

Managing “Simple Toothache” in Children Presenting to the Emergency Department

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BACKGROUND

- Existing research has shown that about 1-4% of all hospital emergency department (ED) visits annually are related to dental conditions, such as dental caries, pulpal lesions, and gingival conditions.
- Ninety percent of these dental-related ED visits do not result in the performance of dental procedures; most patients are treated with prescription medications.
- The frequency of opioid and antibiotic prescribing in the ED for dental pain without overt infection is not well known.
- The aim of this community-based study is to analyze ED prescribing patterns for the treatment of “simple toothache” in children.

METHODS

- This was a retrospective cohort analysis of consecutive pediatric patients diagnosed with dental pain without obvious infection (defined as fever, intraoral or extraoral swelling, purulence, or trismus).
- Patients were seen at seven EDs over a 48-month study period.
- Spanning 13 counties in Michigan, affiliated institutions included three rural medical centers, three university-affiliated hospitals, and a children’s tertiary care facility.
- Clinical findings, treatment in the ED, and final disposition were recorded using automated electronic data extraction.
- Our study hypothesis was that both opioids and antibiotics are overused for the ED treatment of simple toothache in children
- Descriptive statistics (frequency tables, confidence intervals) were used to summarize the data.

RESULTS

- A total of 7114 ED patients were initially screened; 683 (9.6%) were pediatric patients (1 to 19 years)
- The average age 11.6 ± 5.8 years; 56.3% were female
- The 17- through 19-year age group had the highest rate of dental-related ED visits (33.1%)
- A higher proportion of Medicaid beneficiaries (66.6%) had dental visits compared with the commercially insured (26.9%) or uninsured (6.5%).
- The most common diagnoses were nonspecific odontalgia (55.4%) or dental caries (33.7%).
- The mean duration of dental pain was 41.0 ± 55.3 hours.
- An antibiotic, most often amoxicillin or penicillin, was prescribed in 60.7% (95% CI 57.0% to 64.4%) of ED visits.
- Additional antibiotics prescribed included amoxicillin clavulanate, clindamycin, and cephalexin
- Opioids, most often hydrocodone, were prescribed in 18.7% (95% CI 15.9% to 21.9%).
- Nonsteroidal anti-inflammatory (NSAID) drugs were seldom used.
- Parenteral narcotics were given to 8 patients (1.2%)
- Dental nerve blocks were performed in 33 patients (4.8%)
- Topical anesthetic gel was given to 58 children (8.5%)
- Average LOS in ED = $1.2h \pm 1.1$ hours
- Twelve percent of patients (82/683) returned within 7 days requesting further analgesia.

CONCLUSIONS

- Surprisingly few studies of dental problems in the ED have been done considering that the ED is a well-known safety net for children with a simple toothache and have no direct access to dental care.
- Medicaid patients and the uninsured rely disproportionately on emergency departments (EDs) as a primary source of dental care.
- Toothache visits are usually classified as nonurgent, potentially contributing to ED inefficiency.
- After a brief evaluation, most individuals are given an antibiotic and an analgesic and told to find a dentist.
- The therapeutic mainstay for these patients is usually dental procedures; antibiotics and narcotics appear to be over-prescribed.
- Data-driven solutions, such as guideline implementation, provider education, use of nonsteroidal anti-inflammatory drugs, and dental nerve blocks could reduce medication-related harms and avert health care expenditures

