SAN FRANCISCO, CA — Patients with implanted devices, even if they are enrolled in a remote-monitoring program, don't always fully participate in the program in a way that keeps their devices consistently connected to providers, but they may live longer if they do. A cohort study with more than 262,000 patients with implanted devices with wireless transmission capability suggests that the more such patients are engaged in the program, the lower their mortality. And that goes even for the patients whose devices were conventional nonbiventricular pacemakers.

"For the first time, we show that there is a relationship between remote monitoring adherence and survival. Patients with high remote monitoring use had 53% greater survival than patients with low remote monitoring use, and a 140% greater survival than patients not using remote monitoring at all," said Dr Suneet Mittal (Valley Hospital Heart & Vascular Institute, New York, NY) when presenting the study here at the Heart Rhythm Society (HRS) 2014 Scientific Sessions. "However, we should also note that we show that the vast majority of patients are not undergoing remote monitoring."

To heartwire, Mittal said, "All patients should be enrolled in remote monitoring and encouraged to be engaged in remote monitoring at a high level, because the mortality reduction associated with remote monitoring is very significant and sizable."

Of the cohort, 43% had conventional pacemakers and another 3% had cardiac resynchronization therapy (CRT) devices without defibrillators (CRT-P). Another 23% had defibrillating CRT devices (CRT-D), and 32% had conventional implantable cardioverter defibrillators (ICD). All devices were from the study's sponsor, St Jude Medical.

Mittal and his colleagues gathered weekly remote-monitoring usage data from St Jude's proprietary network, finding that 25% of the cohort had "high" adherence, in that at least 75% of their total follow-up weeks included a status transmission; 21% had "low" adherence, in that <75% but >0% of their follow-up weeks included a transmission. And more than half, 54%, didn't use the remote monitoring network at all and were said to have "no" adherence.

The patients with any adherence to remote monitoring showed a significantly greater survival than patients with no adherence (adjusted hazard ratio [HR] 1.81, 95% CI 1.77-1.86, p< 0.001). The benefit was most pronounced among high adherers compared with no-adherence patients (HR 2.40, 95% CI 2.32–2.49; p<0.001) and compared with low-adherence patients (HR 1.53, 95% CI 1.47–1.59; p<0.001).

"Finally, even a low adherence to remote monitoring was significantly better than no use of remote monitoring," Mittal said; compared with no adherence, low adherence patients showed a survival HR of 1.56 (95% CI 1.51-1.61, p<0.001).

"The relationship between the low-adherence, high-adherence, and nonadherent [patients] held true for pacemakers, and the magnitude of this relationship was similar to that seen for the overall cohort," Mittal said.

A search for possible independent predictors of remote monitoring use vs nonuse—including zip code, demographics, education level, income level, type of health insurance, and urban vs rural location—turned up nothing, Mittal said.

On the other hand, "There was tremendous geographic variability in the United States, whether a patient was or was not using remote monitoring. Somewhat surprisingly, patients living in the highest population-density zones in the US—the Northeast, the Chicago area, Florida, and California—were the least likely to be enrolled and using remote monitoring, as opposed to those individuals living in the Midwest and the Pacific Northwest."
That geographic pattern suggests "that maybe physicians are erroneously thinking that remote monitoring is a feature that conveys convenience but no real medical benefit," Mittal said. "So maybe in these high-density population areas, there was a notion that it's easy to get to the doctor and it's the same as being remotely monitored. And maybe the people living in rural areas felt differently. So what we're really showing," he said, "is that it really shouldn't be thought of as something [that is simply] a mode of convenience. There appears to be something beyond that that translates into mortality benefit in our patients."

Mittal discloses receiving consulting fees or honoraria from St Jude Medical, Greatbatch Technologies, Biotronik, Medtronic, Boston Scientific, and Boehringer Ingelheim; he has equity interest in Topera Medical; and he received research grants from TyRx.

References