遠隔モニターはイベントから方針決定までの時間を短縮する

CONNECT：植込み型デバイスの遠隔モニターは方針決定に必要な時間を短縮し診療回数を減らす

CONNECT: Remote monitoring of implanted devices reduces time needed for clinical decision-making and results in fewer office visits

植込み型デバイスから循環器専門医の診察室へ自動的に不整脈情報を送信するワイヤレス監視システムは、問題が発生してから治療方針が決定されるまでの時間を有意に削減すると第59回American College of Cardiology学会で報告された。遠隔通知による方針決定時間の短縮に対する臨床評価（The Clinical Evaluation Of Remote Notification to Reduce Time to Clinical Decision：CONNECT）トライアルでは植込み型除細動器または心臓再同期療法除細動器を植え込まれた患者1,997人を組み入れ、遠隔モニターまたは標準的な診察室でのケアを行う群に無作為に割り付けた。ワイヤレス遠隔モニターは、電話回線を用いて診断に必要な情報を自動的に送信し患者側は何もする必要はない。遠隔モニター群患者はデバイス植込み1ヵ月後および15ヵ月後のみ受信した。標準的なケアを受けた患者は一般的には3～6ヵ月ごとの指定されたスケジュールで経過観察された。その結果、臨床上の問題発生からそれを処理する方針決定までの平均所要時間が有意に短縮された（標準的ケア群29.5日に対し遠隔モニター群10.5日）。平均入院期間も有意に短縮し（それぞれ4.0日対3.3日）、遠隔治療群患者において1回入院当たり推定$1,659の経費削減が見込まれた。

Full Text

A wireless monitoring system that automatically sends information about arrhythmias from a device in the patient's chest to the cardiologist's office significantly cuts the time between when a problem arises and a treatment decision is made, according to research presented at the American College of Cardiology's 59th annual scientific session.

The Clinical Evaluation Of Remote Notification to Reduce Time to Clinical Decision (CONNECT) evaluated a wireless remote monitoring and notification system based on Medtronic's Conexus-enabled cardiac resynchronization therapy defibrillators (CRT-Ds) and implantable cardioverter-defibrillators (ICDs). The wireless telemetry system was compared with standard care, in which a cardiologist reviews information from an implanted device during an in-person clinic visit. The study showed that remote monitoring and automatic notification cut by nearly two-thirds the time to clinical decision-making.

"This system allows the clinician to better manage the patient's disease by making critical information immediately available," said George H. Crossley, M.D., president of Mid-State Cardiology, a unit of St. Thomas Heart, and a clinical professor of medicine at the University of Tennessee College of Medicine, both in Nashville, TN. "By learning about clinical events earlier, we have the opportunity to intervene earlier, improve outcome and prevent disease progression."

The use of remote monitoring for follow-up of CRT-D or ICD, has the potential to improve both patient safety and healthcare efficiency. CONNECT is the largest randomized, prospective study designed to quantify these advantages.

For the study, researchers from 136 sites in the United States recruited 1,997 patients with an ICD or CRT-D, randomly assigning them to remote monitoring or standard in-office care. All patients were followed-up for 15 months after device implantation. Those in the remote-monitoring group were given a home monitor capable of receiving a wireless telemetry signal from the implanted device and automatically transmitting diagnostic information to the cardiologist's office over a telephone line, without any action on the patient's part. The devices were programmed to send routine information on a schedule determined by the cardiologist, and to immediately send alerts in the case of a worrisome development. Patients in the remote-monitoring group were seen in the office 1 month and 15 months after device implantation only. Patients receiving standard care were followed-up in the office on a fixed schedule, typically every three to six months, without remote monitoring.

Data from CONNECT showed a significant reduction in the time between the onset of a clinical problem and a clinical decision on how to manage it (29.5 days, on average, in the standard-care group vs. 10.5 days, on average, in the remote-monitoring group). There was also a significant reduction in the average length of hospitalization (4.0 days vs. 3.3 days, respectively), which resulted in an estimated savings of $1,659 per hospitalization, on average, for patients in the remote-monitoring group.

"Although in our current analysis we were not able to determine the direct mechanism of this reduction in the length of stay, this is the first trial to show a correlation between remote management and significant positive changes to healthcare utilization," Dr. Crossley said.

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