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#EHRA2019: Apple Heart Study - abnormal heart rhythm detected by smartwatch

Results of the Apple Heart Study, a large-scale, app-based study to detect irregular heart rhythm (including atrial fibrillation) using a smartwatch, were presented at EHRA 2019, a scientific congress of the European Society of Cardiology (ESC). Some European experts expressed their views about the study.

Atrial fibrillation, the most common manifestation of arrhythmia, causes 20 to 30% of all strokes and increases the risk of dying prematurely. Symptoms include palpitations, shortness of breath, tiredness, and difficulty exercising. However, some people have no symptoms at all.

Strokes can be prevented with oral anticoagulation, but there is no evidence that treatment is beneficial in otherwise healthy people younger than 65. So, is there any point in monitoring?

Professor Hein Heidbuchel, President of the European Heart Rhythm Association (EHRA), pointed out that many users of Apple Watch tend to be younger people. "Even if they really have atrial fibrillation, we have to admit that as physicians we don't know exactly what that means for those patients. That is something we will have to solve before we really apply this sort of technology at a wide scale in medicine," he said.

The Apple study, as noted by Dr. Emma Svennberg, EHRA mHealth Coordinator, included more than 400,000 people but "only 6% were above the age of 65." As the detection rate of atrial fibrillation in this cohort was about 0.2%, the doctor also suggested comparing this finding with those from other studies. "This [study] should be compared to other screening studies in elderly populations of much shorter duration where they found approximately 15 times more atrial fibrillation with numbers approximating 3%," said Dr. Svennberg.

Another question about the Apple smartwatch: Are the benefits of this new technology worth the risks?

Professor Isabelle Van Gelder, Chairperson of EHRA's National Cardiac Societies Committee, said her main concern about the Apple Heart Study is that "it brings a lot of anxiety among the people wearing such devices."

For Professor Haran Burri, Scientific Chairman of EHRA 2019, the Apple smartwatch can be considered a screening device but does not replace standard techniques for diagnosing arrhythmias.

"The potential benefits are that if we're able to screen for atrial fibrillation then we may start a therapy, for example anticoagulants, that may prevent stroke. The risks are that if the subject actually has an arrhythmia that's not detected by the device, he may be falsely reassured. Or conversely, if there's a notification and no arrhythmia, then he may be anxious for nothing," Prof. Burri explained.

While the smartwatch technology offers "a fantastic new approach" in identifying atrial fibrillation, Professor Gerhard Hindricks, Editor-in-Chief of EHRA's scientific journal EP Europace and a Past-President of EHRA, believed that healthcare systems were not ready to implement such approach. "From an innovative technological point of view, this is a fantastic new approach. But are we ready for these technological innovations? Are the citizens ready? Is the healthcare system ready? I have my doubts about whether we are ready to implement this approach now."

"Will the technology have an impact on outcome? Will it support patient values – being well and living longer? That needs to be proven."

"Do we know what we're going to do with all these data? Do we know where these data end up? Will these data potentially bypass the traditional healthcare system? Are there legal issues? Has all that been clarified and really thought through? I've got my doubts."

Source: European Society of Cardiology (ESC)

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