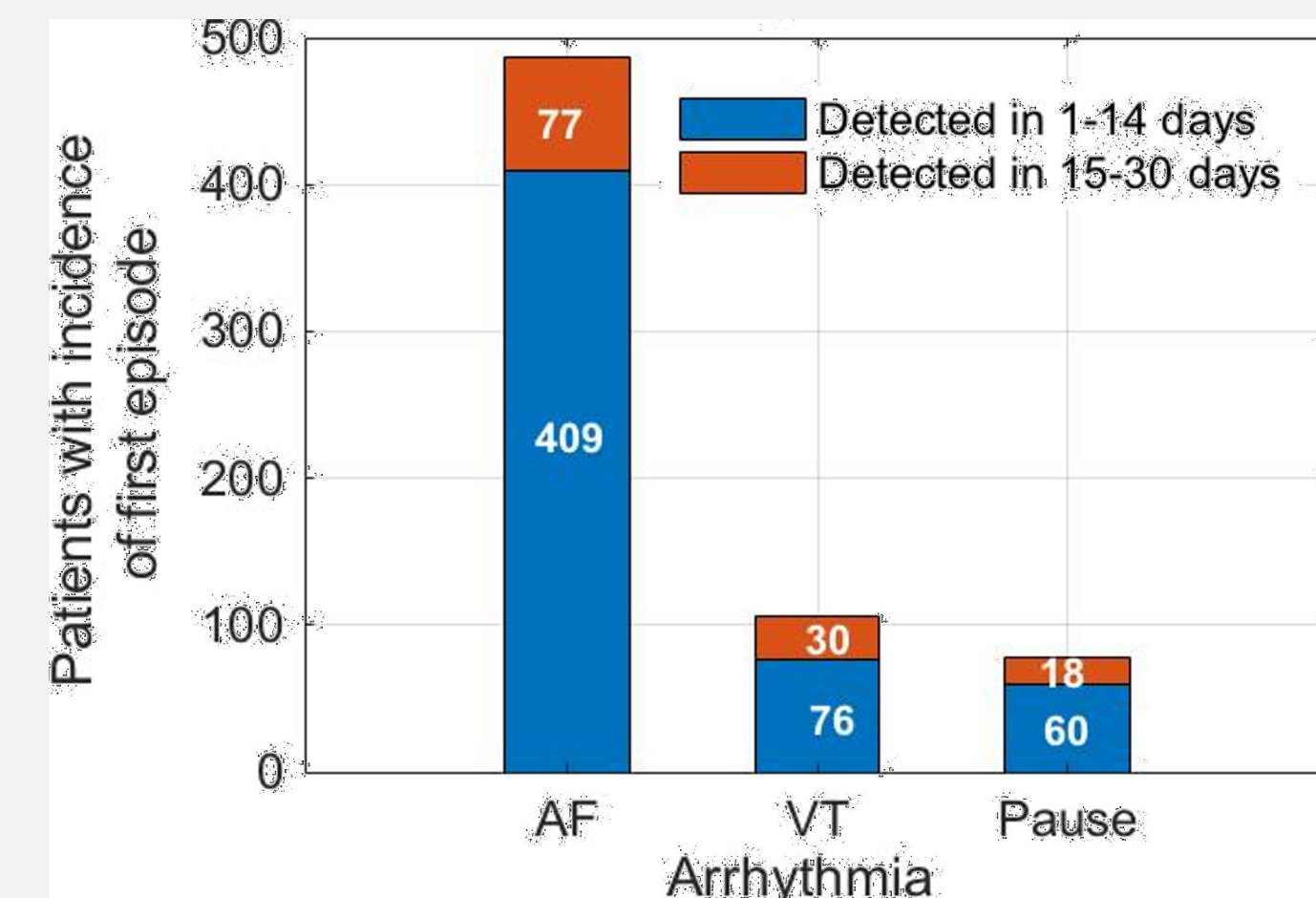


Fig. 1 Number of patients identified with at least one arrhythmia episode during the study duration.

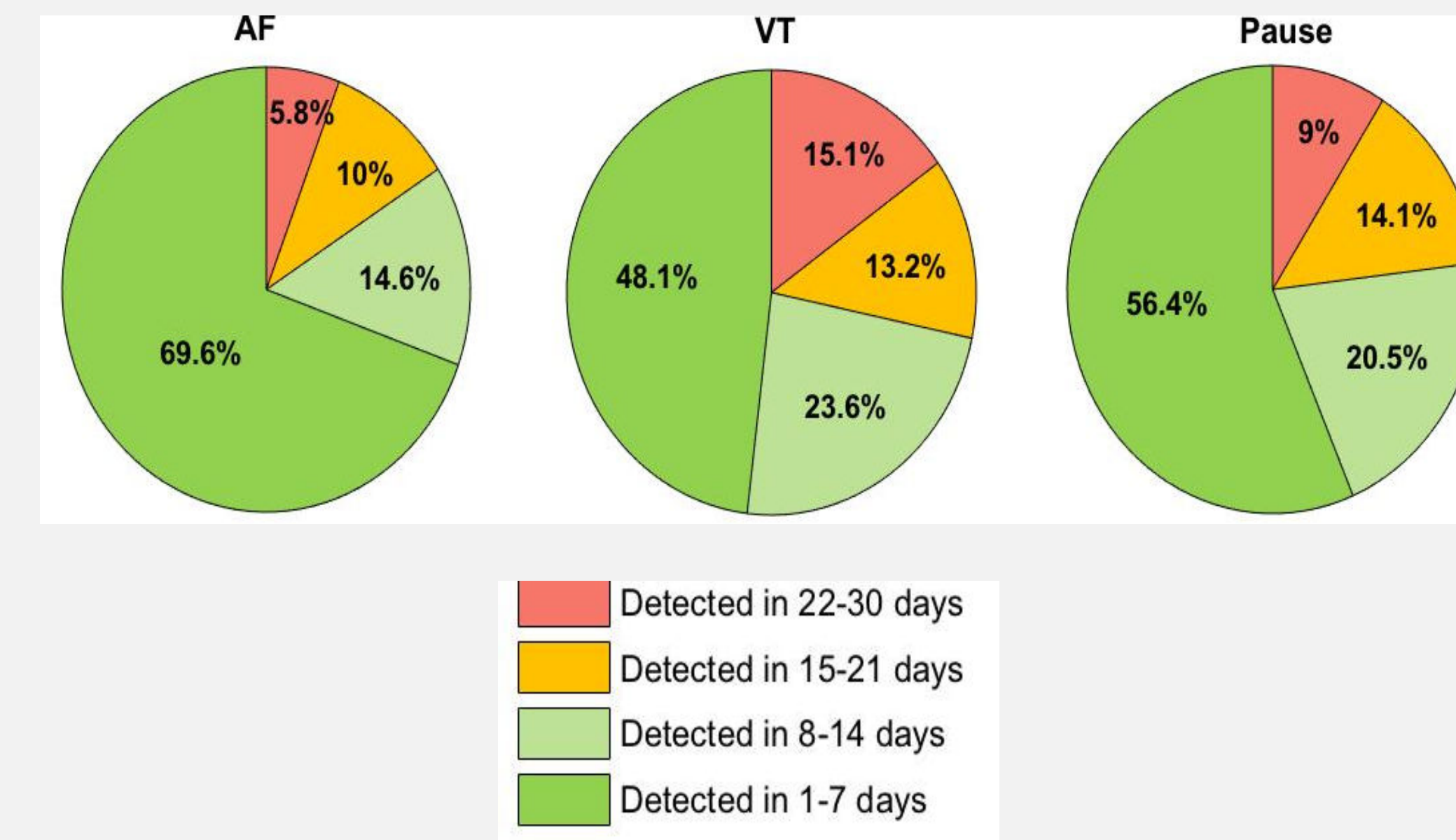


Fig. 2 Incidence of first episode of identified arrhythmia in patients.

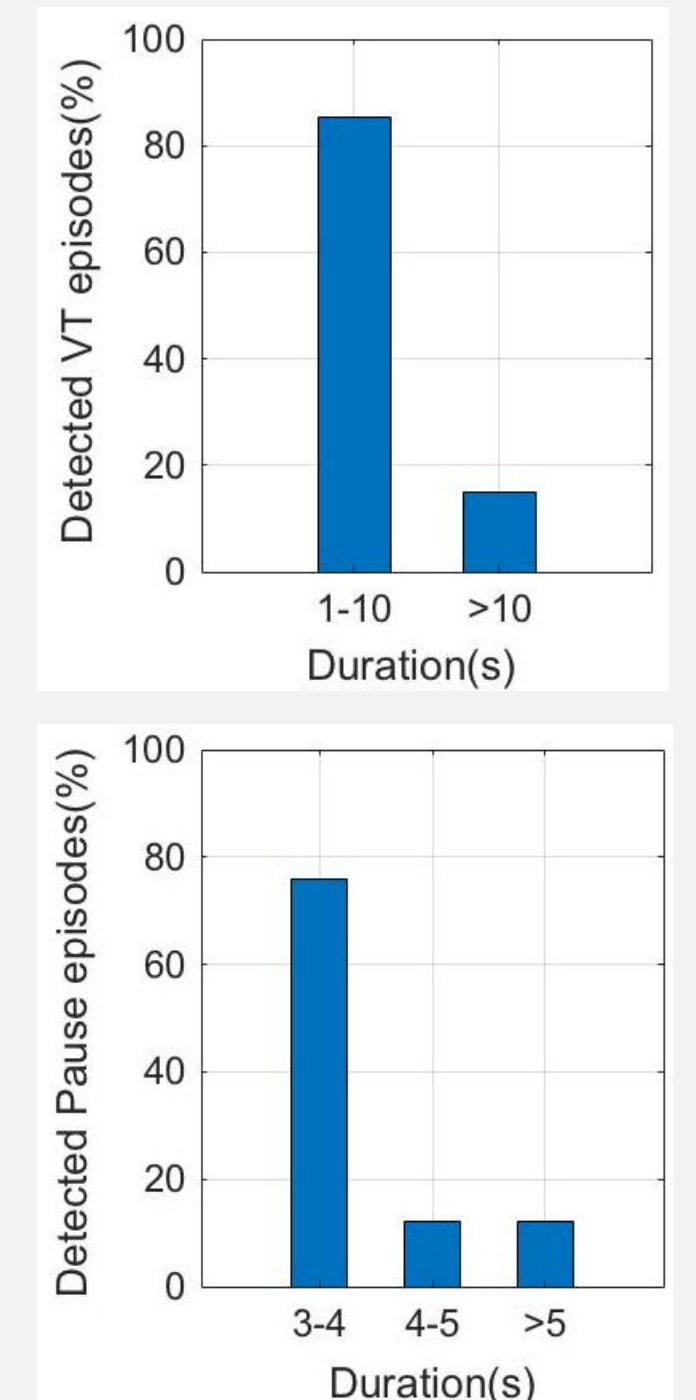


Fig. 3 Duration-wise analysis

CONCLUSIONS

Results show that the first episode of arrhythmic events were identified in additional 16-28% patient population when the monitoring was extended for up to 30 days. Long-term outpatient monitoring does provide better diagnosis, especially for patients at a higher risk of developing lethal arrhythmias.