Factors Predictive of Inpatient and Post-Discharge Prescription Opioid Consumption in an Orthopaedic Trauma Population

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Purpose: Understanding factors associated with opioid use may identify patients susceptible to developing dependency. The purpose of this study was to determine factors associated with inpatient and post-discharge opioid use following orthopaedic trauma.

Methods: 235 adult patients treated operatively for fracture with a minimum of 1 overnight hospital stay were reviewed. Inpatient opioid use, discharge prescriptions, and post-discharge opioid consumption for 6 months were documented. Opioids were converted to oral morphine equivalents (OME). Factors analyzed as potential predictors of opioid consumption were: age, sex, race, insurance, employment, medical comorbidities, use of alcohol, tobacco, or narcotics prior to admission, ISS, the presence of a complication, ICU admission, inpatient opioid use, and discharge prescriptions.

Results: 140 men and 95 women mean age 50 years and mean ISS 11 were studied. Mean lengthy of stay (LOS) was 7.2 days, and 24.3% were admitted to the ICU. Inpatient opioid use was associated with younger age ($R^2 = 0.0540$, $P < 0.0003$) higher ISS ($R^2 = 0.1288$, $P < 0.0001$), ICU admission (139 vs 68.5, $P < 0.0020$), and baseline tobacco use (107 vs 69.8, $P < 0.0038$). Patients with prior opioid use did not have higher inpatient needs (84.6 vs 90.1 OME). Predictive modeling for inpatient opioid use demonstrated a negative correlation with age and positive with ISS and ICU admission (model $R^2 = 0.205$; $P < 0.0001$). Discharge prescription was negatively correlated with age and LOS and positive with history of opioid use (adjusted $R^2 = 0.0708$, $P = 0.0002$). After discharge males (1593 vs 843 OME, $P = 0.02$), those who used alcohol (1815 vs 786 OME, $P = 0.007$), and who received larger narcotic prescriptions at discharge ($R^2 = 0.0553$, $P = 0.0003$) consumed more narcotics, with no association with inpatient use, employment or insurance. Modeling predicted post-discharge opioid use to be greater in patients receiving larger prescriptions for narcotics at discharge and those who use alcohol at baseline (adjusted $R^2 = 0.073$, $P < 0.0001$), irrespective of type and severity of injury.

Conclusion: Younger age, higher ISS, and ICU admission were predictive of greater inpatient opioid use. However, inpatient use and ISS were not associated with post-discharge opioid use. Rather, post-discharge use is higher in patients receiving more narcotics at discharge and in those who use alcohol.

POSTER ABSTRACTS