

**Misuse of Opioid Medications in Orthopaedic Postoperative Patients**

*Anup Gangavalli, MD<sup>1</sup>; Ajith Malige, BS<sup>2</sup>; George Terres; Saqib Rehman, MD<sup>3</sup>; Chinenye Nwachuku, MD<sup>1</sup>*

<sup>1</sup>*St. Luke's Hospital, Bethlehem, Pennsylvania, USA;*

<sup>2</sup>*Temple/St. Lukes University Medical School, Bethlehem, Pennsylvania, USA;*

<sup>3</sup>*Temple University Hospital, Moorestown, New Jersey, USA*

**Background/Purpose:** Appropriate pain management in postoperative patients is always evolving, with increasing scrutiny on the upward trend in the use of opioids as analgesics. Unfortunately, this increased use coupled with the introduction of high-dose, extended release formulations has increased opportunities for addictive illicit use. This study examines three conditions: the distribution of patients who believe they are not being prescribed enough pain medication, patients who use prescribed opioid medications at a higher than recommended dose, and patients who take additional opioid medications in addition to their prescribed analgesics. These conditions were stratified by age, employment, income, education, illicit drug use, pain interference with activities of daily living, and anatomical surgical site. We believe that opioid medication misuse is prevalent in the orthopaedic population and can be predicted by certain factors. We hope this study will provide orthopaedists with the trends they need to develop more effective pain regimens for their patients.

**Methods:** This survey based study was conducted at two Level I trauma centers representing both an urban and suburban community, over a 10-month period. 182 patients between the ages of 18 and 89 years who underwent surgical intervention for fractures involving the pelvis, long bones, or peri-articular regions of the knee, ankle, elbow, and wrist were asked to participate. The questionnaire aimed to identify trends in opioid medication misuse and sources of obtaining extra opioid medications. Data were analyzed using simple descriptive statistics and  $\chi^2$  or Fisher's exact tests to determine significance of association between the three aforementioned conditions and general demographic factors with significance set at  $P < 0.05$ .

**Results:** Overall, 19.2% of patients ( $n = 35$ ) believed that their surgeon did not prescribe them enough pain medication. Among them, unemployed patients ( $P < 0.01$ ), low-income patients making less than \$12,000 a year ( $P = 0.01$ ), and self-reported illicit drug users ( $P < 0.01$ ) were more likely to report that their surgeon did not prescribe them enough pain medication. 12.6% of patients ( $n = 23$ ) admitted to using pain medications at a higher dose than prescribed. Unemployed patients ( $P = 0.04$ ), lower-income patients ( $P = 0.04$ ), patients who were not High School graduates or GED recipients ( $P = 0.03$ ), and patients admitting to illicit drug use ( $P < 0.01$ ) were also more likely to report using pain medications at a higher dose than prescribed. Finally, 33.5% of patients ( $n = 61$ ) admitted to using other pain medications in addition to their prescribed analgesics. Within this group, 9.3% of patients ( $n = 17$ ) admitted to using other opioid pain medications that were not prescribed, with only unemployed patients ( $P = 0.01$ ) and self-reported illicit drug users ( $P < 0.01$ ) more likely to use nonprescribed opioid pain medications. Four patients reported obtaining these additional opioids from other doctors, 1 reported buying analgesics "off the street,"

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.

5 reported obtaining these medications from family or friends, and 7 patients declined to indicate a source.

**Conclusion:** There are several groups of patients who are found to be at risk for misusing opioid pain medications. Awareness of these demographics may best serve orthopaedists in their efforts to devise a successful pain regimen and minimize potential patient harm from the adverse effects of opioids. Additionally, surgeon awareness of additional opiate sources may also help engender safer prescription practices.