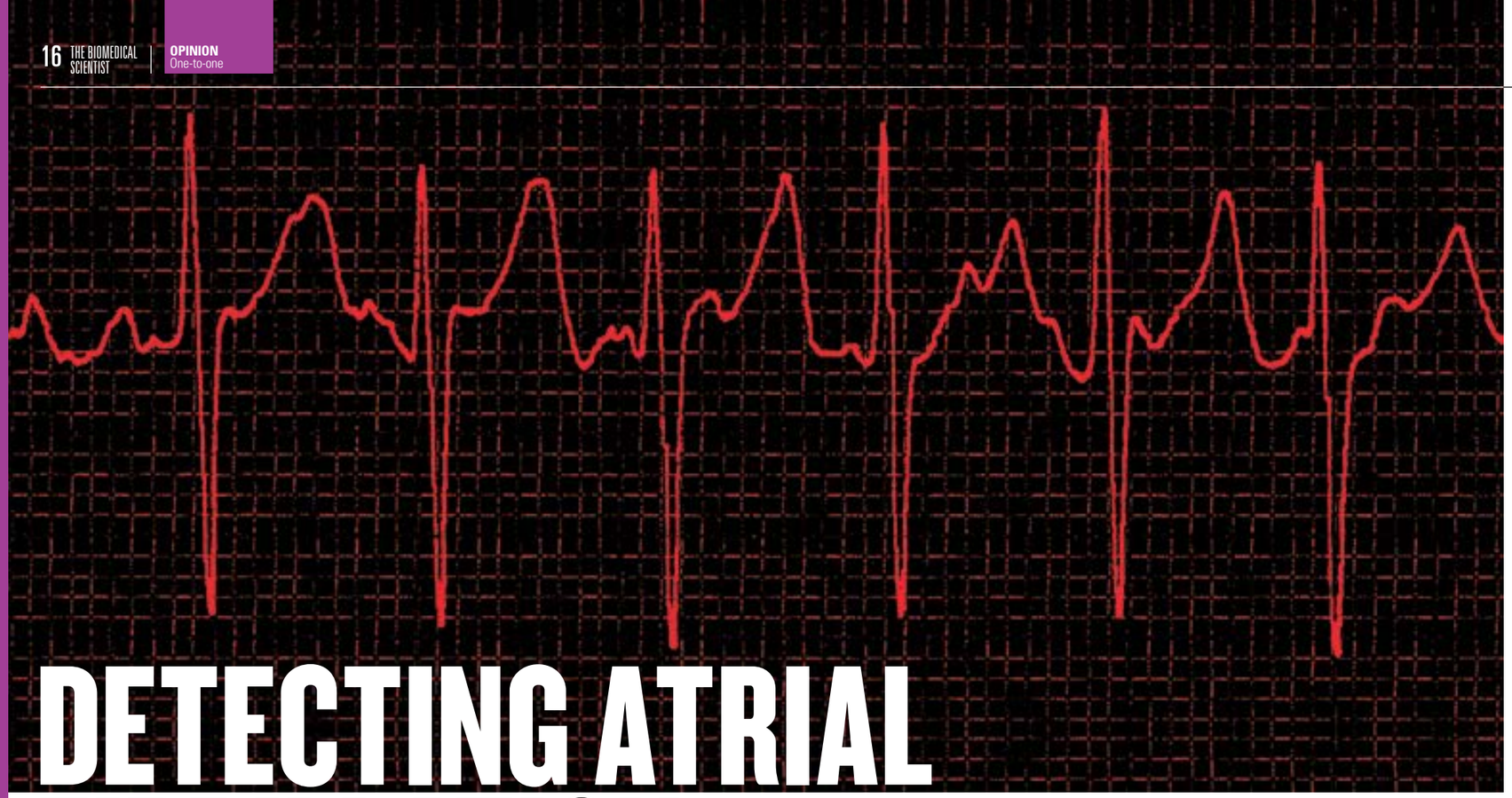

DETECTING ATRIAL FIBRILLATION

Could routine screening for atrial fibrillation be in the pipeline? **Jonathan Mant** is leading the programme that he hopes will be the catalyst.

Every year in the UK around 100,000 people have a stroke. More than 40,000 died as a result of the condition in 2015, making it the fourth leading single cause of death.

A stroke happens when the blood supply to a part of the brain is suddenly curtailed or cut off, starving the brain cells of vital oxygen and nutrients, and causing severe temporary and permanent damage. The major risk factors for a stroke are high blood pressure, obesity and smoking. But it can also be triggered by cardiac conditions, among them atrial fibrillation.

The underlying cause of atrial fibrillation is uncertain, but abnormal electrical impulses mean that parts of the heart move more randomly that they should, which disrupts the overall rhythm. It is thought to affect around one million people, though it is most prevalent among the over 65s. Anybody with atrial fibrillation has a substantially increased risk of suffering a stroke.

Screening

With this in mind, a new study is to consider the benefits of a major screening programme for atrial fibrillation. Could it help to save lives?

Researchers from the University of Cambridge and other academic institutions are set to start work on the extensive trial that will centre around GP practices in East Anglia. Jonathan Mant, Professor of Primary Care Research at the University of Cambridge, is the senior investigator.

"We know that atrial fibrillation is a strong risk factor for stroke," he says. "Somebody with the condition has about a five-fold greater risk. It is also a getting more common, particularly in older people. It gets more likely in an ageing heart, and as the population is getting older, we are seeing more of it. Another factor is that people now have much better chances of survival with coronary heart disease and other heart problems."

Coupled to this rising prevalence is the problem that atrial fibrillation often shows no symptoms. "People can be completely unaware that they have got it," says Mant. "Equally, it can sometimes present with symptoms. With atrial fibrillation the heart isn't beating efficiently, so people can feel breathless, particularly when they are exerting. They might also be aware that their heart is beating strangely, which can make them feel faint and dizzy."

Feasibility study

Stroke is not the only problem, either. "It is also associated with heart disease and there is also increasing evidence linking it to cognitive decline and dementia," says Mant.

The key questions for the research are can screening help to prevent premature deaths and dementia in the target population, and will the benefits outweigh any potential harm it might cause?

The research has three phases, the first of which is a feasibility study where the team is refining its plans for carrying out the screening. "We have started in five local GP practices and then we will extend the feasibility test to another six practices in a few months' time," says Mant. "This is to hone the procedure, but also checking that people are willing to take part. At this stage they are all offered the screening."

Patients will conduct the screening themselves at home, using a handheld device to record their ECG. The reason for this is that atrial fibrillation often comes and goes at different times, so the home screening has a better chance of detecting cases of intermittent atrial fibrillation that might otherwise be missed in a one-off test during an appointment with a GP.

The pilot

The second phase is a much wider pilot of a randomised control trial. "At this point we will be randomising practices, so some do the screening and others do not," says Mant. "This will involve 30 practices with 400 patients each, so 12,000 people in all, and that will take place over a year."

During the pilot the research team will be checking that it is picking up the expected level of undiagnosed atrial fibrillation, and that those patients are receiving appropriate treatment. "Obviously, if we are not successfully detecting and treating the condition, it would be futile to continue. On the basis of the data we collect, we will decide whether it is feasible to extend the trial to its full extent, which would recruit another 270 practices and a total of 120,000 patients that we would follow-up for five years."

Mant's feeling is that it will go to the full trial. "Preliminary data from other parts of the world, such as Sweden, suggest we will probably pick up undetected atrial fibrillation in about 3% of people we screen. And in terms of clinical practice, most people newly identified with atrial fibrillation are already being treated properly."

Routine screening

The main treatments for atrial fibrillation are anti-coagulation drugs. "The key reason it causes stroke is that it increases the risk of clots forming in the blood stream, typically in the heart or arteries, and they end up in the cerebral circulation. Many trials since the early 1980s have demonstrated that blood-thinning is very effective at reducing the risk of stroke, so we know that the treatment works."

The other key consideration for the trial is to ensure there are no drawbacks. "With screening there are always concerns that you may be causing inadvertent harm," says Mant. "It can cause anxiety, for example. We also don't know the prognosis of atrial fibrillation that is first detected by screening, and if the risks of stroke are lower for these people, we may be doing more harm than good by treating them.

"While we believe the programme will be highly effective, we do need to test that properly. If the trial is positive, if we demonstrate that we are reducing strokes and saving lives, and that we show it is good value for money for the NHS, then our hope and expectation is that it would be taken up as a new national screening programme, so that people in the target age range are routinely invited to be screened for atrial fibrillation." BMS

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