Doc, I Can't Sleep! (How Prevalent Are Sleep Disturbances in Orthopaedic Trauma Patients at 3 Months Postinjury?

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Purpose: The purpose of this prospective study was to determine the spectrum of sleep disturbances in orthopaedic trauma patients for 3 months following surgery and to identify patients at risk for prolonged sleep disturbance.

Methods: Patients at a Level-I trauma center were screened at their initial postoperative visit. Inclusion criteria were patients 18-75 years with an orthopaedic injury requiring surgery. Exclusion criteria were concussion and/or history of narcotic medication. Eligible patients completed validated outcome measures: the Pittsburgh Sleep Questionnaire Index (PSQI) and Insomnia Severity Index (ISI). A score of >5 on the PSQI indicates poor sleep quality and a score of ≥15 indicates insomnia. Baseline data, patient demographics, and injury details were collected. The patients were seen in clinic 3 months later. The same 2 investigators performed all patient interviews. Descriptive statistics, $\chi 2$, paired t-tests, and Mann Whitney nonparametric tests were utilized for analysis with SPSS 24.0 (IBM).

Results: 44 males and 22 females with an average age of 44 years (range, 18-74) were included. 28 patients (43%) were injured in a fall, 26 (39%) in motor vehicle (MVC)/motorcycle collisions (MCC), and 12 (18%) other causes. There were 39 lower-extremity fractures and 15 upper-extremity fractures. 12 patients had more than 1 fracture. Analysis of PSQI data revealed that at baseline, 39% of patients reported a sleep disturbance (PSQI >5); this increased to 56% 3 months postoperatively ($P < 0.05$). Subsequent gender-stratified analysis revealed significant differences in females. Analysis of the PSQI subcategories pertaining to the 7 domains of sleep revealed significant differences in disturbance, latency, efficiency and quality. Female patients also showed the most significant decrease in sleep efficiency and sleep quality. At baseline, 36% of patients reported at least some degree of insomnia per ISI, while at 3 months, 45% of patients reported some degree of insomnia ($P<0.05$). Three months postoperatively, 14 patients (21%) were still taking narcotic medications (not significant). No patients required revision surgery in the first 3 months.

Conclusion: This study is the first to describe the prevalence of sleep disturbances in orthopaedic trauma patients as far as 3 months postoperatively. There was a significant increase in females who reported poor sleep quality and insomnia. This may be potentially explained by possible posttraumatic stress disorder, which is more common in females. These findings demonstrate that sleep disturbances merit attention throughout the entire recovery process. As providers, we need to begin viewing postoperative sleep disturbances not only as a common problem but also as an opportunity to improve patients' recovery process.