


Sedation versus general anaesthesia for provision of dental treatment to patients younger than 18 years

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This is a summary of a Cochrane Review. The full citation and the names of the researchers who conducted the review are listed in the reference section below.



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Background

A significant proportion of children in developed nations still have dentine caries. The Child Dental Health Survey (2013) reported that 28% of five-year olds and 39% of eight-year olds in England, Wales and Northern Ireland had untreated decay into dentine in primary teeth, with similar patterns noted in other industrialised countries. This is a significant cause for concern as untreated dentine caries may lead to acute pain and sepsis, which is clinically managed by substantial restoration or extraction of the affected teeth.

Treatment of dentine caries is usually considered under local anaesthetic. However, for some children this is not a suitable approach due to barriers to treatment, such as dental fear or behavioural management issues. Dental fear or anxiety is associated with increased levels of caries (Julián et al 2006), and thus to meet the needs of children who are affected by these treatment barriers, alternative management approaches are required. Many children find the challenge too great and are unable to tolerate dental treatment regardless of non-pharmacological behavioural strategies. In these situations, sedation or general anaesthesia (GA) could be considered as an alternative to decrease dental fear and anxiety and facilitate dental clinical treatment.

Internationally, the use of sedation or GA to manage behaviour and enable dental treatment is widely used. However, it is unclear which method is more beneficial

for the patient as both have associated risks of mortality (albeit small) and postoperative morbidity (Atan et al 2004, Chicka et al 2012). Furthermore, both methods require additional resources such as medication, equipment and staff, which leads to additional costs for the service provider and the patient.

Objectives

The objectives of this updated Cochrane systematic review were to evaluate the morbidity and effectiveness of sedation versus GA for provision of dental treatment to patients younger than 18 years. Secondly, the authors aimed to analyse the cost-effectiveness of different interventions; however, if data is unavailable a crude estimate of cost will be obtained. The primary outcomes included mortality, completion of treatment and postoperative morbidity. Secondary outcomes included cost to participant, cost of the procedure, participant satisfaction, parental satisfaction and intraoperative morbidity.

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Intervention/methods

In this updated review (Ashley et al 2015), the authors searched for randomised controlled trials (RCTs) that compared the administration of sedative agents versus GA (control group). The intervention and control were administered via any route by an anaesthetist, a dentist or another healthcare professional in any setting. The participants included were children and adolescents up to 18 years undergoing dental treatment including fillings, removal of the nerve from a tooth and tooth extraction. Children and adolescents who required complex surgical procedures such as the removal of bone and pseudo-randomised trials were excluded from this review. The reviewers searched seven electronic databases, trial registries and grey literature for relevant trials, up to July 2015. Papers were considered for this review irrespective of language, date and publication status.

Results

Sixteen full text papers were assessed for eligibility in the original systematic review (Ashley et al 2009) and two studies were identified in this updated search. No studies met the inclusion criteria for this review.

Conclusions

The authors identified (but excluded) a limited number of case control studies that investigated any form of sedation versus GA. Findings from these case control studies propose that a singular episode of dental care under sedation may be more cost effective than a similar treatment under a GA. However, there is no clear evidence to indicate if a similar treatment under a GA can be provided under sedation. Dental treatment completion under sedation may require several visits and this is not the situation for treatment delivered under a GA. Furthermore, in some situations administration of sedation may be ineffective and thus

the patient will require a GA. However, these results require consideration with caution due to the less rigorous research designs employed.

Implications for Practice

This review highlights that carefully designed and well-monitored RCTs are required to compare sedation versus GA for provision of dental treatment in patients younger than 18 years. To date, no studies have been conducted and therefore clinicians in this area of practice should support further research.

No competing interests declared

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