Rapid Rhythm ECG for atrial fibrillation

TIMEFRAME: Estimated earliest commercial availability in the UK

Currently unclear  Now  6 months  1 year  18 months  2 years  Over 2 years

TECHNOLOGY

The Rapid Rhythm electrocardiogram (ECG) device has been developed by Rapid Rhythm Ltd, for screening and the early diagnosis of atrial fibrillation and other cardiac conditions, at the point of care.

The device is a hand held, portable, wireless ECG analyser that transmits information from 8 leads of data (or 12 leads of data, with an attachment) to existing ECG systems.

The patient remains clothed and seated whilst the wireless electrode device is placed over the patient’s chest. Data is obtained through traditional 12-lead ECGs from leads I, II, III, aVr, aVl, aVf, V1 and V2. The optional attachment provides data corresponding to that obtained from leads V3-V6. The ECG trace appears on a digital screen on the handset, 90 seconds after using the device, providing an automatic diagnosis of atrial fibrillation at the point of care.

It is designed for use in primary, acute and emergency care clinical settings by non-specialist health professionals who are making treatment decisions for patients with potential cardiac conditions.

The company anticipate receiving a CE mark in late 2015, with UK launch expected in early 2016.

POTENTIAL FOR IMPACT

More than half a million people in the UK are affected by atrial fibrillation, which is an irregular and often abnormally-fast heart rate. Atrial fibrillation is a major cause of stroke, cardiovascular morbidity and mortality.

While many patients with atrial fibrillation are diagnosed because of symptoms, many others are asymptomatic or have non-specific symptoms, such as tiredness or breathlessness. For such patients, screening offers opportunities for detecting atrial fibrillation.
Atrial fibrillation is diagnosed by carrying out an ECG, which involves applying a number of electrodes to the skin to measure the electrical activity of the heart. The 12-lead ECG is the accepted gold standard tool for diagnosis. In the UK, most ECG tests are performed in hospitals. This can be time consuming, disruptive and presents a high risk of non-attendance by patients. According to the company, conventional ECGs can also be difficult to manoeuvre, require training to be operated well and require the patient to undress. The company add this combination of factors makes ECGs unsuitable for primary care consultations and emergency triage.

The Rapid Rhythm device has been designed to provide an automatic diagnosis of atrial fibrillation and other cardiac conditions, at the point of care. The company state the device has been designed for use by non-specialists, requiring minimal training. A key innovative feature of the Rapid Rhythm device is its ability to collect data in 90 seconds which would be of particular benefit in emergency situations. The company state the device is portable and provides on-board ECG interpretation, providing opportunities for performing ECG in settings such as the patient’s home. The Rapid Rhythm device also integrates with the diagnostic and networking capabilities of existing commercial ECG machines, thereby avoiding the need for any infrastructural changes. The device may also provide opportunities for screening and monitoring of patients with cardiovascular complaints.

The company state expedited diagnoses and decision making using the Rapid Rhythm device will encourage early intervention, improving care and saving lives. Benefits also include savings associated with reduced referrals and care costs for stroke and cardiovascular disease. This technology is predicted to have an impact on the following domains of the NHS Outcomes Framework (www.england.nhs.uk/resources/resources-for-ccgs/out-frwrk):

Domain 1 Preventing people from dying prematurely;
Domain 2 Enhancing quality of life for people with long-term conditions;

EVIDENCE

PUBLISHED PAPERS AND ABSTRACTS


ONGOING STUDIES

A clinical trial and healthcare economics analysis are underway.

INFORMATION FROM

This Alert is based on information from the company and a time-limited internet search.