INNOVATIONS IN DIGITAL MEDICINE

User experience for an acute cardiac care department

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Trying to solve the problem of prolonged ECG monitoring





Cardionet







Medtronic Reveal XT Or LINQ



Sorin Spiderflash Afib



Novacor R. test Evolution 4



ΖΙΟ^{ΧΤ}







Cardioskin™

- a 15-lead Wearable ECG recording for continuous, long-term monitoring (2-4 weeks)

- a Secured, Cloud-based interface accessible with a computer for ECG Analysis and Review with Remote Data Transmission

- Online collaborative platform with automated analysis compliant with **GDPR**

	Weld Cardioskin	come to Cloud	
1.18.2	© 2018 Cardioskin. All rights reserved.		

CONNECTIO	Used by healthcare professional only
E-mail	
An email is required.	
Password	
A password is required. Forgot your pa LOGIN	ssword?

Cardioskin[™] – Comfort and Usability assessment – Phase 1

- <u>Objective</u>: assess COmfort and uSabilitY of Cardioskin, based on feedback from patients who have been prescribed a holter exam
- <u>Where</u>: Institute of Cardiology, Pitié Salpêtrière hospital
- <u>Who</u>: Patients coming for a Holter exam (n=20)
- <u>When</u>: November 2018
- Protocol:
 - Patient is trained on Cardioskin (10')
 - Patient puts on the Cardioskin by himself, and wears it for 5 minutes
 - Patient removes Cardioskin, then is equipped with a regular Holter device
 - Patient gives feedback, with Y/N questions and free comments/remarks



- **75%** of patients think **Cardioskin is more comfortable** than the Holter
- 60% of patients have a strong preference for Cardioskin, for a long-term exam (>7days)
- 25% of patients think they would sleep better with the Holter, compared to Cardioskin
- 10% of patients would prefer replacing electrodes rather than washing the Cardioskin TShirt

Cardioskin[™] – Comfort and Usability assessment- Phase 2



Cardioskin[™] – Comfort and Usability assessment

WHICH DEVICES WOULD YOU ACCEPT TO WEAR CONTINUOUSLY?

Cardioskin Holter standard No preference

During 1 day

During 3 days

During 1 week

During 2 weeks

During 3 weeks



Patient's iournev with Cardioskin™



Clinical experience with Cardioskin[™] - phase 3

58 patients were included from Dec 2018 to June 2019

	Min age	Max age	Mean age	M (%)	F (%)	
Syncope	31	59	40	2(40%)	3(60%)	5
Cardiomyopathies	42	44	43	0	2(100%)	2
Palpitations	22	71	41	5(29%)	12(71%)	17
AF post-ablation	32	60	50	2(40%)	3(60%)	5
PFO	32	62	47	11(38%)	18 (62%)	29

• **PFO case 1, palpitations**

Sinus rhythm Frequent atrial extrasystoles No A Fib



• **PFO case 2, numerous notifications by the patient**

Sinus rhythm Atrial and ventricular hyperexcitability No sustained A Fib



• DAI follow-up, palpitations

Frequent PVC Unsustained VT



• Pregnant woman, palpitations

Atrioventricular nodal reentrant tachycardia



• Follow-up after flutter ablation, palpitations

Several episodes of atrial tachycardia (150bpm) One episode is 4hr long



• Post AF ablation follow-up, « angina-type » chest pain

Short, unsustained AF episodes No significant ST-segment shifts



• Dizziness

Frequent atrial extrasystoles Short episodes of atrial tachycardia Frequent PVC



Conclusions

- Cardioskin[™] is a patch-free and wire-free system of ECG monitoring
- It provides a 15-lead, high-quality, long-term (2-4 weeks) ambulatory ECG-holter monitoring in real life conditions
- Patients need a cell phone or a home wifi*
- Patients find Cardioskin[™] discreet, easier to use and more comfortable than usual ECG-Holter devices
- All recordings are available for visualization or interpretation on a web platform
- Broad diagnostic indications for Cardioskin[™]

*Cardioskin can also function completely offline (similar to traditionnal holter) *cellular connection can also be provided with Cardioskin at patient's home

As a wearable device, Cardioskin offers an easy technological solution for long-term and real-life monitoring