e-Cardiology/Digital Health, Public Health, Health Economics, Research Methodology – e-Cardiology/Digital Health, Remote Patient Monitoring and Telehealth

Adherence to remote monitoring recommendations in current clinical practice: data from a remote monitoring database

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Background: The recently published Expert Consensus Statement on the Practical Management of Remote Device Clinic offers evidence-based recommendations for managing patients with cardiovascular implantable electronic devices (CIEDs).
Purpose: We examined data from a remote monitoring (RM) database to evaluate adherence to RM recommendations in current clinical practice.
Methods: According to RM guidelines, patients should be enrolled within 2 weeks of implantation for earlier detection of actionable events, and in any case, within 3 months, as it is associated with improved survival. Continuous connectivity should be maintained. In patients with continuous connectivity, alert-based RM may replace structured intermittent device follow-up. We analyzed data from 4427 CIED patients followed on the LATITUDE (Boston Scientific) remote network at 20 Italian centers. Patients were enrolled between 2010 and 2023, with a median RM duration of 37 months (25th-75th percentile: 21-60).
Results: The number of patients enrolled at the centers significantly increased during the observation period (Figure). In the overall RM population, we identified a group of patients (56%) enrolled after implantation (within 6 months) and a group of patients enrolled late during their follow-up. In the first group, RM receiver activation occurred within 2 weeks in 62% and within 3 months in 90% of patients. The second group consisted mainly of patients not yet in RM at the time of COVID-19 outbreak and included to allow RM of all patients at the centers. Overall, 96% of enrolled patients performed remote data transmissions during the observation period. As of the July 2023 data extraction, 1405 (33%) patients were not monitored, with no significant differences among CIED types (CRT-D: 37%; ICD: 32%; S-ICD: 32; Pacemaker: 30%). Most not-monitored patients (30%) had not transmitted data for over a year, likely due to patient death, CIED extraction, or other irreversible causes. For the remaining 3%, the recent loss of connection (occurring within a timeframe shorter than the scheduled transmission interval) should have prompted interventions to restore connection. Scheduled device transmissions occurred at least once every 3 months in 94% of patients. Considering individual device programming, the 2836 patients with consistent connectivity performed 25,281 scheduled transmissions in one year.
Conclusions: In current clinical practice, RM adoption is continually increasing, with generally observed adherence to post-implantation patient enrollment recommendations. However, a significant proportion of patients may activate RM earlier. Centers must implement solutions to ensure transmission continuity in a substantial percentage of patients. Nevertheless, the workload generated by this activity could be effectively balanced by adopting an alert-based RM strategy and reducing unnecessary scheduled transmissions.

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Enrolled patients trend