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New study finds that opioids are overprescribed to children and adolescents following common orthopaedic procedures

SAN DIEGO, Calif. (August 31, 2021)—While pain control is an important component of orthopaedic surgery postoperative care, the practice of overprescribing opioid medications has become a contributing factor to the misuse of narcotics in the United States. A new study presented at the 2021 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS) analyzed opioid prescribing behaviors for children and adolescents undergoing common orthopaedic surgical procedures and found that patients used significantly less opioids than the quantity prescribed, with 56% of the medication remaining unused in the postoperative period.

Lead researcher Cliff Willimon, MD, FAAOS, along with fellow researchers Asahi Murata, BS, Aanya Agrawala, BS, and Crystal Perkins, MD, conducted the study to describe the average opioid use among adolescents. They looked at seven common orthopaedic surgeries:

- Posterior spinal fusion for adolescent idiopathic scoliosis
- Epiphysiodesis (guided growth procedure to fix crooked legs or severe bowing)
- Closed reduction and percutaneous pinning of supracondylar humerus fracture (the most common elbow fracture in children)
- ACL reconstruction
- Shoulder arthroscopy to repair a dislocated or loose shoulder
- Hip and knee arthroscopy to repair cartilage injuries

“We previously conducted a study determining the average time for return to school for children following these surgeries to manage expectations and help families plan for the recovery process,” said Dr. Willimon, orthopaedic surgeon and practice director of Children’s Orthopaedics and Sports Medicine at Children’s Healthcare of Atlanta. “Our recent study on opioid use was another way for us to improve outcomes by helping patients and families best understand the amount of opioids needed to control pain.”

A total of 340 patients (172 female, 162 male) completed a medication logbook to track which medications they were taking (prescription and over the counter) and when they took the medicine; and a questionnaire to determine how well their pain was controlled. Patients ranged in age from five to 21 with a mean age of 14 years. The patients were prescribed a total of 9,796 tablets and liquid doses of either hydrocodone-acetaminophen 5-325 mg tablets or hydrocodone-acetaminophen 7.5-325 mg/15 mL elixir for postoperative pain control, with an average of 28 tablets or liquid doses per person. Ninety-eight percent of patients filled the prescription.

The findings of the study reveal:

- Patients consumed a total of 4,351 tablets or liquid doses of the narcotic medication; however, approximately 5,500 doses (56%) of the prescribed medication remained unused.
- Ninety-two percent of patients were either very satisfied or satisfied with their pain control.
- Sixty percent of patients reported one or more side effects from the hydrocodone, with the most common being drowsiness and constipation.

- For prescribing habits and consumption by procedure, hip arthroscopy reported 74% unused doses (7 doses consumed, 28 prescribed), followed by epiphysiodesis at 62% (7 doses consumed, 28 prescribed), and knee arthroscopy at 61% (8 doses consumed, 21 prescribed).
- There were no significant differences in the amounts of narcotics consumed between age, sex, or ethnicities.
- Non-steroidal anti-inflammatory drug usage significantly decreased the total number of narcotics consumed by 5.1 tablets and reduced the duration of narcotics use by 1.7 days.

“The results of the study and the information we gleaned from the questionnaire provide great education opportunities for patients, families, and the entire healthcare team,” said Dr. Willimon. “For example, some patients thought they needed to finish the entire prescription, similar to an antibiotic, despite the medication not being prescribed or instructed to be taken in that manner. Knowing this helped us improve how we educate patients and families, and based on our data, we can give general recommendations on how many doses patients can expect to need so surgeons can prescribe more accurately. Patients who get off to a good start in their recovery typically have an easier recovery process, so it is important that everyone is on the same page when it comes to pain management.”

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2021 AAOS Annual Meeting Disclosure Statement

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With more than 39,000 members, the American Academy of Orthopaedic Surgeons is the world’s largest medical association of musculoskeletal specialists. The AAOS is the trusted leader in advancing musculoskeletal health. It provides the highest quality, most comprehensive education to help orthopaedic surgeons and allied health professionals at every career level best treat patients in their daily practices. The AAOS is the source for information on bone and joint conditions, treatments, and related musculoskeletal health care issues, and it leads the health care discussion on advancing quality.

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Contact AAOS Media Relations

Lauren P. Riley	847-384-4031	708-227-1773	pearson@aaos.org
Deanna Killackey	847-384-4035	630-815-5195	killackey@aaos.org