RESUSCITATION

PAIN MANAGEMENT

Pain is a debilitating addition to many medical conditions.

It can be defines as 'an unpleasant experience in response to a noxious stimulus', and it is possibly the most common presenting complaints to the ED.

Pain management is one of the Royal College of Emergency Medicine's priorities and they have set clinical standards accordingly:

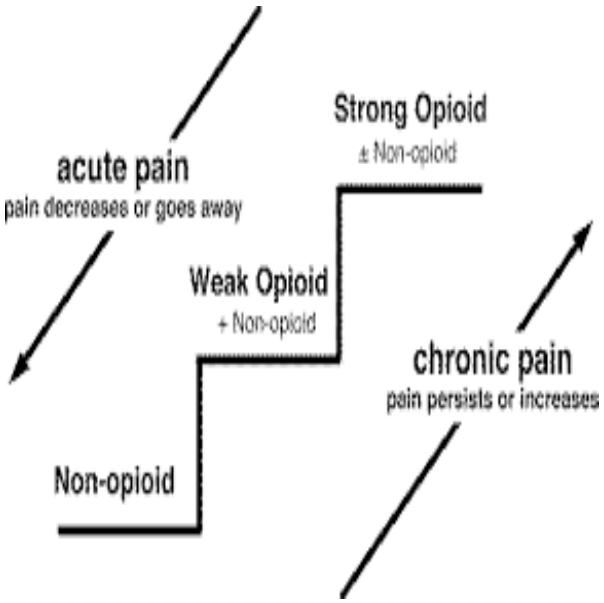
- Any patient in moderate or severe pain i.e. >4/10 should receive appropriate analgesia
  - 75% within 30mins of arrival
  - 100% within 60mins of arrival
- 90% of patients in moderate or severe pain should have documented evidence of re-evaluation and action within 120mins

WHO Pain Ladder

Originally created for cancer related pain control, but now widely used.

In general the principle is to start at the bottom with **non- opioids** e.g. paracetamol/ PO NSAID and **move up to weak opioids** e.g. codeine/ tramadol **and finally strong opioids** e.g. morphine/ diamorphine.

However in ED where pain tends to be much more acute, it may be worth working backwards taking into account the patient's level of pain.



Non-pharmacological techniques

Method	Effect
Splinting	Supports & prevents painful joint/ fracture movement
Elevation	Reduces swelling
Temperature	Cooling burns may prevent further tissue damage Ice- packs reduce swelling Warm compresses may relieve muscle spasms
Dressings	Pin due to minor burns may be significantly decreased by preventing airflow over exposed nerve endings
Definitive Tx	Early reduction reduces total analgesic requirements Pulled elbows may not need analgesia as treatment gives instant pain relief

Analgesic Equivalences

Analgesic	Strength (relative)	Equivalent dose (to 10mg of ORAL morphine)	Bioavailability	Half- life of active metabolites (hours)
Paracetamol*	1/360	3600mg	63- 89%	1-4 hours
Ibuprofen	1/222	2220mg	87- 100%	13.- 3
Codeine	1/10	180mg PO	≈90%	2.5- 3
Tramadol	1/10	>200mg	75- 90%	5.5- 7
Dihydrocodeine	1/5	50mg	20%	4
Morphine (PO)	1	10mg	≈25%	2-3
Morphine (IM/IV)	3	3.33mg	100%	2-3
Diamorphine	4- 5	2- 2.5mg	100%	<0.6
Fentanyl	50- 100	0.1mg (100mcg)	33%	0.4 (IV)

***Paracetamol has a synergistic effect with opiates so will reduce the amount of morphine required**

Adjuncts/ Alternatives

Entonox (Nitrous oxide)

- **Usually 50:50 mix with oxygen, administered by demand valve**
- **Few acute side- effects other than vomiting**
- **Onset <30seconds, offset <60seconds**
- **Safe with demand valve because if enough is inhaled to start to induce anaesthesia, the patient becomes to drowsy to hold the valve. Any apnoeic period will last <60 seconds, and Fi02 is 50% prevents hypoxia in this time.**
- **Contraindicated in pneumothorax or anyone who has been scuba diving in the past 24 hours**

Ketamine

- **Non-competitive NMDA receptor antagonist used as sedative and analgesic agent**
- **In low doses <0.5mg/kg it produces analgesic effects**
- **Should only be used by those with experienced in its use**

Contraindicated in Head trauma/ raised ICP, eclampsia/ pre- eclampsia, HTN, severe cardiac disease, stroke and acute porphyrias