

# Upper Respiratory Tract Infection in The Child-

Current Opinion Anaes 2017

**Defn of current URTI:** rhinorrhoea, sore or scratchy throat, sneezing, nasal congestion, malaise, cough, or fever more than 38.8C

**Recent URTI:** within 2 weeks

**Frequency:** in under 4 yr old- up to 8 per yr!

**Aetiology:** Rhinovirus the most common. RSV accepted as having greater anaesthetic risk

**Pathophysiology:** Some viral infections release-

- Neuraminidase → inhib M2 receptors and increase Ach release
- Tachykinins
- Neuropeptides

Current and recent URTI have risk of

**PRAE** (Peri-operative respiratory adverse events):-

- Bronchospasm
- Laryngospasm
- Desaturations
- Breath holding

→ 30% risk if URTI as compared to 8% if no URTI

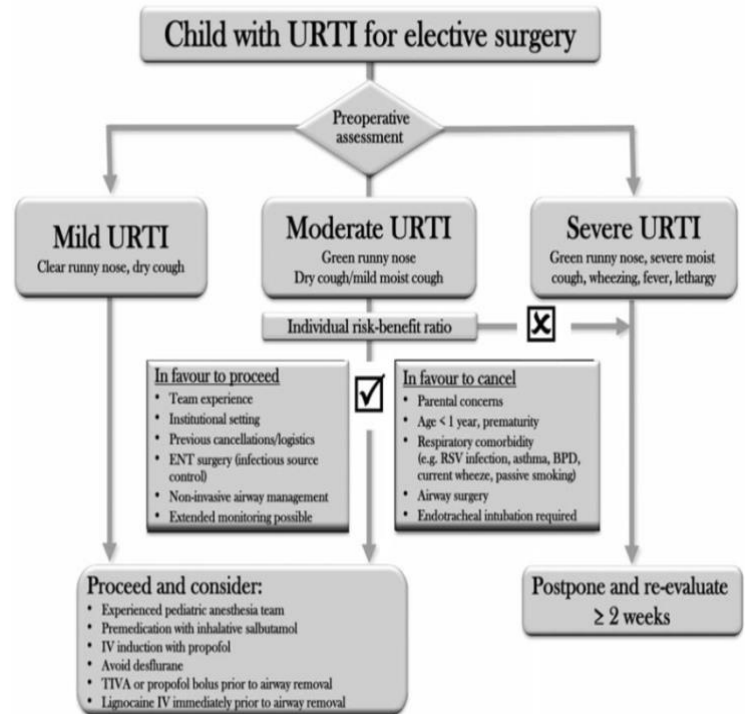
**Risk factors for PRAE in URTI child:**

**Table 1.** Risk factors for the occurrence of perioperative respiratory adverse event in children with upper respiratory tract infection

|                        |   |
|------------------------|---|
| Patient                | Copious secretions/presence of sputum<br>nasal congestion<br>Paternal smoking/passive smoking<br>History of reactive airway disease,<br>younger age<br>Prematurity (<37 weeks)<br>Parental belief, 'the child has is sick/a cold' |
| Surgery                | Surgery of the airways<br>Ear nose throat surgery<br>Eye surgery<br>Upper abdominal surgery<br>Cardiac surgery  |
| Anaesthetic management | Invasive airway (endotracheal intubation)<br><br>Anaesthetic agents (desflurane)<br>Experience and competence of the anaesthesiologist in paediatric anaesthesia  |

Adapted with permission [4-8,12].

## Recommended Guideline for Deciding Whether to Proceed/ Delay



## Summary of EBM Recommendations for your Anaesthetic Plan

| Recommended                               | Not Recommended                       |
|---|---------------------------------------|
| Premed: Alpha agonists                    | Benzos                                |
| IV Lignocaine                             | Topical ligno to cords                |
| Pre-op salbutamol Neb                     |                                       |
| BMV > LMA > uncuffed ETT > cuffed ETT     |                                       |
| Experienced anaesthetist                  |                                       |
| Propofol- less laryngo                    |                                       |
| Volatiles- bronchodilate                  | Volatiles for laryngospasm management |
| Sevoflurane                               | Desflurane                            |
| IV induction- for high risk PRAE patients |                                       |

See below for the un-abbreviated table of recommendations (you better ZoOm!)

**Table 2.** Evidence based perioperative management of children with upper respiratory tract infection

|   |
|---|
| <b>Premedication</b>  |
| Avoid use of benzodiazepines for premedication [7,17]   |
| Use of dantrolene if premedication is required [22]   |
| <b>Lignocaine</b>   |
| Consider i.v. lignocaine to suppress laryngospasm in high-risk patients/high-risk procedure [2,9]   |
| Avoid topical lignocaine to vocal cords [24]  |
| Lignocaine gel on LMA may be beneficial to reduce postoperative coughing [25]   |
| <b>Bronchodilators</b>  |
| We recommend preoperative salbutamol (inhaled 10-30 min prior induction, 2.5mg if weight <20kg, 5mg if weight >20kg) in children with current and recent (<2 weeks) URTI [18] |
| <b>Airway management</b>  |
| We recommend the least invasive airway device (face mask over LMA over ETT) [2,5,7,8,12,26-29]  |
| When using ETT we recommend where possible the use of uncuffed over cuffed ETT tubes [7]  |
| Deep removal of LMA and ETT might reduce laryngospasm and PRAE but is associated with increased airway obstructions [7,28-30]   |
| We recommend airway control to be done by an experienced anaesthetist in children with URTI at increased risk of PRAE [7]   |
| <b>Anaesthetic agents</b>   |
| Propofol has good airway reflex laryngospasm and bronchospasm blunting properties but only mild bronchodilator effect [22,31]   |
| Volatile anaesthetic agents have good bronchodilator properties but limited effect in suppressing airway reflexes [22]  |
| We recommend the use of volatile anaesthetic agents to treat severe intraoperative bronchospasm   |
| We do not recommend the use of volatile anaesthetic agents to treat severe laryngospasm   |
| When using volatile anaesthetic agents sevoflurane is to be preferred over other volatile anaesthetic agents [5,7,22]   |
| Desflurane should be avoided [7,22,32]  |
| <b>i.v. vs. inhalational induction</b>  |
| In high-risk children we recommend i.v. induction with propofol over inhalational induction [8,21,33,34]  |