

The Effect of Marijuana on Postoperative Spine Patients' Emergency Room Visits, Readmission Rates, and Opioid Consumption

Vincent Buddle, James Feng, Maximillian Young-Kyu Lee, Ahyoung L Park, Daniel K Park

INTRODUCTION: The social, political, and legal natural of marijuana has recently seen significant changes, particularly in favor of both medical and recreational use. Since being classified as a Schedule I substance in 1970 by the United States federal government, all but four states have legalized some form of its use. These changes have and will continue to lead to a significant number of orthopaedic patients using marijuana in the perioperative surgical setting. The objectives of this study are to 1) compare the 90-day rates of postoperative emergency department (ED) visits and 90-day readmission rates with patients whom tested positive for tetrahydrocannabinol (THC) preoperatively with those who were THC negative as well as patients that were positive for opioids and THC; 2) to compare postoperative opioid consumption, using morphine milligram equivalents (MMEs), for patients whom tested positive for THC preoperatively with those who were THC negative and those positive for opioids and THC both preoperatively.

METHODS: A retrospective review of all patients undergoing spine surgery at a single institution and by a single fellowship trained orthopaedic spine surgeon over a 3-year period were reviewed. Three patient groups were generated and confirmed with preoperative urine drug screens; the control group, which was negative for both preoperative narcotics and THC and the two comparison groups which were negative for preoperative narcotics but positive for THC and the other which was positive for both preoperative narcotics and THC. Chart reviews were conducted to determine if there was an ED visit or hospital readmission 90 days from the index procedure. MMEs were calculated for all patients. Additionally, demographic data and patient characteristics necessary for calculation of Charlson Comorbidity Index were recorded.

RESULTS: There was a total of 254 patients in the THC negative control group, 54 patients in the THC positive group, and 47 in the THC and opioid positive group. THC positive patients were found to be statistically younger and more likely to be current tobacco smokers. No other statistically significant differences were noted in demographics between the groups. The 90-day ED visit and 90-day readmission rate was not statistically significant between the groups. Both THC and opioid positive and THC only positive patients showed a higher 90-day MME, 2543.51 ± 2678.69 and 680.23 ± 880.45 respectively versus 423.42 ± 625.38 compared to the control ($p < 0.0001$).

DISCUSSION AND CONCLUSION: Operative spine patients who test positive for THC preoperatively are more likely to consume higher amounts of narcotics postoperatively compared to a control group. The return to ED rates are similar between THC positive and negative patients, and while not statistically significant, there is a trend that THC positive patients are likely to return to the ED sooner.