



Long-term ECG

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Guidelines are required on how we should use long-term ECG to detect atrial fibrillation.

In this issue of the *Journal of the Norwegian Medical Association*, Jortveit et al. examine the extent to which long-term ECG recording has consequences for the patients who are tested (1). The background to their analysis is that a very large number of these tests are performed in Norway, and the number is increasing. However, as the authors point out, we lack guidelines on when these tests should be used, and we do not know whether the results of the tests have therapeutic implications.

By considering 1 262 long-term ECG recordings, the authors conclude that in current practice, a large proportion of patients are referred for testing because of 'palpitations' and rarely because they have cardiac arrhythmia. This is especially true of younger patients, who are more often women, and in cases where the test results do not have therapeutic implications.

The authors divided the patients into two main groups: those with no known history of heart disease or stroke, and those with known heart disease. In the first group, which comprised about half of those tested, roughly 5% had an arrhythmia that required therapeutic management. Among those below the age of 65, the proportion was 3%. In those with known heart disease, the proportion was unsurprisingly far higher, and the findings led to changes in treatment for a number of these patients.

The aim of the ECG recording was of course the same for both groups, to detect arrhythmias that might increase the risk of serious complications, but the likelihood of such complications was entirely different in the two groups. The authors argue that long-term ECG recording should be used to a greater extent in patients in whom there would be an indication for stroke prophylaxis if atrial fibrillation were detected. The risk of stroke is greater in those already known to have cardiovascular disease. For these patients, long-term ECG could strengthen the indication for stroke prophylaxis. But from a primary prevention perspective, the group with no heart disease is perhaps the most interesting. Can long-term ECG recording identify individuals at high risk of stroke in this group, and are the benefits proportionate to the effort required?

Identifying seemingly healthy individuals at high risk of illness, and then offering them an intervention that can reduce their likelihood of becoming ill, is intuitively appealing. The

approach could involve personalised preventive measures based on screening a sample of the population, either systematically or as part of routine consultations for other conditions (so-called opportunistic screening). The article by Jortveit et al. shows that few cases are discovered in this way, but the consequences for the individual can be dramatic.

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A preventive strategy in which the probability of identifying an individual in need of treatment is low, will require testing many individuals seemingly unnecessarily. This differs from a clinical scenario where a pathological abnormality is of far greater significance. This difference between clinical practice and personalised prevention is essential to keep in mind when considering whether to launch a programme aimed at identifying individuals at high risk of illness.

Jortveit and colleagues refer to the European Society of Cardiology, which recommends opportunistic screening with pulse palpation, and possibly an ECG, for all patients over the age of 65, regardless of the reason for the consultation (2). The argument against opportunistic screening has been that too few potential stroke patients are being identified.

The alternatives to opportunistic screening are targeted mass screening or general population screening. Targeted screening involves selecting at-risk groups, such as individuals with known heart disease or heart failure, hypertension, diabetes, significant overweight or hyperthyroidism. Today's digitised health service makes this relatively straightforward and probably cost-effective. A 2014 report showed that opportunistic screening was as effective as inviting people to undergo an ECG (3), but the analysis was based on data collected almost 20 years ago (4).

The debate about screening patients for atrial fibrillation has been ongoing for decades. A commentary published as recently as December 2019 concluded that systematic screening could not be recommended (5). The arguments against screening were uncertainty over its effectiveness, as well as the associated costs. Another article published around the same time showed that smart watches, for example, can enable people to detect an irregular heartbeat themselves (6). Screening could thus become unnecessary, but such a development would hardly reduce the pressure on cardiology departments. Guidelines are clearly required.

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