COCHRANE-REVIEW

Undersøgelser af sedering til børn efterlyses

Et opdateret review har evalueret effekten af forskellige metoder til og administrering af sedering til børn i tandbehandling.

Winnie Brodam

Der er svag evidens (fra fem mindre, kliniske heterogene studier med høj risiko for bias) for, at brug af midazolam i doser imellem 0,25 mg/kg og 0,75 mg/kg kan gavne "samarbejdet", når det gælder børn og unge op til 16 år. Til gengæld er der kun meget svag evidens (fra to studier) for, at lattergas er mere effektivt end placebo. Sådan konkluderer en helt ny opdatering af et tidligere Cochrane-review.

36 studier er inkluderet i reviewet, men desværre er 30 af dem med stor risiko for bias, og seks af dem med uklar risiko for samme. Studierne undersøger til sammen 28 forskellige sedativer – med eller uden medvirkende lattergas.

Kommentar af afdelingstandlæge Gro Haukali, Tandlægeskolen i Aarhus, og Tandplejen Aarhus:
Det konkluderes i dette Cochrane-review, at der var store forskelle i anvendte præparater og metoder, afhængigt af hvilke lande studierne var udført i. Der tegner sig et billede af to grupper: en "nordamerikansk" sedationsmodel og en mere "europæisk" model.

Karakteristisk for den nordamerikanske model er anvendelsen af flere sedativa (inklusive supplerende N_2O/O_2) på alle alderstrin, anvendelse af tvang og en tendens til at anvende dybere sedation. Den europæiske model karakteriseres ved anvendelse af et enkelt sedativ, typisk N_2O/O_2 eller midazolam og tilsigter en let sedation.

Medvirkende til denne gruppering er både kulturelle og lovmæssige forskelle. Dette igen danner grundlag for forskelle mellem de enkelte nationers guidelines.

I Danmark har midazolam været anvendt i behandlingen af det angste barn og/eller børn med "behaviour management problems" de sidste ca.15 år. Anvendt oral dosis er 0,5 mg/kg med et maksimum på 12,5 mg. Midazolam anvendes både med og uden supplerende N_2O/O_2.

Fra en opgørelse af sederingsbehandlinger foretaget i Aarhus fra 1999 til 2005 på 233 børn konkluderes: Oral sedering har vist sig at være en effektiv, sikker og acceptabel metode, som er meget anvendelig, når andre sederingstiltag ikke er tilstrækkelige. Bivirkningerne er få, og der er stor forældretilfredshed.

I Cochrane-reviewet indgik kun to studier, hvor N_2O/O_2 blev målt mod placebo. Begge forsøg viste svag positiv effekt på angst og "behaviour management problems". Der er et stort behov for flere randomiserede og placebokontrollerede kliniske undersøgelser på effekten af de forskellige former for sedering.

ABSTRACT

Background

Children's fear about dental treatment may lead to behaviour management problems for the dentist, which can be a barrier to the successful dental treatment of children. Sedation can be used to relieve anxiety and manage behaviour in children undergoing dental treatment. There is a need to determine from published research which agents, dosages and regimens are effective.

Objectives

To evaluate the efficacy and relative efficacy of conscious sedation agents and dosages for behaviour management in paediatric dentistry.

Search methods

Electronic searches of MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Dissertation Abstracts, SIGLE, the World Wide Web (Google) and the Community of Science Database were conducted for relevant trials and references up to 4th August 2011. Reference lists from relevant articles were scanned and the authors contacted to identify trials and obtain additional information. There were no language restrictions. Trials pre-1966 were not searched.

Selection criteria

Studies were selected if they met the following criteria: randomised controlled trials of conscious sedation comparing two or more drugs/techniques/placebo undertaken by the dentist or one of the dental team in children up to 16 years of age. Crossover trials were excluded.

Data collection and analysis

Information regarding methods, participants, interventions, outcome measures and results were independently extracted, in duplicate, by two review authors. Where information in trial reports was unclear or incomplete authors of trials were contacted. Trials were assessed for risk of bias. The Cochrane Collaboration statistical guidelines were followed.

Main results

Thirty-six studies were included with a total of 2810 participants. Thirty trials (83%) were at high risk of bias and six (17%) were at unclear risk of bias. There were 28 different sedatives used with or without inhalational nitrous oxide. Dosages, mode of administration and time of administration varied widely. Trials were grouped into placebo-controlled, dosage and head-to-head comparisons. Meta-analysis of the available data was possible for studies investigating oral midazolam vs placebo only. There is weak evidence from five small clinically heterogeneous trials at high risk of bias, that the use of oral midazolam in doses between 0.25 mg/kg to 0.75 mg/kg is associated with more co-operative behaviour compared to placebo; standardised mean difference (SMD) favoured midazolam (SMD 2.98, 95% confidence interval (CI) 1.58 to 4.37, $P < 0.001$, $I^2 = 91\%$), which translates to an increase of approximately 1.8 points on the six-point Houpt behaviour scale. There is very weak evidence from two trials which could not be pooled that inhalational nitrous oxide is more effective than placebo.

Authors' conclusions

There is some weak evidence that oral midazolam is an effective sedative agent for children undergoing dental treatment. There is very weak evidence that nitrous oxide inhalation may also be effective. There is a need for further well designed and well reported clinical trials to evaluate other potential sedation agents. Further recommendations for future research are described and it is suggested that future trials evaluate experimental regimens in comparison with oral midazolam or inhaled nitrous oxide.

Lourenço-Matharu L, Ashley PF, Furness S. Sedation of children undergoing dental treatment. Cochrane Database of Systematic Reviews 2012, Issue 3. Art. No.: CD003877. DOI: 10.1002/14651858.CD003877.pub4.