

Anaesthesia for the Uncooperative Child



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Objectives

- Understand the factors that predict peri-operative anxiety/distress
- Discuss the developmental differences of children and how this may alter induction of anaesthesia
- Non-pharmacological and pharmacological interventions
- Consideration of the child with special needs

Background

- An anxious or stressed child is often an uncooperative child
- Studies suggest of 1/3 children are distressed at induction of anaesthesia
- Dealing with an uncooperative child is distressing for all involved
- A stressful induction can produce negative post-operative changes in the child

What factors predict anxiety and distress in children?



Developmental differences

Infants <9 months

- Readily accept parental surrogate
- Less likely to experience anxiety when separated from parent
- Respond to soothing voices, gentle rocking and being held.

1 to 3 years

- Separation anxiety is common
- Can become distressed at induction as they do not understand proceedings
- Respond to presence of parent at induction and distraction.

3 to 6 years

- Start to have concerns about surgery/procedure
- This age group tend to take statements literally
- Respond to simple explanations and play therapy is particularly useful

Developmental differences (cont.)

7 to 12 years

- Need to feel in control
- Require more explanation of what is happening
- Play therapy can be useful
- Allow child to be involved (i.e let them hold the face mask)

Adolescents

- They may have better coping strategies but are still concerned about pain, awareness and losing control
- They may be unable to cope with explanations despite having an adult appearance.
- Involvement in the anaesthetic plan gives them a sense of control and reduces their anxiety.



Non-pharmacological Interventions

Play therapy

- Provided by trained play specialist
- It has to be timed correctly and tailored to the child's temperament
- Particularly useful for young children with previous negative anaesthetic experience

Staying in hospital

A guide for patients, parents and carers



Non-pharmacological Interventions (cont)

Other interventions

- Parental presence
- Tour of hospital and theatre environment
- Interactive books/leaflets to explain what will happen on day of surgery
- Music and lighting may be used to create a calming environment.

Pharmacological Interventions

Benzodiazepines

- Midazolam is a commonly used sedative pre-medication for paediatric patients
- It is used to provide anxiolysis at induction of anaesthesia and reduce post-operative behavioural disturbances
- Oral dose **0.5mg/kg**
- Sedative effects are seen with 5-10 minutes and effect wanes at 45 minutes - timing of dose is important
- Can administer via intranasal or sublingual route at dose of **0.2mg/kg**



Pharmacological Interventions

Fentanyl

- Usually administered as a lollipop
- Dose **15–20 mcg/kg** produces rapid onset sedation and has a peak effect at 20–40 min
- It has been shown to be as effective as midazolam but has unwanted side effects

Ketamine

- It has anxiolytic, analgesic and sedative properties
- Dose **5-8 mg/kg** po or **4-5 mg/kg** im produces sedation in 10–15 min and peaks at 20–25 min
- It has several side effects
- Children pre-medicated with ketamine require close observation

What about clonidine?

- Alpha 2-adrenoceptor agonist
- It provides anxiolysis, sedation and analgesia
- Dose **4 mcg/kg** and has slow onset of action and long duration of action, this can lead to prolonged sedation after surgery
- Insufficient evidence to support clonidine as a useful sedative pre-medication
- Clonidine reduces anaesthetic requirement and enhances post-operative analgesia
- Good evidence to support its use for improving the quality of recovery from anaesthesia

Autism Spectrum Disorder

DIAGNOSIS

40-80% ASD have
abnormal sensory
processing

Sensory
Processing

Communication



Visual > Verbal communication
Difficulty interpreting social
interaction

Behaviour

1. Need for routine
2. Stereotypic movements
3. Intense special interests

Strategies for the child with special needs

- Pre-operative assessment → individualised plan

Autism Hx: method of communication, triggers, past experiences, hx of aggression, medication, previous sedation experience

- Child should ideally be first on surgical list
- Sedative pre-med may be required
- Anaesthetic room should be a calm environment and parent/carer should be present
- Physical restraint may be usual for some children – if required then parent/carer should do this

Strategies for the child with special needs

- Pre-emptive management of pain and nausea to avoid distress and facilitate early discharge
- Parent/carer in recovery bay
- Cover up cannula and remove as soon as possible



Summary

- Anxiety and distress in children undergoing surgery is common
- It is important to appropriately manage anxiety in children as it can affect future hospital/surgery attendances, even in adulthood
- There are developmental differences that govern how to manage anxiety/distress in different age groups
- There are several non-pharmacological and pharmacological interventions that can be considered
- Children with special needs have their own unique challenges and an individualised care plan can be useful.

References

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