Prospective Analysis of Home Narcotic Consumption and Management of Excess Narcotic Prescription Following Adolescent Idiopathic Scoliosis Surgery

Ali Elaydi, Dominick Tuason[1], Wyatt B David, John Garcia-Munoz
[1]Yale University

INTRODUCTION: Adolescent idiopathic scoliosis (AIS) is a common spinal pathology in the pediatric realm. The mainstay of surgical correction of AIS is a posterior spinal fusion (PSF) which requires a multi-modal pain regimen often containing narcotics. Over prescription of opioids could play a role in the current drug-abuse epidemic. Currently, there is wide variability in narcotic usage after PSF and limited evidence-based guidelines available addressing the amount and duration of postoperative narcotic use. The aim of this study was to quantify and characterize factors associated with the outpatient narcotic intake of patients following posterior spinal fusion for adolescent idiopathic scoliosis as well as demonstrate a safe and effective method of disposing of unused narcotics.

METHODS: Following Institutional Review Board approval, retrospective review of prospectively collected data from patients undergoing PSF for AIS took place. Pain scores, narcotic use, patient demographic data, pre-, intra-, and post-operative parameters, and discharge data were gathered via chart review. Patients were divided into 2 groups according to narcotic use, high-use (top 25th percentiles) and low-use (bottom 75th percentiles), and multivariate statistical analysis was conducted. Narcotic surplus was collected during post-operative clinic visits and disposed of using biodegradable bags.

RESULTS: Statistical analysis of 27 patients included in the study showed that patients with a higher home narcotic use correlated with increased length of hospitalization with an average of 3.4 days compared to the lower use group of 2.8 day ($p=0.03$). Higher use group also showed increased inpatient morphine milligram equivalent (MME) of 40.7 MME compared to the lower use group with 22.65 MME ($p=0.02$). There was no significant difference of home narcotic use when looking at patient age, height, weight, BMI, levels fused, intraoperative blood loss or length of surgery

DISCUSSION AND CONCLUSION: Our study suggests that, despite a high number of pills consumed in the outpatient setting, there are not a significant number of patient- or surgical-level factors predisposing patients to increased home narcotic usage following spinal fusion for adolescent idiopathic scoliosis. Patients who utilized higher amounts of narcotics in the outpatient setting had significantly longer hospital stays and higher in-patient narcotic intake than those with lower utilization. Careful consideration of in-hospital narcotic usage can inform physicians of the patient's home narcotic needs and help estimate appropriate dosing. Furthermore, a large number of prescribed opioids were unused and disposed of in clinic highlighting the need of a platform for narcotic disposal in addition to better dosing strategies to minimize the accessibility of unused narcotics and help mitigate the drug-abuse epidemic. Implementation of ERAS protocols may allow for decreased in- and out-patient narcotic intake with subsequent improved patient care and decreased healthcare expenditures.