INTRAVENOUS ACETAMINOPHEN CUTS OPIOID USE BY 66% AFTER SPINE SURGERY
Despite Its High Price Tag, IV Acetaminophen Can Save Costs (and Lives)

LOS ANGELES, CA—Despite its documented safety and efficacy, intravenous (IV) acetaminophen is prescribed far less to patients after spine surgery than an oral formulation, due to its comparatively high cost. In a “Best Paper” at the 33rd Annual Meeting of the North American Spine Society (NASS), researchers make the case that IV acetaminophen is a better value in that it cuts indirect costs and reduces potential opioid dependence in lumbar circumferential spine surgery patients.

According to the Centers for Disease Control and Prevention, more than 115 Americans die from an opioid overdose each day. The misuse of and addiction to opioids—including prescription pain relievers, heroin, and synthetic opioids such as fentanyl—is a serious national crisis that affects public health as well as social and economic welfare.

“Although not all opioid addictions begin with a prescription, we were pleased to find that the group assigned to the IV acetaminophen regimen took 66% less opioid medication and had shorter hospital stays than the group assigned to oral acetaminophen,” said Christina Dowe, BS, one of the study’s authors. “Despite the large cost discrepancy between the two formulations, by significantly reducing opioid usage—and its costs due to associated side effects such as potential addiction—that cost difference becomes far less dramatic and far less significant.”

The study, “Single-Center, Randomized Controlled Trial of Intravenous Versus Oral Acetaminophen Administration in Perioperative Care of Circumferential Lumbar Fusion: A Comparative Effectiveness Study,” was a prospective, single center, randomized controlled trial. Patients between the ages of 18-80 who had failed conservative management for more than 12 months and then underwent circumferential lumbar fusion surgery were included in the study. Patients were excluded if they had already undergone lumbar surgery at the index level(s), were diagnosed with osteoporosis, had dysphagia prohibiting oral administration, or had a history of substance abuse. Outcome measures included opioid equivalence, length of hospital stay, VAS measurements, and Oswestry Disability Index (ODI) scores.

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Patients were randomized to either the IV or oral (PO) acetaminophen treatment groups. Preoperatively, patients completed a baseline analgesic regimen questionnaire, surveys including VAS, SF-12, and ODI, and were administered their first acetaminophen dose within three hours of the first surgical incision. Postoperatively, patients received seven subsequent doses of their assigned acetaminophen, with access to supplemental analgesics if needed. Analgesic usage and VAS scores were monitored until discharge. Surveys were completed at six weeks and six months follow up.

Postoperatively, the daily morphine equivalence taken by the IV acetaminophen group was 66% less than the oral acetaminophen group (p<.05), with both the one- and two-level cohorts also seeing significant differences between groups. When looking at the average length of hospital stay between groups, the average time is not statistically significant. However, in the 1-Level group, it is notable that the average length of stay for IV patients was only 2.5 days, while the PO patients stayed for an average of four days.

In conjunction with an overall reduction in opioid usage, patient-reported surveys indicate better improvement of pain management with the use of IV acetaminophen following circumferential lumbar spine surgery. Despite the large discrepancy between the two formulations in cost to perceived benefit ratio, by significantly reducing the opioid usage and, therefore, its costs due to associated side effects, that discrepancy becomes far less dramatic. Our findings suggest that IV acetaminophen is a safe and effective alternative to current opioid-based postoperative analgesic regimens with a promising answer to the national public health emergency plaguing communities across the U.S.

The researchers concluded that IV acetaminophen is a safe and effective alternative to current opioid-based postoperative analgesic regimens and is a promising answer to the national public health emergency plaguing communities across the United States.

The study authors are: Christina Dowe, BS; Antonio T. Brecevich, MD; Samuel Grinberg, BA; Tucker C. Callanan, BS; Frank P. Cammisa, MD; Andrew A. Sama, MD; Alexander P. Hughes, MD; Matthew E. Cunningham, MD, PhD; Darren R. Lebl, MD; Federico P. Girardi, MD; Russel C. Huang, MD; Celeste Abjornson, PhD; Chad M. Craig, MD, FACP of the Hospital for Special Surgery in New York, NY.

This abstract does not discuss or include any applicable devices or drugs. The NASS 2018 Disclosure Index can be found on pages 174-194 of the NASS 33rd Annual Meeting’s final program.

More than 3,000 spine professionals will meet at the NASS 33rd Annual Meeting in Los Angeles, September 26-29, 2018 at the Los Angeles Convention Center to share the latest information, innovative techniques and procedures, best practices and new technologies in the spine field. NASS is a multidisciplinary medical organization dedicated to fostering the highest quality, evidenced-based and ethical spine care by promoting education, research and advocacy. NASS is comprised of more than 8,000 members from several disciplines, including orthopedic surgery, neurosurgery, physiatry, neurology, radiology, anesthesiology, research and physical therapy. For more information, visit www.spine.org, NASS Facebook and NASS Twitter.

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