

# Incidence of classic atrial flutter in outpatients with paroxysmal atrial fibrillation as identified with a new P-wave centric ECG monitor

## Implications for the AF ablation procedure

Robert W Rho MD, Susan Blancher ARNP, Mark Vossler MD, and Karrie McLendon BS  
Virginia Mason Heart Institute, Seattle, WA | Evergreen Medical Center, Kirkland, WA

**Introduction:** Pulmonary vein isolation (PVI) is usually the only procedure performed in patients with paroxysmal atrial fibrillation (AF) unless other arrhythmias are pre-identified. The diagnosis of classic atrial flutter (AFL) is often conflated with that of AF due to limitations in signal clarity in typically engineered ambulatory ECG monitoring systems whose focus is R-wave detection.

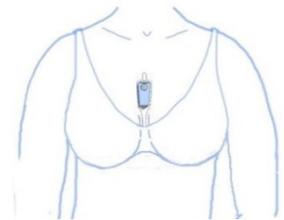
**Aim:** To comprehend the occurrence of classic AFL with PAF, we used a new P-wave centric surface ECG monitor to measure the incidence of AFL in consecutive outpatients with PAF considered for PVI.

**Methods:** In a community, general cardiology practice, 50 consecutive patients were identified with atrial fibrillation during surface ECG monitoring for up to 7 days using the Carnation Ambulatory Monitor, a device specifically engineered to improve P-wave (and flutter wave) clarity (BDX, Charlotte, NC). The monitor is placed over the sternum and is configured to be comfortable for women as well as for men.

**Results:** Of the 50 patients with AF, 23 had persistent AF and these were excluded from further analysis. The remaining 27 consecutive patients had PAF, occurring between 1%-80% of the recording period. The mean age was 64 years and 16 were male. Classic atrial flutter was identified in 19 of the 27 (70%) patients with PAF. In addition, atrial tachycardia was identified in 22 of the 27 (81%) patients with PAF.

### Conclusion:

1. Classic atrial flutter is extremely common in patients presenting with PAF.
2. A P-wave centric ECG monitor may be helpful in detecting atrial flutter in patients who are being evaluated for AF ablation.
3. When classic flutter is pre-identified before a scheduled pulmonary vein isolation procedure, adding a cavo-tricuspid isthmus ablation during the AF ablation procedure should be considered.



Sternal location of the CAM monitor and electrode spacing gives a hybrid ECG of V1 + aVF.

