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Real-world, population-level data on the prevalence of conditions associated with acute and chronic pain in pediatric patients and the ways in which such pain is treated are minimal in the published literature. Having an understanding of the frequency and duration of conditions associated with pain in children, the characteristics of these patients, and the ways in which such pain is being managed can help to inform provider education, treatment guidelines, and the design of pediatric pain studies.

The objectives of this study were to estimate the prevalence of conditions associated with acute and chronic pain in pediatric patients, to describe their demographic and clinical characteristics, to characterize the use of various pharmacological treatments, including both analgesics (NSAIDs, COX-2 inhibitors, and opioids) and non-analgesics (such as anticonvulsants, muscle relaxers, antidepressants, and topical treatments), for conditions associated with pain, and to provide a contrast of the prevalence and treatment of conditions associated with pain in pediatric patients with Commercial vs. Medicaid insurance.

This retrospective observational study was conducted using the MarketScan Commercial and Medicaid databases for 2009-2012. A list of conditions associated with pain was developed; it included orthopedic conditions, malignancies, surgeries, trauma, genetic conditions, and other painful conditions, such as arthritis and migraine. Descriptive statistics were used to assess the prevalence of each of the conditions over one year, patient medical and demographic characteristics, the proportion of patients receiving various treatments, and treatment utilization characteristics such as duration of use, dose, and use following inpatient stays. All analyses were stratified by patient age group and insurance type.

This study included data on 25.5 million pediatric patients from throughout the US who had Commercial or Medicaid insurance. The prevalence of most conditions was low (e.g. 0.1% had scoliosis, 5.6% surgeries, and 0.7% genetic conditions associated with pain in the Commercial database; in Medicaid the corresponding prevalence estimates were 0.8%, 9.7%, and 0.4% respectively) and varied by age. In Commercially-insured patients, 26.1% of the patients received 1 or more of the treatments under study, compared to 52% of Medicaid patients. Treatments varied substantially by condition, age, and insurance. Most treatments were used short-term, but duration of treatment varied substantially by condition and treatment type. For example, in Commercially-insured patients, 98% of IR opioids were prescribed for <30 days, compared to 66% of ER opioids, 71% of NSAIDs, 84% of topical treatments, and 8% of anticonvulsants; in Medicaid patients, the corresponding percentages were 97%, 61%, 88%, and 9%, respectively. Analgesics were received within 7 days after an inpatient stay in 7.5% of Commercially-insured patients and 11.7% of Medicaid patients.

Pharmacological treatments for conditions associated with pain vary substantially by condition, treatment type, insurance, and the age of the patient. These data can be used to inform the design of clinical trials for pediatric pain as well as provider-training-focused activities.
