

# Postoperative pain

## Home Sweet Home

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# Postoperative care with children

## Overview of the presentation

- Pain management recommendations
- Why is it so difficult?
  - Parental factors
  - Child factors
  - Medication factors
  - System factors
- Analgesic choice
  - WHO strategy
  - Opioid choice
  - NSAID
- Conclusion

# Postoperative pain management for children

## Recommendations

- Difficult as many different procedures
  - Has to be planned BEFORE the procedure
  - Every providers of postoperative care should understand the general principles of good pain management in children
  - This includes knowledge of assessment techniques and the use of analgesics at different developmental ages.
  - Paediatric anaesthetists are responsible for initiating postoperative analgesia
    - Appropriate to
      - the age of the child
      - the surgical procedure
      - the clinical setting
    - Sufficiently potent
    - Low incidence of side effects
  - Combinations of analgesics and non pharmacological techniques should be used
- 

# Postoperative pain at home

Why is it poorly managed at home?

## **Study: tonsillectomy 1,5 - 5 years**

- Is a child's behaviour a predictor for postoperative pain?
- Preoperative questionnaire
- 3 Observations
- **Telephone call on day 1 - day 3 - day 8**


# A lot of information

## Before discharge

- Pain nurse gives **oral** information
- Doctor gives **oral** information
- Brochure with **written** information about pain medication
- Nurse dismissal form with **written (+ oral)** information about when to take the medication

## Is this enough?

Parents do it their own way at home... with the same mistakes...

**Day 1** “My child doesn’t has pain,  
 so I stopped the medication,  
but he doesn’t want to eat.”

Why? Why? Why? Why? Why?

# Why is pain poorly managed at home?

- **Inadequate administration**

- Parental factors
- Child factors

- **Inadequate prescription**


- Medication factors
- System factors

*Dorkham MC, et al. Paediatr Anaesth 2014*

# Parental factors (1)

## Lack of analgesia administration

- Up to 60% had fewer analgesics than prescribed for 3 days
- Although 67% experiencing significant pain on postoperative day 3  
41% received one or no medication
- Median number of analgesic dose provided on day 1 was one, and 26% of parents provided no analgesics
- Strength of doses: only 10% received a therapeutic dose



**Fear of side effects?  
Ignorance?**



## Parental factors (2)

### Attitudes and misconceptions regarding pain & use of analgesics

- Cultural factors
- Personality characteristics
- Sociodemographic factors - education

**Pain medication  
on a regular basis!**



#### **Misconceptions**

- ex. Pain is normal after an operation...
- ex. Only treat severe pain.
- ex. Use of pain medication has to be avoided.

# Child factors

## Refusal to take the medication

- ❑ Bad taste
- ❑ Painful swallowing
- ❑ Nausea
- ❑ Waking up at night

Pain medication  
on a regular basis!  
**Including at night!**



Few parents will wake-up their child to give pain medication...

# Medication factors

- ❑ Analgesia may be inadequate (strength)
- ❑ Inappropriate (type/class)
- ❑ Painful to swallow
- ❑ Poor palatability
- ❑ Adverse effects

**Stimulate the use of oral medication.  
Don't use suppo's!!**

**Combine paracetamol + NSAID!**

# System factors

- ❑ Lack of adequate discharge information
- ❑ Poor communication from health professionals
- ❑ Access to analgesics, attention for
  - ❑ late discharge
  - ❑ discharge before a weekend

# Goede pijnstilling thuis

## drie vuistregels

## **Paracetamol (bv. Perdolan<sup>®</sup>, Dafalgan<sup>®</sup>) is de basispijnstiller (eerste keuze).**

- Gebruik een NSAID (bv. Nurofen<sup>®</sup>) enkel als de pijn onvoldoende onder controle is bij gebruik van paracetamol.
- Paracetamol en NSAID's werken op een andere manier en mogen dus gecombineerd worden bij erge, hardnekkige pijn. Respecteer steeds het tijdsinterval tussen twee toedieningen.
- Zorg ervoor dat je kind goed blijft drinken bij gebruik van een NSAID.

## **Geef de voorkeur aan orale pijnstilling (bv. siroop).**

- Gebruik suppo's enkel als orale pijnstilling niet mogelijk is, bv. bij braken.

## **Geef pijnmedicatie op vaste tijdstippen, zoals voorgeschreven.**

- Op deze manier voorkom je dat je kind pijn krijgt!

# Analgesic choice

- The World Health Organization has revised the analgesic ladder for paediatrics in 2012.
- In these guidelines, they recommend a **two-step strategy**

FIGURE 1. WHO Analgesic Ladder for Pediatric Pain, 2012.



WHO guidelines on the pharmacological treatment of persisting pain in children with medical illnesses.; 2012:1–172.

# No tramadol? No codeine?

- Three-step ladder dates from 1986
- No critical reviews at that moment
- Weak-acting opioids and variability of metabolism
- Morbidity and mortality cases

Kelly LE, Rieder M, van den Anker J, et al. More codeine fatalities after tonsillectomy in North American children. *Pediatrics*. 2012;129(5):e1343–7

- But... alternatif if NSAID are contra-indicated, or if PCM-NSAID is not enough?



# Is it possible to go home with first-line analgesia?

## Preemptive Analgesia with Paracetamol and Tramadol in Pediatric Adenotonsillectomy

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### Abstract

**Introduction:** Pain is a major problem regarding quality of life in children undergoing adenotonsillectomy. Preemptive analgesia is based on administration of an analgesic before a painful stimulus is generated. In this study we compared preemptive efficacy of paracetamol and tramadol in children undergoing adenotonsillectomy.

**Materials and methods:** The study was done between January-May 2009 in ETN operation room. 50 pediatric patients between the ages of 4-12, ASA I-II, were randomly divided into two groups. All patients were premedicated with  $0.5 \text{ mg}^{-1} \text{ kg}^{-1}$  midazolam (PO, 30 minute before induction). Anesthesia induction and maintenance were standardized. At induction, in group P the patients received  $15 \text{ mg}^{-1} \text{ kg}^{-1}$  paracetamol (infusion in 10 min), in group T the patients received  $1 \text{ mg}^{-1} \text{ kg}^{-1}$  tramadol (with 50 mL saline infusion in 10 min). Systolic and diastolic blood pressure (SBP, DBP), heart rate (HR) were obtained during anesthesia. Postoperatively, Aldrete score (time to reach > 9), FLACC (faces, legs, activity, cry, consolability) scores at 0<sup>th</sup>, 15<sup>th</sup>, 30<sup>th</sup>, 45<sup>th</sup>, 60<sup>th</sup>, 120<sup>th</sup>, 180<sup>th</sup>, 240<sup>th</sup> minutes and postoperative analgesic requirements were also recorded.

**Results:** No significant differences between groups over all the recorded times of FLACC score. No postoperative analgesic was needed in groups P and T. No significant differences between groups of the mean arterial pressure, heart rate and side effects.

**Conclusion:** Paracetamol and tramadol were found to be efficient preemptive analgesics in adenotonsillectomy of children for postoperative analgesia.

# What about the parents?

## Pediatric Anesthesia

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### ORIGINAL ARTICLE

## Postoperative pain management in Latino families: parent beliefs about analgesics predict analgesic doses provided to children

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### What is already known

- Current postoperative pain literature suggests that Latino parents hold more misconceptions on children's pain and higher levels of avoidance of analgesics and fear of side effects compared to non-Latino White parents.

### What this article adds

- This study found that parents' perceptions of analgesics for children *impact* home-based analgesic administration in a sample of Latino families of low socioeconomic status.

# What about NSAID an haemorrhage?



**Cochrane  
Library**

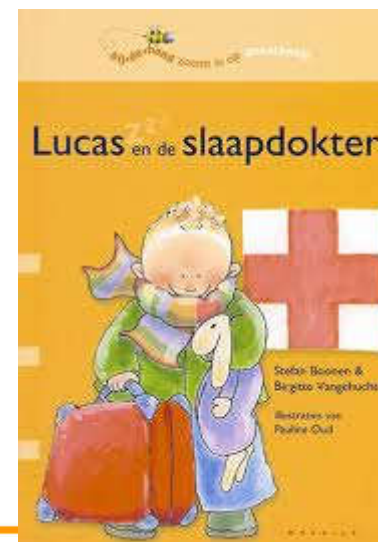
Cochrane Database of Systematic Reviews

## **Nonsteroidal anti-inflammatory drugs and perioperative bleeding in paediatric tonsillectomy (Review)**

Lewis SR, Nicholson A, Cardwell ME, Siviter G, Smith AF

# Non pharmacological measures

- Child friendly environment
- Communication
  - Clear and honest
  - With parents and child
  - Before and after intervention
- Avoid stress
- Avoid discomfort



# Postoperative pain management for children at home

## Conclusion

- Has to be planned BEFORE the procedure
- Has to be planned WITH parents and child
- Adapted to age, procedure and setting
- Analgesics choice
  - Two-step strategy
  - Home if first step is sufficient
  - Combination of PCM and NSAID
  - Combination with non pharmacologic