

Pain Relief, Common Drugs & Everything Else

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Lidocaine Noradrenaline Isoflurane Morphine
Ropivacaine Platelets Pethidine
Dobutamine Propofol Normal Saline
Colloids Plasma Naloxone Vecuronium
Cephalosporins Ketamine Ringer Lactate
Bupivacaine Heparin Suxamethonium
Hydralazine Diazepam Ephedrine LMWH
Beta-blockers Nitrous oxide Thiopentone
Ampicillin Hydrocortisone Magnesium Meropenem
Oxygen Pancuronium Sevoflurane
Alfentanyl Penicillin Remifentanyl Atropine
Blood Paracetamol Insulin Adrenaline
Dopamine Halothane Fentanyl Atracurium
Midazolam Gentamycin
Dextrose Chloramphenicol Rocuronium NSAIDs



Pain Definition

An **unpleasant** sensory and emotional experience associated with actual or potential **tissue damage** or described in terms of such damage

Need for sedation?

Pain Effects

Behavioural and physiological responses designed to minimise the impact of any painful stimulus

Need for sedation?!?

Pain Consequences

Unpleasant + tissue damage → Behavioural + physiological responses

Pain relief/treatment improves recovery!

- Respiratory function
- Cardiovascular
- Metabolic / endocrine
- Mobilisation
- Nutrition, GI function
- Nursing
- Level of care
- Psychological
- Sympathetic / stress

Sedation?!?!?

Assessment

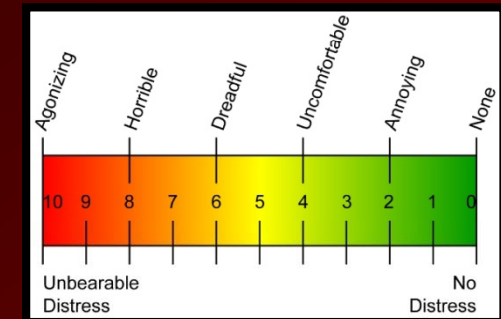
- All patients will respond differently
- No objective measurement

Visual Analogue Scale (VAS)

Verbal Numerical Rating Scale

Scales

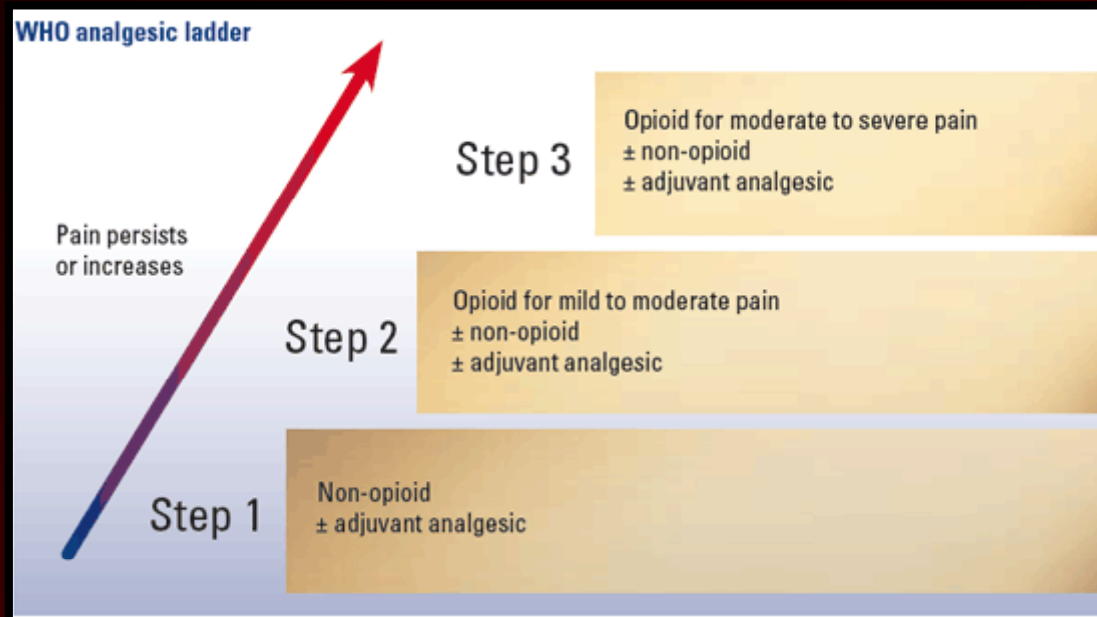
- 0 to 10
- 0 to 4
- 0, +, ++
- No pain, mild, moderate, severe



Document!

Treatment

WHO Analgesic Ladder



”Strong” opioids: morphine,
fentanyl, pethidine

”Weak” opioids: codeine,
tramadol

Paracetamol, NSAID

Administer by the clock, **not on demand!**

WHO 1:st Step

Paracetamol

- 1 g QED (po/pr/iv)

Hepatotoxicity!

NSAID

- Diclofenac 25-50 mg TDS (po/pr/im)
- Ibuprofen 200-400 mg TDS (po)

Astma!

Pregnancy (!)

Hemorrhage or GI ulcer!

Hypovolemia / kidney failure!

Not if uterine atonia!

WHO 2:nd Step

Codeine

- Prodrug; 5-10% converted to morphine
- 30 mg QDS (po)

Non-responders!

Tramadol

- 50 mg TDS (po/iv/im)

WHO 3:rd Step

No fixed dose!

Morphine

- 0.1 mg/kg po/sc/im/iv

Fentanyl

- 1 µg/kg (iv)

Pethidine

- 1 mg/kg (im/iv)

Minor respiratory depression if in pain!
No addictive potential if in pain!
Naloxone!

Evaluation

- Assess and re-assess!
- Document!
- Step up the ladder!
- Step down the ladder!

Warning: Surgical complications must always be suspected and ruled out!

Pain Relief in the critically ill (& per-/postoperative)

- **Surgical anaesthesia**

- Spinal / general anaesthesia
- Wound infiltration of local anaesthetic

- **1:st step of WHO ladder**

- Paracetamol po 1 g QDS x III
- Ibuprofen po 400 mg TDS x III

Careful!

- **2:nd or 3:rd step of WHO ladder if needed**

- Tramadol po/sc 50 mg TDS
- Morphine sc 5 mg 4 hourly & PRN

Sedation

- **Benzodiazepines**

 - Midazolam (0.05 mg/kg)

 - Diazepam (0.1 mg/kg)

- **(Opioids, α_2 , narcosis, muscle relaxants)**

- **Assess**

 - Re-assessment, step up/down

 - Part of ABCDE !

 - Local scoring system

Optimal sedation?

Other drugs

- O₂
- Salbutamol
- Anticoagulants / blood products
- Fluids / glucose
- Vasopressors / inotropy
- Prophylaxis: airway, nausea, gastric ulcer, GI
- Underlying disease
 - Antibiotics / antimalaria
 - Blood
 - Surgery
- Careful!
 - NSAID, Frusemide

E = Everything Else

- **Exposure / Environment**

Protect from hypothermia
Examine whole body

- **History**

- **Investigations**

X-ray, blood samples, cultures, lab, ...

- **Goal directed therapy**

Head to toe: N, R, C, K, I, GI, Coag
Teamwork!

- **Document**

Not documented – forgotten!

- **Re-assess**

ABCD...E

Observe – Document - React!

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What is safe?

What is evidence based?

When?

What dose?

Expected side effects?

Accepted side effects?

Summary

- **Pain definition and effect**

Actual or threatened tissue damage leading to an unpleasant feeling with behavioural and physiological **consequences**

- **Assessment**

- Pain score – documentation
- Optimal sedation?

- **Treatment**

- 1:st Paracetamol (+ NSAID)
- 2:nd "Weak" opioid; tramadol 50 mg TDS or codeine 30 mg QDS
- 3:rd "Strong opioid; morphine 5-10 mg sc QDS or 4 hourly and/or PRN

- **Evaluation**

Assessment, re-assessment, step up/down

- **Everything Else**

Preparation – mental, equipment

The End

