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EDITORIAL COMMENT

Extended cardiac monitoring

Monitorización cardíaca extendida

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Remote heart rhythm monitoring has significantly impacted the possibility of making a multitude of clinical diagnoses which were otherwise not made or were late and led to regrettable consequences both for the patient as well as for the healthcare system. A considerable percentage of atrial fibrillations are known to be paroxystic, barely symptomatic and hard to document. Some of them present with symptoms compatible with transient ischemic attacks (TIA) or embolic strokes of undetermined source (ESUS). In fact, various publications have demonstrated that extended heart rhythm monitoring (the longer the time the greater the possibility of diagnosis) is a valuable tool for clarifying the diagnosis and directing treatment towards the identified etiology, thus avoiding catastrophic events for the patient.

In addition, this technology is a great help in studying patients with unexplained syncope (many of whom have underlying heart disease), in whom recurrent syncope - in the absence of a timely diagnosis – could result in sudden death. In this same group of patients with syncope but without structural heart disease, who have not been able to be diagnosed, there is a clear indication for continuous monitoring, seeking to correlate the patientsśymptoms with rhythm disorders such as bradycardia, paroxysmal atrioventricular block, ventricular tachycardia or other heart rhythm disorders clearly related to the symptoms. If, on the other hand, the syncopal episodes are not associated with rhythm disorders, this type of disease is ruled out and other etiologies are considered, such as pure vasopressor syncope, epilepsy or pseudosyncope.

Another group of patients who benefit significantly from this newly available technology in Colombia are those who consult due to palpitations which have not been documented using traditional methods such as 24 or 48 hour Holter monitoring. It is important to diagnose these patients so that treatment may be directed etiologically rather than symptomatically.

Monitoring systems have been evolving with respect to technology. The first available systems were event recorders with electrodes adhered to the skin, which were only activated by the patients when they experienced symptoms. However, these had problems such as: greater interference, separation of the electrodes from the skin, skin allergies due to prolonged use, lack of waterproofing and event recording only when externally activated. This last point is important, as there are patients who, due to their underlying condition, are not able to trigger the external activation. Subsequently, implantable extended monitoring was developed (available in this country), in which the devices are increasingly smaller and easier to implant, last for more

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than two years, have an external activator depending on symptomatology, and record automatically via the device according to preestablished parameters, now with follow-up through mobile phone applications. Another form of extended monitoring is what is incorporated in pacemakers, cardiac resynchronization therapy devices and implantable cardioverter-defibrillators. Ever since the end of the 1980s, monitoring of these kinds of devices has been possible, and thus, also, monitoring of the patientsíntrinsic rhythm. Initially, this was carried out over the telephone, then through portable machines which interact with the device and send the information daily via wireless communication to a monitoring center where the data is analyzed. Alerts are sent to the attending physician or a cardiac center's monitoring unit, thus allowing the patient to be called in for an appointment to make corrections to the implanted device, or to the patient's heart rhythm, in a quick and timely fashion.

Lastly, there are state of the art devices which transmit the data through mobile phone applications (apps), and also permit patient-activated recording. Along with this type of continuous electrical activity monitoring, lung congestion is assessed in patients with heart failure through continuous thoracic impedance measurement. The physician is notified of abnormalities before the patient presents heart failure decompensation symptoms, leading to early treatment and avoiding unnecessary hospitalizations, thus saving on healthcare costs.

All of this indicates that technology is our best ally, both for electrical activity monitoring as well as monitoring of other physiological variables. These changes, already applied in medicine, are arriving in our country; and although they have already been proven in other countries to be cost-effective and to save considerable money in hospitalizations and major cardiovascular events, our healthcare system is unfortunately not prepared to rapidly adopt them.

The article by Dr. Vanegas et al. presents the evidence in our country of the usefulness of the SEEQ device as a type of extended monitoring for an appropriate diagnosis. This major benefit which may be offered to our patients also has multiple advantages: it is very easy to install, may be used for however many weeks are necessary, is waterproof, produces minimal allergic reactions, has a very good signal and little external interference, and provides continuous transmission of cardiac electrical activity. All of this in order to provide information in accordance with its programming, sending alerts to the attending physician in real time if the patient presents significant bradycardias, pauses or associated tachyarrhythmias.