

## Incidence and delay of atrial tachycardia after patent foramen ovale closure

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**Background:** In the large randomized trials evaluating patent foramen ovale (PFO) closure vs. medical treatment in secondary prevention of stroke, the incidence of atrial fibrillation has been reported more frequently with PFO closure (2.9–6.6%) than with medical treatment (0.4–1.9%). These episodes were clinically reported and may not reflect the real incidence detected by prolonged ECG recording.

**Purpose:** To evaluate the incidence and timing of supraventricular tachycardia (SVT) after percutaneous PFO closure.

**Methods:** Prolonged cardiac monitoring was proposed to patients undergoing PFO closure at the tertiary center of Pitié Salpêtrière Hospital, Paris. According to the estimated risk of SVT, two different approaches were used to monitor cardiac rhythm. A 3-year permanent recording using REVEAL™ XT or LINQ was proposed to high risk patients (age >45 years, multiple CV risk factors, prior palpitations or supraventricular ectopic activity during Holter monitoring prior to the intervention). A 4-week, 15-lead ECG continuous recording using the patch-free, wire-free, wearable Cardioskin™ system was proposed to lower risk patients. Endpoints of interest were the occurrence of SVT episodes (>30 seconds) and unplanned medical consultation or hospitalization for this reason

**Results:** From October 2018 to January 2020, a total of 64 patients underwent prolonged ECG monitoring including 32 (50.0%) and 32 (50.0%) patients with Cardioskin™ and REVEAL™ systems, respectively. A SVT was recorded in 11 (17.4%) patients, including atrial fibrillation (AF) in 6 (9.5%) patients. The median delay of SVT occurrence was 33.0 (14.0–39) days after the procedure (Figure 1) and 18 (10.8–34.8) days for the 6 patients with AF. Unplanned hospitalization or emergency medical visit for symptomatic SVT occurred in 5 (45.5%) patients. Antiarrhythmic medication and oral anticoagulation were initiated in 10 (90.1%) and 7 (63.6%) of the 11 patients, respectively, and SVT recurrences were recorded in 5 (45.5%) patients. No stroke was reported in any of the 11 patients during follow-up. There were no significant differences with respect to baseline and procedural characteristics among patients with or without SVT during follow-up.

**Conclusion:** Atrial tachycardia is frequent (17.4%) after PFO closure and long-term continuous ECG recording suggests that the incidence is higher than the clinical episodes reported in the randomized trials. This arrhythmic complication of PFO closure seems limited to the first 4 months following the procedure. Larger studies need now to confirm our findings.

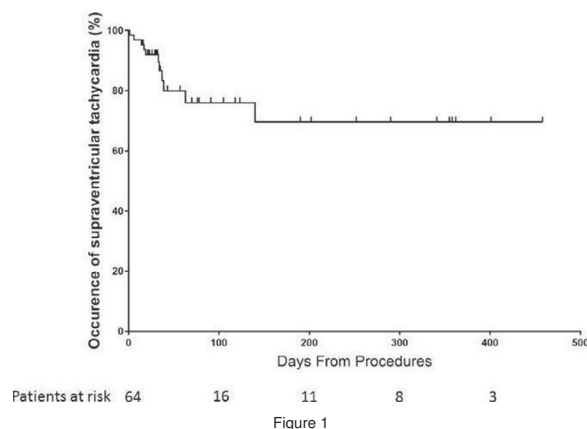


Figure 1