Medtronic News

Medtronic Data Show Effectiveness of Shock Reduction Technologies in Further Reducing Inappropriate Shocks

Results of Virtual ICD Study Presented at Heart Rhythm 2010

MINNEAPOLIS & DENVER, May 13, 2010 (BUSINESS WIRE) --Medtronic, Inc. (NYSE: MDT) released the Virtual ICD study data today that predicted 98 percent of studied implantable defibrillator patients would be free of inappropriate shocks one year after implant and 92 percent at five years post-implant. The Virtual ICD study used a statistical model that predicts that six advanced shock-reduction algorithms for implantable cardioverter-defibrillators (ICDs) and cardiac resynchronization therapy defibrillators (CRT-Ds) can reduce inappropriate shocks experienced by patients. The results were significant. The findings were released during Heart Rhythm 2010, the Heart Rhythm Society's 31st Annual Scientific Sessions.

"Among implanting physicians, shock reduction is a top priority," said Kent Volosin, M.D., cardiologist at the University of Pennsylvania in Philadelphia. "This evidence demonstrates that these advanced shock-reduction technologies could help physicians dramatically reduce inappropriate shocks."

ICDs and CRT-Ds are designed to provide painless pacing or life-saving shock therapy to stop fast or irregular heart beats, also known as ventricular arrhythmias, which can lead to sudden cardiac death. Sudden cardiac death kills more people each year than lung cancer, breast cancer and HIV/AIDS combined. [2] Medtronic estimates that more than 70,000 lives have been saved by implantable defibrillators during the last five years. While the majority of lifesaving shocks are appropriate, studies estimate that approximately 20 percent of patients with implantable defibrillators may experience inappropriate shocks within 2.5 years in response to a non-lethal arrhythmia or electrical noise within the device system.[3]

Data outlining the need for advanced shock reduction technology to reduce inappropriate shocks will be released Saturday, May 15, at Heart Rhythm 2010. Data on the impact of inappropriate shocks on health care utilization and the adoption rate of device programming strategies aimed at reducing shocks also will be released. These are among seven Medtronic abstracts released this week on shock reduction.

About the Virtual ICD Study

Researchers leading the Virtual ICD study developed a model that was retrospectively applied to 736 arrhythmic and non-arrhythmic shock episodes observed in patients who were enrolled in a multi-year clinical study. The Virtual ICD study modeled the effectiveness of six Medtronic-exclusive algorithms designed to distinguish between life threatening, non-life threatening arrhythmias or oversensing to reduce the delivery of inappropriate shocks. These algorithms are called SmartShock(TM) Technology and are automatically on when the device is implanted. SmartShock Technology is exclusively available on Medtronic Protecta(TM) devices now available in Europe and investigational only in the United States and under review by the U.S. Food and Drug Administration (FDA).

The SmartShock Technology algorithms include:

- Three solutions (Wavelet + PR Logic(R), SVT discrimination in the VF zone, and Confirmation +) in Protecta devices are designed to discriminate between different non-lethal and lethal arrhythmias to provide lifesaving shock therapy only when necessary.
- T-wave Discrimination and Lead Noise Discrimination features are designed to distinguish between deadly arrhythmias and oversensing to withhold shock therapy when appropriate.
- Lead Integrity Alert, first released in 2008, provides advanced warning of potential lead fractures so the patient can seek medical attention, and reduces the risk of receiving an inappropriate shock.

About Medtronic

Medtronic, Inc. (www.medtronic.com), headquartered in Minneapolis, is the global leader in medical technology - alleviating pain, restoring health, and extending life for millions of people around the world.

Any forward-looking statements are subject to risks and uncertainties such as those described in Medtronic's periodic reports on file with the Securities and Exchange Commission. Actual results may differ materially from anticipated results.

American Cancer Society. Cancer Facts and Figures. 2006.

[2]CIA. The World Fact Book - Rank Order - HIV/AIDS - deaths. Available at http://www.cia.gov.

[3] Kadish A, Dyer A, Daubert JP, et al, for the Defibrillators in Non-Ischemic Cardiomyopathy Treatment Evaluation (DEFINITE) Investigators. Prophylactic defibrillator implantation in patients with nonischemic dilated cardiomyopathy. *N Engl J Med*. May 20, 2004;350(21):2151-2158.

SOURCE: Medtronic, Inc.

Medtronic, Inc.
Public Relations
Catherine Peloquin, 763-526-2494
or
Investor Relations
Jeff Warren, 763-505-2696

---

https://news.medtronic.com/2010-05-13-Medtronic-Data-Show-Effectiveness-of-Shock-Reduction-Technologies-in-Further-Reducing-Inappropriate-Shocks