Medtronic News

New Study Finds Targeted Drug Delivery (TDD) is Associated with a Reduction in Health Care Utilization and Cost for Cancer Pain Patients

Savings Are Driven by Fewer Inpatient Visits, Shorter Inpatient Length of Stay, and Fewer Emergency Department Visits

DUBLIN - April 8, 2019 - Medtronic plc (NYSE:MDT) today announced results of a study published in*JAMA Network Open* that demonstrates a reduction in health care utilization and cost for cancer pain patients using targeted drug delivery (TDD) and conventional medical management (CMM) vs. CMM alone. The study found significant cost savings to payors, with fewer inpatient visits, shorter inpatient length of stay, and fewer emergency department (ED) visits for the TDD and CMM group. Over 12 months, TDD therapy was associated with a significant mean overall cost savings of $63,498 and fewer oral opioid prescriptions per patient. TDD, delivered via the Medtronic SynchroMed(TM)II Infusion System ("Medtronic Pain Pump"), is an alternative to oral opioids for patients and provides effective pain relief at a fraction of the oral dose with fewer side effects and may help reduce the use of oral opioids.1-4

The burden of cancer continues to increase on a personal and societal level and the National Cancer Institute projects that the yearly cost of cancer treatment in the United States will increase to $157 billion in 2020.5 Pain is prevalent in cancer patients and 55 percent of those undergoing active treatment report pain.6 It has been identified as a preventable reason for hospital admission and is associated with more than 40 percent of cancer ED visits.7 Liberal oral opioid use for cancer pain remains the standard of care despite increased health care utilization secondary to frequent adverse effects.8-10 Opioid prescription rates for cancer survivors have been reported to be 1.22 times higher than for those without cancer.11

"TDD should be considered as an option for patients with cancer-related pain," said Lisa J. Stearns, M.D., Center for Pain and Supportive Care, Phoenix, Ariz. and lead researcher. "It is proven safe and effective for cancer pain patients, offering pain relief and improvements in quality of life. Now, TDD also demonstrates a robust financial benefit, which is especially significant as the incidence and societal burden of cancer continues to increase."

The paper reports the results of a retrospective propensity-score matched analysis conducted using a large U.S. claims database comparing mean total commercial payer costs and health care utilization at two, six, and 12 months. Researchers matched commercial insurance beneficiaries with patients with severe uncontrolled cancer pain receiving TDD and CMM or CMM alone. Participants were matched on age, sex, cancer type, comorbidity score, and pre-enrollment characteristics. After matching, each group included 268 patients.

The study found that compared with CMM alone, TDD and CMM demonstrated the following per patient:

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- Cost savings: a mean total cost savings of $15,142 at 2 months and $63,498 at 12 months; cost savings at 6 months was not statistically significant
- Fewer inpatient visits at 2 months, 6 months, and 12 months
- Shorter hospital stays at 2 months (mean difference, 6.8 days), 6 months (mean difference, 6.8 days), 12 months (mean difference, 10.6 days)
- An association with fewer prescriptions for oral opioids at 12 months

The study showed that TDD and CMM is a cost-saving therapy to treat cancer pain, and based on these findings, increased use of TDD may have the potential to reduce future health care cost and utilization. As cancer rates continue increasing with the aging population, the authors concluded that considering more patients with significant cancer-related pain for TDD may result in substantial cost savings alongside improved quality of life.

TDD is proven safe and effective for managing cancer pain in patients whose life expectancy is three months or more.2 A study showed that at four weeks, 60 percent of patients using TDD and CMM reported a pain score of less than four (on a scale of 1-10) compared to 42 percent using CMM alone. Patients who received TDD and CMM also experienced fewer side effects, including less vomiting and confusion, fewer behavioral changes, and significantly less fatigue and sedation2. Patients who received TDD in another study experienced improvements in function.12

"Despite evidence that TDD provides better pain relief with fewer side effects than CMM, and has the potential to reduce oral opioid use, it is underutilized with appropriate patients," said Charlie Covert, vice president and general manager of the Targeted Drug Delivery business, which is part of the Restorative Therapies Group at Medtronic. "The results of this study complement the growing body of TDD data demonstrating the value of TDD to patients and the healthcare system."

About Targeted Drug Delivery (TDD)

The SynchroMed(TM)II Intrathecal Drug Delivery system is an implantable pump that delivers medication directly to the fluid around the spinal cord, enabling clinicians to prescribe reduced doses compared to systemically delivered medications. Randomized trial data showed that TDD provides better pain relief with fewer side effects when compared to CMM. The National Comprehensive Cancer Network recommends TDD as an option for patients who experience intolerable side effects or in whom systemic opioids are not effective.11

About Medtronic Pain Therapies

Medtronic has more than a 40-year history of developing innovative medical devices that have been shown to alleviate pain in different disease states and has a broad portfolio of device-delivered therapies that are alternatives or adjuncts to oral opioids.12 Medtronic strives to be at the forefront of medical device innovation and to develop high-quality pain therapies that reduce pain and improve quality of life. While Medtronic pain therapies do not treat opioid addiction, we are committed to leveraging our capabilities and product portfolio in partnership with stakeholders - patients, providers, payers, regulators, elected officials, patient advocacy groups and employers - to address the unmet needs of pain patients and to support efforts to prevent opioid misuse due to chronic intractable pain.

About Medtronic

Medtronic plc (www.medtronic.com), headquartered in Dublin, Ireland, is among the world's largest medical technology, services, and solutions companies - alleviating pain, restoring health, and extending life for millions of people around the world. Medtronic employs more than 86,000 people worldwide, serving physicians, hospitals, and patients in more than 150 countries. The company is focused on collaborating with stakeholders around the world to take healthcare Further, Together.

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.

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