Opioid Tolerance Influences Outcomes after Lumbar Fusion in Patients with Degenerative Pathology

Noah Levy  
*Thomas Jefferson University*, noah.levy@jefferson.edu

Max Detweiler  
*Thomas Jefferson University*, maxwell.detweiler@jefferson.edu

Dhruv K.C. Goyal  
*Thomas Jefferson University*, dhruv.goyal@jefferson.edu

Ariana Reyes  
*Thomas Jefferson University*, ariana.reyes@jefferson.edu

Alexander R. Vaccaro  
*Thomas Jefferson University*, Alex.Vaccaro@rothmaninstitute.com

Follow this and additional works at: [https://jdc.jefferson.edu/si_ctr_2022_phase1](https://jdc.jefferson.edu/si_ctr_2022_phase1)

Part of the Orthopedics Commons, Surgery Commons, and the Translational Medical Research Commons

**Let us know how access to this document benefits you**

**Recommended Citation**

Levy, Noah; Detweiler, Max; Goyal, Dhruv K.C.; Reyes, Ariana; and Vaccaro, Alexander R., "Opioid Tolerance Influences Outcomes after Lumbar Fusion in Patients with Degenerative Pathology" (2020). *Phase 1*. Paper 44.

[https://jdc.jefferson.edu/si_ctr_2022_phase1/44](https://jdc.jefferson.edu/si_ctr_2022_phase1/44)

---

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's Center for Teaching and Learning (CTL). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Phase 1 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.
Opioid Tolerance Influences Outcomes after Lumbar Fusion in Patients with Degenerative Pathology
Noah Levy, Max Detweiler**, Dhruv Goyal, Ariana Reyes, Dr. Alexander Vaccaro*

(*) indicates primary project advisor
(**) indicates another student who is declaring the same project as primary for SI

Introduction: Extended opioid use prior to surgery has been implicated in poorer postoperative outcomes. However, it remains unclear if there is a significant difference in postoperative outcomes among preoperative opioid-naïve and opioid-tolerant patients who undergo lumbar spinal fusion. The purpose of this study was to determine the effect of preoperative opioid use on patient-reported outcome measures in patients undergoing lumbar spinal fusion.

Methods: This retrospective cohort analysis identified 260 patients who underwent lumbar spinal fusion at a high-volume, single institution. There were two cohorts: patients who were opioid-naïve (defined as total opioid consumption of ≤ 7 days in the two months prior to surgery) and opioid-tolerant users (> 7 days). Outcome measures were analyzed via the number of and duration of opioid tablets consumed, and patient-reported outcome measures (ODI, SF-12 PCS and MCS, and VAS Back and Leg pain scores).

Results: Overall, opioid-naïve patients were prescribed significantly fewer tablets on average compared to opioid-tolerant users. The number of tablets prescribed prior to surgery was a predictor for prolonged opioid use—defined as greater than one script
after surgery. Opioid-tolerant users had decreased improvement in outcomes postoperatively compared to opioid-naïve users.

**Discussion:** This study suggests that preoperative opioid-tolerant usage was associated with worse outcome scores postoperatively. Opioid-tolerant users were found to have significantly more pain medication tablets preoperatively and for a longer duration postoperatively. Therefore, opioid-tolerant usage can adversely affect patient outcomes and is a modifiable risk factor prior to undergoing lumbar spinal fusion.