

Remote monitoring of cardiovascular implantable electronic devices: a valuable tool for a better care

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by Maciąg et al,
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The interest in the clinical and organizational value of remote monitoring of cardiovascular implantable electronic devices (CIEDs) has grown substantially over the last decade. International societies recommend regular follow-up with different timeframes according to different types of CIED.¹⁻³ Remote monitoring of CIEDs provides a number of benefits: it allows to adhere to guidelines recommendations and to significantly reduce the amount of time spent in the hospital by patients. It also reduces physician effort for ambulatory consultations and improves patient care by anticipating technical and clinical changes over time.⁴

The role of remote monitoring is even more critical for patients with implantable cardioverter defibrillators (ICDs), both transvenous or subcutaneous, since these patients may benefit the most from rapid interventions.³ Main reasons for such interventions are ventricular or supraventricular arrhythmias, lead malfunctioning, or deterioration of clinical status, monitored with indirect indicators such as thoracic impedance and daily activity.^{5,6}

In this issue of *Kardiologia Polska* (*Kardiologia Pol, Polish Heart Journal*), Maciąg et al⁷ address the topic of feasibility of remote monitoring in a large cohort of Polish patients with ICDs and evaluate the effect of such an intervention in an outpatient setting. They followed 176 patients for 12 months and for each patient telemetric visits and outpatient visits were planned in a 3 to 2 ratio. At 1-year follow-up, 91% of the 352 scheduled outpatient visits and 82% of the 528 scheduled remote visits were carried out. Moreover, there were 116 (13.4%) unscheduled visits: 35 (30.2%) outpatient and 81 (69.8%) remote visits.

In their study, Maciąg et al⁷ showed that, during the scheduled visits, episodes of arrhythmias and device malfunctions were detected at similar rates in the outpatient visits and remote visits. Moreover, scheduled remote transmissions, which were performed in line with the study protocol every 3 months, resulted in no intervention in 89.9% of cases, confirming that the majority of patients do not require routine (every 3–6 month) visits to the outpatient clinic. These findings suggest that remote monitoring could replace the majority of in-person routine follow-up visits.

Conversely, during the unscheduled follow-up visits, both carried out in the office and remotely, arrhythmias were detected significantly more often than in the case of scheduled visits; about a third of unscheduled transmissions required medication interventions, additional consultations, an outpatient visit, or even hospital admission. This reflects one of the greatest advantages of remote monitoring of CIEDs: early detection of adverse events and prompt reaction, leading to major clinical benefits, particularly in patients with device or lead malfunctioning.

Another important issue addressed in the study is that during the study period, an increasing number of patients chose to be remotely monitored and that patient sense of safety increased. In patient opinion, the greatest benefit of the remote monitoring was fast intervention in case of need and an increased sense of safety. Patient acceptance is critical to a successful implementation of remote monitoring in health-care models. Multiple reasons could account for patient satisfaction with remote monitoring, including ease of use and positive psychological

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impact. Moreover, remote follow-up reduces the social impact of healthcare: less patients have to interrupt their working activities and do not have to travel to reach the hospital.

In conclusion, the study conducted by Maciąg et al⁷ presents corroborating evidence for the benefits and utility of remote monitoring among patients with CIEDs in a nationwide sample. It describes the feasibility of a postponed in-hospital follow-up, without an increased need for urgent consultations, to confirm good functioning of the implantable cardioverter-defibrillators. Moreover, patients monitored remotely report psychological improvements related to an increased perception of device surveillance. It is reasonable to think that telemedicine will gain more and more space in the future, especially under the revolution caused by the pandemic of coronavirus disease 2019,⁸ which imposes a reconstruction of clinical follow-up pathways.

ARTICLE INFORMATION

DISCLAIMER The opinions expressed by the author are not necessarily those of the journal editors, Polish Cardiac Society, or publisher.

CONFLICT OF INTEREST None declared.

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