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[Intervention Review]

Non-pharmacological interventions for assisting the induction of anaesthesia in children

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ABSTRACT

Background

Induction of general anaesthesia can be distressing for children. Non-pharmacological methods for reducing anxiety and improving co-operation may avoid the adverse effects of preoperative sedation.

Objectives

To assess the effects of non-pharmacological interventions in assisting induction of anaesthesia in children by reducing their anxiety, distress or increasing their co-operation.

Search strategy

We searched CENTRAL (*The Cochrane Library* 2009, Issue 1). We searched the following databases from inception to 14th December 2008: MEDLINE, PsycINFO, CINAHL, DISSERTATION ABSTRACTS, Web of Science and EMBASE.

Selection criteria

We included randomized controlled trials of a non-pharmacological intervention implemented on the day of surgery or anaesthesia.

Data collection and analysis

Two authors independently extracted data and assessed risk of bias in trials.

Main results

We included 17 trials, all from developed countries, involving 1796 children, their parents or both. Eight trials assessed parental presence. None showed significant differences in anxiety or co-operation of children during induction, except for one where parental presence was significantly less effective than midazolam in reducing children's anxiety at induction. Six trials assessed interventions for children. Preparation with a computer package improved co-operation compared with parental presence (one trial). Children playing hand-held video games before induction were significantly less anxious than controls or premedicated children (one trial). Compared

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with controls, clown doctors reduced anxiety in children (modified Yale Preoperative Anxiety Scale (mYPAS): mean difference (MD) 30.75 95% CI 15.14 to 46.36; one trial). In children undergoing hypnosis, there was a nonsignificant trend towards reduced anxiety during induction (mYPAS < 24: risk ratio (RR) 0.59 95% CI 0.33 to 1.04 - 39% versus 68%: one trial) compared with midazolam. A low sensory environment improved children's co-operation at induction (RR 0.66, 95% CI 0.45 to 0.95; one trial) and no effect on children's anxiety was found for music therapy (one trial).

Parental interventions were assessed in three trials. Children of parents having acupuncture compared with parental sham-acupuncture were less anxious during induction (mYPAS MD 17, 95% CI 3.49 to 30.51) and more children were co-operative (RR 0.63, 95% CI 0.4 to 0.99). Parental anxiety was also significantly reduced in this trial. In two trials, a video viewed preoperatively did not show effects on child or parental outcomes.

Authors' conclusions

This review shows that the presence of parents during induction of general anaesthesia does not reduce their child's anxiety. Promising non-pharmacological interventions such as parental acupuncture; clown doctors; hypnotherapy; low sensory stimulation; and hand-held video games needs to be investigated further.

PLAIN LANGUAGE SUMMARY

Non-pharmacological interventions for assisting the induction of anaesthesia in children

The initial process of giving general anaesthesia (i.e. induction of anaesthesia) to children, can be distressing for them and also for their parents. Children can be given drugs to sedate them when anaesthesia is being induced, but these drugs can have unwanted harmful effects, such as possible airway obstruction and behaviour changes after the operation. Some non-drug alternatives have been tested to see if they could be used instead of sedative drugs when anaesthesia is being induced in children. The presence of parents at induction of the child's anaesthesia, has been the most commonly investigated (eight trials), but has not been shown to reduce anxiety or distress in children, or increase their co-operation during induction of anaesthesia. An intervention can be given to a child or to a parent. One study of acupuncture for parents found that the parent was less anxious, and the child was more co-operative, at induction of anaesthesia. Another study of giving parents information, in the form of pamphlets or videos, failed to show an effect. In single studies, clown doctors, a quiet environment, video games and computer packages (but not music therapy) each showed benefits such as improved co-operation in children. These promising interventions need to be tested in additional trials.