

Policy on Pediatric Dental Pain Management

Latest Revision

2022

Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes that children vary greatly in their cognitive and emotional development, medical conditions, and responses to pain and interventions. This policy is not intended to provide clinical recommendations, which can be found in AAPD's best practice on pain management¹; rather, the purpose of this document is to support efforts to prevent or alleviate pediatric pain and complications from pain medications. Infants, children, adolescents, and those with special health care needs can and do experience pain; dental-related pain in most patients can be prevented or substantially relieved. The AAPD further recognizes many therapeutics are available to treat pain with varying regimens. Recent concerns have developed about toxicities associated with codeine and the adverse effects of opioid analgesics.

Methods

This policy was developed by the Council on Clinical Affairs, adopted in 2012², and last revised in 2017³. This document is an update of the previous version and is based on a review of current dental and medical literature pertaining to pediatric pain management including a search with PubMed®/MEDLINE using the terms: pediatric dental pain management, pediatric pain management, pediatric postoperative pain management, pediatric analgesic overdose; fields: all; limits: within the last ten years, humans, all children zero to 18 years, English, clinical trials, and literature reviews. The search returned 8,031 articles. When data did not appear sufficient or were inconclusive, information included in this policy was based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background

Pain assessment is an integral component of the dental history and comprehensive evaluation. A detailed pain assessment helps the dentist to derive a clinical diagnosis, develop a prioritized treatment plan, and better estimate analgesic requirements for the patient.⁴ Assessment of pain indicates the need for intervention and appropriateness of treatment.⁴ Assessment of pediatric pain may significantly improve the patient's comfort and quality of life.⁵ Research suggests that undertreatment of pediatric pain can amplify future pain experience.⁶ Effective pain management is important in both the short and the longterm.⁴ Children with an established dental home have better access for acute and chronic orofacial pain management.

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A dental home provides comprehensive care which can assess and manage acute and chronic oral pain and infection.⁷

Pain management may range from nonpharmacologic modalities to pharmacological treatment. Nonpharmacologic therapy includes maintaining a calm environment, encouraging deep breathing, and employing guided imagery, distraction, play therapy, hypnotherapy, virtual reality, and other (e.g., acupuncture, transcutaneous nerve stimulation) techniques.^{1,8} Pharmacologic therapy may consist of administration of topical and local anesthesia, analgesic medications, and/or mild, moderate, or deep sedation regimens.^{8,9} Analgesic selection depends on the individual patient, the extent of treatment, the duration of the procedure, psychological factors, and the patient's medical history.¹⁰ If moderate to severe postoperative pain is considered likely, administering an analgesic on a regular schedule for 36 to 48 hours helps to maintain a stable plasma levels of the agent and decreases risk for breakthrough pain.^{11,12}

Many therapeutics are available for the prevention of pain. Acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, are considered first line agents in the treatment of acute mild to moderate postoperative pain.¹⁰ Alternating administration of ibuprofen and acetaminophen is another strategy for pain management in children and may allow lower doses of each individual medication to be used.^{11,13,14} Many analgesics have multiple modalities of administration, such as oral, rectal, or intravenous, to accommodate a wide patient population.¹⁵ Consideration of these modalities may be pertinent when treating patients in different environments such as an office-based outpatient setting versus in the hospital.

Certain analgesics are contraindicated in the pediatric population due to concerns for toxicity and adverse reactions. NSAIDs may prolong bleeding time and exacerbate kidney or liver impairment, and acetaminophen overuse may be associated with hepatotoxicity.^{10,16} Aspirin-containing analgesics are contraindicated for pediatric pain management in most situations because, if administered during a viral illness, the potential exists for a serious condition known as Reye syndrome, a condition that causes swelling of the liver and brain.¹⁵

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **FDA:** U.S. Food and Drug Administration. **NSAIDs:** Nonsteroidal anti-inflammatory drugs.

Although opioid analgesics can be effective for moderate to severe postoperative pain, there are potential adverse effects (e.g., nausea, emesis, constipation, sedation, respiratory depression) and diversion.^{13,17,18} From 2006 to 2018, the opioid dispensing rate for the pediatric population steadily decreased.¹⁹ Persistent opioid use among children and adolescents is a major concern and represents an important pathway to opioid misuse.²⁰ A 2013 systematic review found a combination of acetaminophen and ibuprofen provided effective analgesia without the adverse side effects associated with opioids; the combination of acetaminophen and ibuprofen was shown to be more effective in combination than either medication alone.¹⁴ In 2017, the United States Food and Drug Administration (FDA) issued a warning to restrict the use of codeine and tramadol in children and breastfeeding mothers.²¹

Policy statement

The AAPD recognizes that pediatric dental patients may experience pain as a direct result of their oral condition or secondary to invasive dental procedures. Inadequate pain control has the potential for significant physical and psychological consequences, including altering future pain experiences for these children. Furthermore, pharmacologic agents used in pediatric pain management have potential for toxicity and adverse reactions, with narcotics at risk for diversion to unintended recipients. Therefore, the AAPD encourages:

- healthcare professionals to emphasize preventive oral health practices and to implement safe and effective pre-, intra-, and post-operative approaches to minimize the patient's risk for pain.
- healthcare practitioners to follow evidence-based recommendations regarding analgesic use by pediatric patients to minimize untoward reactions and potential for substance misuse.
- additional research to determine safe and effective treatment modalities for acute pain.

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