



Peri-operative Pain Management in Chronic Pain Patients



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Archie Andrews – Chronic Pain



- 30 yr old fireman
- CRPS of right arm
- PTSD and depression
- Major open abdominal surgery
- NG tube postop +/- NBM

Preoperative Assessment and Plan

- Assessed in preop clinic
- Individualized pain management plan (IPT)
- Medication history noted and advised to continue till morning of Surgery
 - MST 180 mg two times a day (360mg/day)
 - Oromorph 10–20 mg PRN/ 4-6 hrly (40 mg/day)
 - Gabapentin 600 mg three times a day (1800mg/day)
 - Amitriptyline 50 mg at night
 - Fluoxetine 40 mg in the morning
 - Diazepam 10 mg three times a day
- HDU postoperatively

On the morning of Surgery

- NBM – thought he couldn't take his medication!!!!
- Sitting in the waiting area
- Surgery planned later in the day
- Anxious, sweaty, unable to sit, abusive, threatening to leave if not going to theatre ASAP
- Waiting area staff concerned, calling you



Anticipated problems

- Opioid induced Hyperalgesia
 - Pain sensitivity is increased
- Opioid tolerance
 - Opioid effectiveness is decreased
- Opioid and Sedative withdrawal, rebound
Depression and Anxiety

Anticipated problems

- Opioid induced Hyperalgesia
 - Pain sensitivity is increased
 - Multimodal analgesia
- Opioid tolerance
 - Opioid effectiveness is decreased
 - Increased opioid doses needed
- Opioid and Sedative withdrawal, rebound Depression and Anxiety
 - Continue baseline drugs (+/- parenteral alternatives)

Aims of Management

- **Provision of effective analgesia**
 - Increased opioid consumption – 2 to 3 times more
 - Higher rest and dynamic pain scores
 - Multimodal
 - Regular Paracetamol, NSAIDs
 - Pts usual opioids (oral and patches) + additional for acute episode (reg/oral/PCA)
 - Local anaesthetic techniques (wound infiltration, regional, perineural, infusion catheters)
 - Adjuvants!!

Aims of Management

- **Prevent withdrawal, Opioid Mx**
 - Continue the dose of usual opioid

Oral morphine equivalent (mg/24 hours)	10	15	30	45	60	90	120	180	270	360
Transdermal Buprenorphine (µg/hr)	5	10	20		35	52.5	70			
Transdermal Fentanyl (µg/hr)				12		25		50	75	100

- Additional opioid for acute pain
 - Higher dose of PCA
 - Increased PRN doses
- Opioid rotation
 - Tolerance to analgesic effects but not to side-effects

Aims of Management

- **Multidisciplinary team**
 - DALT, palliative care, psychology, GP
- **Step-down analgesia**
 - Convert last 24 hours consumption and 50% as SR + IR on PRN basis (max $1/6^{\text{th}}$ of calculated oral equivalent dose)

Anticipated problems

- Opioid induced Hyperalgesia
 - Pain sensitivity is increased
 - Multimodal analgesia
 - Ketamine, Magnesium
- Opioid tolerance
 - Opioid effectiveness is decreased
 - Increased opioid doses needed
 - Gabapentin, Pregabalin, Dexamethasone, Magnesium, Lignocaine infusion
- Opioid and Sedative withdrawal, rebound Depression and Anxiety
 - Continue baseline drugs (+/- parenteral alternatives)
 - Clonidine, Gabapentin, Pregabalin

Adjuvants

- **Gabapentinoids** - 1-2 hours preop, continue for 2 weeks
 - Gabapentin – 300 to 600mg
 - Pregabalin – 150 to 300mg
- **Ketamine**
 - Initial bolus at start of surgery 0.25 to 0.5 mg/kg;
 - 70 kg man – 17.5 to 35mg
 - Infusion 0.1mg/kg/hr for 24-72 hours (7mg/hr)
- **Magnesium**
 - Preferably prior to incision
 - iv bolus (30-50mg/kg) +/- infusion (8-15mg/kg/hr)
 - 70kg man – 2.1 to 3.5 g bolus (4 to 7ml of 50% Mg; 1-2ml/hr)
- **Dexamethasone**
 - Single i.v. perioperative dose (0.1-0.2mg/kg)

Adjuvants

- **Clonidine**

- 3 mcg/kg bolus +/- followed by 0.3 mcg/kg/hr infusion
- 70kg man – 70-210mcg bolus
- Infusion - 21mcg/hr

- **Dexmedetomidine**

- 0.5-2mcg/kg intravenously

- **Lignocaine**

- Bolus at start of surgery – 0.5mg/kg (slow);
- 70kg man – 35mg (3.5ml of 1% lignocaine)
- Infusion – 1mg/kg/hr (7ml/hr)

- **Perineural adjuvants**

- Adrenaline safe, Dexamethasone probably safe, Dexmedetomidine safety unsure, Clonidine – sedation, ↓BP, ↓HR

Archie Andrews – Chronic Pain



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Analgesic Management (Preop)

- Regular medication on the day of surgery
- Comfort talk – avoid nocebo
- Determine precise opioid use
 - Morphine has 30-50% bioavailability
 - 360mg MST + 40mg Oromorph
 - = 180 + 13mg intravenous morphine
- Antidepressants usually ok - long $t_{1/2}$
 - Possibly clonidine
- Large doses of benzodiazepines to be continued
 - 30 mg diazepam daily = S/L Lorazepam 2 mg tds



Conversion table for Opioids

<u>Medication</u>	<u>Oral/Patch Dose</u>
Morphine 10 mg i.v	= 30mg Oromorph = 20mg MST/ day
Codeine 240mg	= 30mg Morphine/day
Fentanyl 25µg/h patch	= 90mg Morphine/day
Buprenorphine 5µg/h patch	= 12mg Morphine/day
Tramadol 400mg	= 40-80mg morphine/day
Oxycodone 10 mg	= 20mg Morphine/day
Methadone 1mg	= 8mg (4-12) Morphine/day

To avoid withdrawal symptoms, small dose <50% is needed

Analgesic Management (Intraop)

- **Effective Analgesia**

- Paracetamol
- NSAIDS
- Thoracic epidural (Bupivacaine + Fentanyl) **OR**
Intravenous opioids + Rectus Sheath Catheter
- Adjuvants
 - Gabapentinoids (already on)
 - 8-12mg Dexamethasone (repeat)
 - Ketamine 30mg + infusion
 - Magnesium 40mk/kg + Intraop infusion



Analgesic Management (Postop) - HDU

Effective Analgesia and withdrawal prevention

If GI absorption good

- Continue thoracic epidural (B+F) + oral Opioids at same preop dose

OR

- PCA morphine 2mg/bolus +/- background infusion (1mg/hr) + rectus sheath catheter infusion + oral opioids
- Gabapentin and Benzodiazepines
- Restart antidepressants



Analgesic Management (Postop) - HDU

Effective Analgesia and withdrawal prevention

If GI absorption poor

- Continue thoracic epidural or PCA morphine + morphine background infusion (1-2mg/hr)

OR

- PCA morphine 2mg bolus +/- background infusion (1mg/hr) + Rectus Sheath catheter infusion
- S/L Lorazepam or iv midazolam



Discharge planning

- Use the opioid requirements (PCA or Oromorph) during the first 24 to 48 hours to determine daily oral opioid dose
- Deliver $\frac{1}{2}$ of estimated oral requirement as long-acting formulation (MST/Zomorph)
- PRN use of short-acting opioid (Oromorph) 2-3 hrly to provide the remaining opioid dose
- Plan tapering opioids post-operative doses toward pre-operative doses over 2-4 weeks



Archie's Dad – Chronic Leg Pain



- 60 year old
- Osteosarcoma of femur
- Chronic pain from left lower leg
- For complex lower limb surgery
- Psychologically robust but on large opioid doses preoperatively

Management Principles



- Similar to Archie Andrews
- Intraop – Lumbar epidural (B+F)
- What do you do with the large opioid doses in the postop period?



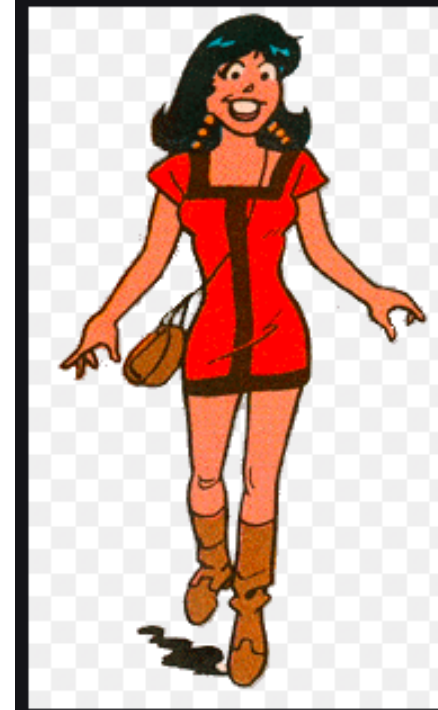
Methadone – Veronica Lodge



- 30 year old
- Methadone program
60mg/day by the addiction services
- Complex ankle fracture for urgent surgery

Information needed

- Reliability of the dose
- Current recreational drug use
- Infection status / Immunity
- ECG to rule out prolonged QTc



Management

- Continue methadone perioperatively
- Multimodal analgesia
 - 1mg of methadone = 4-12mg of morphine
 - Long half life; 20-60 hours
- If methadone paused, PCA morphine with background infusion
 - Methadone \leq 30mg/day
 - 0.5-1mg/hr
 - Methadone $>$ 30mg/day
 - 1-2mg/hr
- COWS scoring system for withdrawal
- Remember alcohol and other drug misuse

Buprenorphine – Betty Cooper

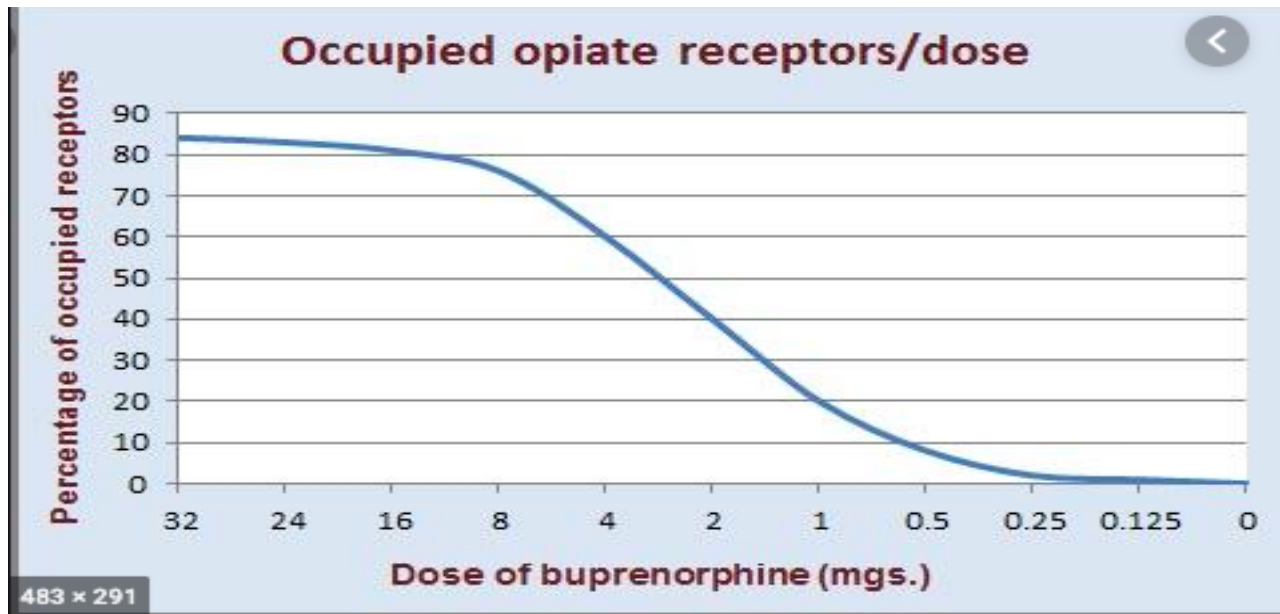


- 30 year old
- Buprenorphine 20mg/day by the addiction services
- Flap surgery for non healing wound

Buprenorphine

- Partial agonist at the mu receptor
- Strong receptor affinity with poor intrinsic activity
- At analgesic doses (200-400mcg) acts as a mu agonist for pain relief
- At doses >16mg used for substitution therapy, there is full receptor occupancy hence no free receptors (antagonistic)
- Half life 24-48 hours





- Given once a day SL for OST (opioid substitution therapy) and duration of analgesia is much shorter than the duration of suppression of withdrawal symptoms
- Recent evidence suggests continuing buprenorphine similar to other opioid tolerant patients
- Give in divided doses to prevent withdrawal
- Analgesic management similar

Conclusion

- Provide effective analgesia as they have increased opioid consumption
- Prevent withdrawal
- Use of adjuvants and multimodal techniques for pain management
- Not the time to start de-addiction
- Prevent poor experiences (Non judgemental)
- Individualised care for patient on opioid substitution therapy for elective surgery

