

Pre Theatre Sedative Premedication

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Background:

- Paediatric Anaesthesia remains the area in which the use of premedication is commonest.
- In general, most children at RACH can be made to feel comfortable with the journey to theatre and process of induction of anaesthesia, that they do not require premedication.
- There are however cohorts of children who will benefit from premedication prior to transfer to theatre for induction of anaesthesia.

All children coming for elective operations and procedures at the Alex are offered a preoperative assessment appointment with one of our pre-assessment nurses. This takes place the week before planned surgery on Level 7 surgical day care unit.

As well as offering familiarity of the surgical day care unit and an opportunity for the child/parent to ask questions, it gives an ideal opportunity for all children to be assessed as to whether they require a pharmacological pre-medication.

Most children do not require this and can manage with careful preparation by families/carers and healthcare workers in combination with distraction techniques.

Groups of Children that may require premedication:

- Children with special educational or behavioural needs e.g. Autism, Aspergers, Down's syndrome
- Children having major surgery
- Children having repeated procedures
- Children who have had a previous bad experience of the hospital environment

The advantages of a pre-med are that it can reduce both patient and carer anxiety therefore improving the overall experience, it can provide amnesia and may reduce behavioural changes post operatively (need reference).

The advantages must outweigh possible disadvantages that would include worsening anxiety associated with administration of the medication, paradoxical reactions that can be seen e.g. midazolam and the potentiation of sedative side effects of drugs such as opioids.

Contraindications to sedative premedication:

- Anticipated difficult airway
- Increased aspiration risk
- Obstructive sleep apnoea
- Raised intracranial pressure
- Previous allergic or behavioural reaction to the premedication proposed

Commonly used drugs for premedication:

DRUG	ROUTE	DOSE	ONSET	NOTES	EFFECTS
Midazolam CD	Oral / Enteral	All ages: 0.5mg/kg (max. 20mg) , given 30 to 60 minutes prior to procedure	30 mins	Available as oral solution or Injection solution can be given orally but is bitter	Sedation, anxiolysis, anterograde amnesia. Can cause a paradoxical reaction in some children
	Buccal	3 mths-1 year: 2.5mg 1-5 years: 5mg 5-10 years: 7.5mg 10-18 years: 10mg	10-15 mins	Pre-filled syringes available on Level 7	
Temazepam CD	Oral / Enteral	12 to 18 years: 10-30mg , given 1 hour prior to procedure	45-60 mins	Available as Liquid or oral tablets	
Ketamine CD	Oral / Enteral	All ages: 5-10mg/kg	10-20 mins	Ketamine injection should be given orally and may be bitter to taste.	Sedation and analgesia
Ketamine with Midazolam CD	Oral / Enteral	All ages: Ketamine: 3 - 5mg/kg Midazolam: 0.5mg/kg	20-30 mins		Ketamine can cause increased salivation, nystagmus and a dissociative state
Ketamine CD	Intra-Muscular (IM)	All ages: 5mg/kg	3-5 mins	With monitoring and sufficient staffing	<i>Particularly useful in older autistic children</i>
Clonidine	Oral / Enteral	All ages: 4micrograms/kg	45-60 mins	Available as	Bradycardia, Hypotension (in large doses)

CD = Controlled drug, record of all administrations MUST be documented in the ward CD register.

Notes:

- Administration of sedative premedication must be done with the availability of monitoring and resuscitation equipment in the event of respiratory depression.
- The oral preparations may be added to a small volume of flavoured squash to help with any unpleasant taste, i.e. dilute with an equal volume of squash.
- It has been documented that clonidine can be used successfully early as a pre-medication in children with significant behavioural needs as it is tolerated well orally and has no bitter taste. It may then be necessary or possible for an additional pre-medication to be given to facilitate induction of anaesthesia (this must be done in discussion with anaesthetist/carers and requires considerable planning)
- IM ketamine can be used as a planned technique, but should be discussed with family/carers and staff in advance. It requires 3-5 minutes to work and will need the presence of sufficient staff and appropriate monitoring.

- Remember that once a sedative pre-medication is given, the child will not be able to travel to theatre on a quad bike/car. It is important that the parent/child are aware of this in order to prevent disappointment
- Most children are identified as requiring a pre-medication in the pre-assessment clinic. However, occasionally a child's anxiety is underestimated, meaning that there continue to be a number of 'refusals' each month. During pre-assessment always ask the question "would this child benefit from a pre-med" when admitting them for theatre.
- Please do not hesitate to flag up "at risk" children to the anaesthetist in charge of the list.
- If you are doing pre-assessment and there is a child with particular behavioural needs, please contact the anaesthetist involved and play therapy department in order to put together a plan that avoids delays, reduces anxiety for the patient and family and improves the patient experience.

References and Resources:

1. Sedative Premedication Guidelines Royal Children's Hospital, Melbourne (website)
2. J. Short, A. Calder Anaesthesia for children with special needs, including autistic spectrum disorder. Continuing Education in Anaesthesia, Critical Care and Pain Jan 2013
3. W. Funk, W. Jakob, T. Riedl, K.Taeger Oral preanaesthetic medication for children:double blind randomised study of a combination of midazolam and ketamine vs midazolam or ketamine alone BJA 84(3): 335-40 (2000)
4. N. Almenrader, M.Passariello, B.Coccetti et al Premedication in children: a comparison of oral midazolam and oral clonidine Pediatric Anesthesia 2007 17:1143-1149