

RESEARCH SUMMARY

Antibiotic prescribing for children awaiting dental general anaesthetic

An investigation of therapeutic antibiotic prescribing for children referred for dental general anaesthesia in three community national health service trusts

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Objective

To investigate antibiotic prescribing for paediatric dental patients requiring general anaesthesia.

Design

A prospective clinical study of children referred for dental treatment under general anaesthesia.

Method

Information was collected by way of a two-stage questionnaire for children attending three community NHS trusts for dental extractions under general anaesthesia between July 2001 and January 2003.

Results

A total of 360 questionnaires were analysed. There was wide variation in the waiting times (0–278 days) between referral and treatment under general anaesthesia. Most children (53%) attended with dento-alveolar abscess, 46% with caries only and 1% for orthodontic extractions. Antibiotics were prescribed to 52% of patients with an abscess and 32% with caries only. Only 16% of patients presented with moderate to severe pain, 5.5% with diffuse swelling and 12% with a raised temperature. Antibiotics were prescribed for patients with diffuse swelling (63%) and raised temperature (50%) but also for patients with pain only (39%) and localised swelling (52%). Amoxicillin was the most frequently prescribed antibiotic (82%), with wide variation in all antibiotic regimens.

Conclusion

This study provides evidence of inappropriate prescribing of antibiotics to children referred for treatment under general anaesthesia with wide variations in the regimens employed. There was no conclusive evidence that long waiting times for definitive treatment influenced antibiotic prescribing. In some areas the delay for definitive treatment for this group of vulnerable patients was unacceptably long.

IN BRIEF

- This paper presents a timely and relevant account of the characteristics of children attending assessment for dental extractions under general anaesthesia.
- Whilst most children are diagnosed with infection or caries, few present with clinical symptoms that would justify antibiotics.
- With evidence of inappropriate prescribing this paper is a useful reminder of the criteria for using antibiotics.
- Wide deviation from recommended antibiotic regimens underlines the need for guidance on the management of acute dento-alveolar infections in children.
- Variation in waiting times between referral, assessment and treatment under general anaesthesia raises concerns about service provision meeting local demand.

COMMENT

The aims of this study were to investigate the appropriateness of antibiotics prescribed for paediatric dental emergency patients requiring general anaesthesia, and the current antibiotic regimens being used.

The study was prospective and investigated children referred to community dental clinics for dental extractions under general anaesthesia. Data were collected from the referral letters, the history given by parents and from the clinical examination. Even allowing for the problems of collecting data in this way, the investigation provides evidence of inappropriate prescribing of antibiotics to children referred for treatment under general anaesthesia, with much variation in regimens employed.

The authors identified that dentists were prescribing antibiotics in the absence of infection, suggesting that pain was a significant factor in prompting antibiotic prescribing. Indeed it is reported that antibiotics were prescribed for 32% of children who had caries only. Meanwhile in children for whom antibiotics were indicated, such as diffuse swelling or raised temperatures, some dentists appeared to be reluctant to prescribe antibiotics.

The most commonly prescribed antibiotic was amoxicillin (82%), followed by penicillin (13%), erythromycin (3%) and metronidazole (2%). When amoxicillin was prescribed it was usually given for longer than the 2–3 days recommended for this antibiotic. The authors feel that more guidance is needed on the management of acute dentoalveolar infection in children. This would definitely appear to be true.

There was widespread use of amoxicillin, despite the advice given in the Dental Practitioners Formulary 2002–2004. This states that 'Phenoxymethylpenicillin is still the drug of first choice for most dental infections, but it is ineffective against beta-lactamase-producing bacteria. In the case of a more severe dental infection the dose of phenoxymethylpenicillin may be increased...' However the authors found that in some instances the doses of penicillin were too low for the age of the patient.

The authors comment that in this study, 39% of all patients presenting with pain only were prescribed antibiotics thus there is a need to educate practitioners on the use of analgesics to manage pain. There is also strong evidence of a need for practitioners to be educated on the indications and contra-indications for the use of antibiotics in children.

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