Early Recurrences after Atrial Fibrillation Ablation – Insights from the TeleCheck-AF study



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Background:

Recently, multiple widelv available wearable devices have been developed that can assess heart rate and rhythm using photoplethysmography (PPG). We previously implemented a remote ondemand mobile health (mHealth) infrastructure based on a mobile phone app using photoplethysmography (PPG) monitorina allowing technology of patients with atrial fibrillation (AF). Catheter ablation of AF is an established therapy for patients with symptomatic paroxysmal (PAF) and persistent AF (persAF). The cornerstone of AF ablation is pulmonary vein isolation (PVI). While early recurrences within a three-month blanking period are not considered an ablation failure, early recurrences predict long term success. We aimed to study the impact of early symptomatic long-term ablation recurrences on outcome using PPG monitoring.

Conflict of interest

The authors declare, that they have no conflict of interest.

<u>Methods:</u>

Patients undergoing scheduled PVI were given the opportunity to monitor their rhythm using "FibriCheck" within the "TeleCheck-AF" initiative for seven days. They received a QR code for installation of the software on their smartphone and were connected to the clinician's telemedicine portal. Patients were told to measure their heart rate three times per day and in case of symptoms. Clinicians assessed the tracings and contacted the patients if therapeutic steps were indicated.





Early recurrence after PVI

time to recurrence (d)

n	36
age	57±12
female	33%
CHADS-VASc-Score	2 (0-4)
AF type	paroxysmal: 72%
	persistent: 25%
	long standing persistent: 3%
PPG recordings	20±1 (n=771)
early AF recurrence	32% (60% of these after blanking period)
persistent recurrences (CV planned)	11%

Conclusion:

Rhythm monitoring with a PPGbased mHealth application helps to detect early recurrences after PVI and helps in identifying patients at risk of recurrences after the blanking period.