Development of portable device to detect arrhythmias in real time

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Portable device to detect arrhythmias in real time

Researchers at the Technological Institute of Morelia (ITM) in Mexico created a portable device for detecting cardiac arrhythmias in real time using electrodes placed on the chest of the patient or as part of clothing.

It also alerts medical personnel of any irregularity in the heartbeat.

Dr. Jose Gutierrez explained that the device sends real-time results to doctors with a wireless measurement system. It also stores data for subsequent analysis.

One of the advantages of this new technology is that it is smaller than existing devices on the market. The device developed at the ITM measures less than half of typical devices, at 20 x 20 centimeters.

The device enables the detection of eight different types of arrhythmias. Its design considers user safety as a primary factor. One of the challenges in the development of this device, explains Gutierrez, is improved recharging. He adds that future devices can be made even smaller.

In addition, this technology can be used by people who currently have not been found to have a cardiovascular disease for prevention and, where appropriate, early detection, essential to diagnose the development of this disease.

Moreover, the device fits the patient's body, which allows detection of heart rhythm through electrodes placed in a shirt.

The specialist explained that given the high amount of data to analyze, both computer systems and specialists have trouble detecting irregularities, especially occasional ones.

For five years, the researchers developed various measurement systems for both detection and signal processing. This technology has social importance, since cardiovascular disease is a common cause of mortality and morbidity around the world . In Mexico, these diseases are increasing due to widespread unhealthy eating habits with high content

of saturated and trans fats, increased sodium intake, smoking and alcohol abuse and physical inactivity.

Gutiérrez Gnecchi and other researchers at ITM are also working on a device to determine deafness in babies, and another for detecting breast cancer without the hassles of current mammography.

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