

## ABSTRACT

*Introduction:* An estimated 15-25% of patients with chronic low back pain may in fact suffer from sacroiliac (SI) joint dysfunction<sup>9, 10</sup>. SI joint fusion has become a common treatment option for the management of SI joint dysfunction. However, little is known about opioid use prior to and after surgical treatment in this patient population.

*Methods:* The medical records of 62 patients treated with SI joint fusion at our institution were reviewed in this retrospective study. The Colorado Prescription Drug Monitoring Program (CPDMP) was accessed to gather opioid prescription information for these patients. Only those patients who had received an opioid prescription within 3 months prior to their surgery were included in the study. Patients who had sacroiliac joint fusion but underwent another surgical procedure during the 12 month follow-up period were excluded from analysis. Preoperative (6 and 3 months) and postoperative (3, 6, 9, and 12 months) mean morphine milligram equivalents (MME) were collected from the CPDMP database for each patient. Patient demographic and medical comorbidity data were also documented to identify any correlations or potential risk factors for chronic opioid prescribing. Visual-analog scale (VAS), Oswestry Disability Index (ODI), and Denver SI Joint Questionnaire (DSIJQ)<sup>13</sup> scores were recorded for each patient to assess clinical outcomes.

*Results:* At 3 months prior to surgery, patients were prescribed an average of 47.2 mean MME/day. At no point postoperatively did the quantity of opioids, measured in MME/day, change significantly from the 3 months preoperative prescription quantities (Table 1). There was no significant difference in the quantity of opioids received by men vs. women (Table 2), in patients with vs. without anxiety and/or depression (Table 3) or in younger vs. older patients (Table 4).

Low body mass index was correlated with decreased opioid prescriptions at 6 months postoperative but became statistically insignificant again by 9 months postoperative (Table 5).

Significant improvements in VAS scores were recorded for all postoperative clinical evaluation time points (6 weeks, 3 months, 6 months and 12 months) compared to preoperative scores. By 12 months postoperative, VAS scores had decreased from 6.2 to 3.9 ( $p < 0.001$ ). This change is not only statistically significant but also meets the criteria for minimum clinically important difference (MCID) in scores. Both the ODI and DSIJQ patient-reported outcomes scores also showed significant improvements at 12 months after surgery (ODI: 48.9 preoperative vs 24.6 postoperative,  $p = 0.02$ ; DSIJQ: 53.2 preoperative vs 17.4 postoperative,  $p = 0.014$ ). The ODI improvement also met the MCID criteria. By 6 months postoperatively, there was no significant correlation in VAS or ODI and opioid use. There was no significant correlation between the DSIJQ scores and the daily dose of opioids at any point postoperatively.

*Conclusion:* Quantity of opioid prescriptions received by patients with SI joint pain did not change significantly from 3 months preoperatively to any point postoperatively despite significant improvements in all patient-reported outcome measures. This discordance between long-term opioid requirements and positive clinical outcomes is concerning and warrants further investigation.