Methadone may reduce need for opioids after surgery

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Patients undergoing spinal fusion surgery who are treated with methadone during the procedure require significantly less intravenous and oral opioids to manage postoperative pain, reports a new study published in the May issue of *Anesthesiology*, the peer-reviewed medical journal of the American Society of Anesthesiologists (ASA).

"This is a new application for an old pain medication that offers hope for reducing the development of acute pain in the first few days after surgery, as well as chronic postoperative pain and the need for opioid medications following discharge from the hospital," said Glenn S. Murphy, M.D., lead study author and physician anesthesiologist at NorthShore University Health System in Evanston, Illinois. "There is currently an opioid crisis in the United States, and intraoperative methadone offers promise as a drug that can reduce the need for these pain medications during recovery."

Methadone is a unique long-acting opioid that is typically used to relieve severe pain in people who are in need of medication around the clock for extended periods of time, and in those who cannot be treated with other medications. It is also used to prevent withdrawal symptoms in patients addicted to opiate drugs, specifically heroin.

"Appropriate pain control is essential for enhancing recovery," said Dr. Murphy. "Inadequate postoperative pain relief is associated with the development of a variety of adverse events, including cardiac and pulmonary complications, chronic postsurgical pain, decreased patient

satisfaction, and increased morbidity and mortality."

Severe pain in the early postoperative period remains a common, yet underestimated and undertreated problem. Despite advances in pain management strategies, patients undergoing surgery often experience severe pain during the first three postoperative days. Acute pain after spinal fusion surgery, which includes herniated disc repair, treatment for narrowing of the spinal canal, etc., may be particularly difficult to manage. Patients undergoing complex spinal surgery often have chronic nerve pain and are dependent on oral opioid medication, which puts them at risk of addiction and other complications.

The study included 115 patients who were randomly assigned to receive either methadone or placed in a control group to receive hydromorphone, a standard opioid administered during operations, at the start of surgery or during surgical closure, respectively. Hydromorphone, which is also commonly used as a pain medication after surgery, was also given to the patients studied following surgery to treat pain. To evaluate how effective methadone was in reducing post-surgical pain, researchers measured how much hydromorphone patients took during the first three days after surgery. They also measured patients' pain scores and satisfaction with pain management during that period.

In the methadone group, patients required a median of 5 mg of hydromorphone to treat acute pain on the first day after surgery, compared to 10 mg in the control group. On the second day, patients in the methadone group required less than 1 mg of hydromorphone, compared to 3 mg in the control group. On the third day, patients in the methadone group didn't require hydromorphone, compared to less than 1 mg in the control group.

Overall, patients given methadone required significantly less intravenous and oral opioid medication after surgery, reported lower pain scores, and

had improved global satisfaction with pain management, compared to patients who were given hydromorphone during surgery. No differences in opioid-related or other adverse events in either group were found, the authors note.

Provided by American Society of Anesthesiologists