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Country: **Italy**

Titel of the project: **Identification of parossistic AF in the ischemic cryptogenic stroke  
via cardiac telemetry**

## Project details

### **Stefania Testoni**

Ospedale Maggiore Bologna

Award amount: €50,000

A cardiac telemetry system with monitoring over several days increases the probability of identifying a parossistic AF compared to the 24 hour Holter ECG on patients with ischemic stroke and sinus rhythm. The correct identification of the etiology from parossistic AF would permit the secondary prevention of the cardioembolic stroke with anticoagulant treatment.

The majority of cardioembolic strokes are caused by atrial fibrillation. In approximately 25-30% of strokes, no cause is identified despite the tests being carried out. Many of the so called cryptogenic strokes, especially in patients over the age of 65 years, are probably caused by a parossistic AF (having excluded other etiologies such as arterial thrombosis and diseases of the small vessels). The parossistic AF is however symptomless is approximately 50% of patients and can be difficult to detect with the standard 24 hour Holter ECG. The diagnosis of permanent or parossistic atrial fibrillation is always treated with oral anticoagulants, which allow the prevention of further cerebral ischemic events in approximately 70% of patients. Identifying a parossistic AF in patients with ischemic stroke can therefore radically alter the prognosis, allowing the implementation of the correct treatment for secondary prevention. Whilst monitoring patients with stroke with the 24 hour Holter ECG identifies a parossistic AF in a percentage of patients ranging from 1% to 12%, non invasive electrocardiographic monitoring over a period of several days is likely to detect a significantly higher incidence of parossistic AF. The Stroke Unit of Bologna's Ospedale Maggiore is equipped with a cardiac telemetry system, as found in cardiac intensive care, which allows the monitoring of cardiac activity using a small transmitter attached to the patient. This does not compromise the patient's freedom of movement thus making the monitoring compatible with rehabilitation or other movements. The cardiac rhythm is transmitted via radio signals to a receiving station located in the nurses' room and can be recorded for several consecutive days. The equipment must include a server connected to the network of the existing system in cardiac intensive care for prompt specialist evaluation of the readings. The telemetry system consists of a receiver and 4 transmitters complete with accessories and antennae system. The console for monitoring up to 4 patients includes a 19" TFT display, ST and arrhythmia analysis, trends in and re-examination of wave patterns and parameters established in the previous 24 hours, expandable to 96. A system such as this can be set up to monitor 8-16 patients (Stroke Unit with 20 beds). Through continuous, non invasive monitoring of acute ischemic strokes with sinus rhythm but with uncertain etiology (which are approximately 1/4 of all cases) the availability of this equipment allows us to reduce the number of cryptogenic strokes and anticipate further cardioembolic strokes by implementing treatment with oral anticoagulants as secondary prevention. At the same time the monitoring of more serious cases, which are the patients most at risk of fatal cardiac arrhythmia, allows us to reduce the mortality in the acute phase. Financial backing would allow both the proposed expansion of the cardiac telemetry and the assignment of a freelance professional for tasks relating to activities connected to the project (analysis and selection of clinical and electrocardiographic data, data collection, electronic management of this data and patient follow-up).

## **Audience**

### **Type**

- AF Patients

### **Location**

Italy, Europe