Postoperative Pain Management: Going For Gold

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Trudy Maunsell
Why Look at Pain?

- Every patient who comes through the door experiences pain at some stage during their hospital or day procedure centre stay.
- Marked adverse effects of unresolved pain.
- There’s a lot of it out there.
Acute Pain

- Pain which occurs as a result of injury or disease and which has a readily identifiable cause

- Acute pain has a protective or defensive function (Ready and Edwards 1992)

- Acute pain demands attention
Incidence of Acute Pain

- 30-35% of day surgery patients report moderate to severe pain. The incidence of severe pain following Day Surgery is reported as 5.3% in the first 24 hours post-operatively (NHMRC 2005:109).

- Incidence of severe pain following day surgery is most common in those undergoing orthopaedic procedures.

- Other surgical procedures commonly resulting in severe pain include open inguinal hernia repair, laparoscopy and plastic surgery (Pavlin et al 2002, Level IV).

- The best predictor of severe pain following discharge is inadequate analgesia in the first few hours post-operatively (Beauregard et al 1998 Level IV).
Incidence of acute pain (cont)

- As many as 87% of medical and surgical patients report moderate to severe pain.
- Many (42%) commented that they had to request analgesia and when they did ask, it didn’t arrive or was very slow coming (Moore et al 2003).
Adverse effects of acute pain

- Activation of the stress response (a systematic metabolic response which leads to physiological alterations in all major organ systems)
- Increased catabolic hormones (increased ACTH, cortisol, catecholamines, angiotensin II)
- Decreased anabolic hormones (decreased insulin)
- Hyperglycaemia
- Retention of water and sodium, increased ADH

(Macintyre and Ready 29001:4; NHMRC 2005:14-15; Dahl and Kehlet 2006:646)
Adverse effects of unresolved pain

- Increased oxygen consumption by the myocardium
- Tachycardia
- Increased risk of myocardial ischaemia
- Sputum retention, airway collapse, atelectasis, pneumonia
- Immobility
- Impaired physiotherapy
- Voiding difficulty
- Fear, anger, anxiety, resentment
- Chronicity
Chronic persistent pain

- Pain persisting a month longer than the “usual course of an acute disease or that is associated with a chronic pathological process that causes continuous pain or the pain recurs at intervals for months or years” (Bonica 1990:9)
- Pain which persists past the normal time of healing (Bonica 1953)
- Pain occurring every day for 3 months in a 6 month period
### Incidence of chronic pain after surgery

<table>
<thead>
<tr>
<th>Type of operation</th>
<th>Incidence of chronic pain (%)</th>
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<tbody>
<tr>
<td>Amputation</td>
<td>30-85%</td>
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<tr>
<td>Thoracotomy</td>
<td>5-67%</td>
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<tr>
<td>Mastectomy</td>
<td>11-57%</td>
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<tr>
<td>Cholecystectomy</td>
<td>3-56%</td>
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<tr>
<td>Inguinal hernia</td>
<td>0-63%</td>
</tr>
<tr>
<td>Vasectomy</td>
<td>0-37%</td>
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<tr>
<td>Dental surgery</td>
<td>5-13%</td>
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</tbody>
</table>

(ANZCA FPM 2005: 11)
Type of surgery and LOS

- Inguinal hernia repair: 1.5 – 6 hours
- Cholecystectomy: Same day in > 80%
- Vaginal hysterectomy: Same day
- Mastectomy: < 1 day in 90%
- Radical prostatectomy: 1 day in 75%
- Rectal prolapse: < 24 hours in 80%
- AAA: 3 days
- Craniotomy: < 24 hours in 40%
- Colonic resection: 2-3 days
- Closure of colostomy: 2-3 days
Benefits of managing pain

- Improved acute pain management may help to prevent the development of chronic pain
- Decreased pain
- Improved self care abilities and functional status
- Improved coping skills
- Improved mobility
- Return to work
- Decreased utilisation of health care resources
Analgesia in the acute setting

- Multimodal analgesia
- Around the clock dosing regimes not PRN
- Small, incremental doses of IV opioids titrated to analgesic effect
- Regional analgesia
- Comfort measures
- TLC
Morphine sulphate

- Principal alkaloid of opium
- Potent mu agonist which acts on the opioid receptors in the brain, spinal cord and other tissues
- Peak analgesic action 20 minutes after IVI
- Elimination half life is approximately 1.5-2 hours (if normal renal function)
Fentanyl sulphate

- Semi-synthetic opioid
- Potent mu agonist which acts on the opioid receptors in the brain, spinal cord and other tissues
- Onset of action is almost immediate with IVI with a duration of action of 30-60 minutes with a single dose of up to 100mcg
IV dose frequency

- Every 3 – 5 minutes until the patient is comfortable or the maximal amount prescribed has been given.
- If the maximal amount prescribed has been reached or severe pain persists the patient must be medically reviewed.
How much is the right amount?

- The amount the patient needs to be comfortable – there is a wide intra and inter patient variability in opioid requirement

- Dose administration and frequency must be titrated to analgesic effect and individual patient response
Special considerations

- Extra care and observation should be taken with elderly patients, children, those with obstructive sleep apnoea, those with impaired renal function and obese patients.

- Patients who non-opioid naïve e.g. cancer pain patients, those with chronic pain, patients on methadone maintenance programs and substance abusing patients usually require higher doses to achieve analgesia.
Contraindications to IV opioid

- Haemodynamically unstable patients eg a pulse rate of > 100 bpm or systolic BP < 100 mm Hg
- Patients with a respiratory rate of less than 10 breaths per minute or ineffectual respiratory effort
- Grossly intoxicated patients
- Oxygen saturations of < 95% on room air
Subcut or IV?

- Should avoid SC in poorly perfused patients
- Use 22 or 24g cannula not scalp vein needles
- Young fit male of average build morphine 10-15 mgs SC then after 30 minutes if pain is unresolved give 5-7.5 mgs. After 30 minutes if pain still severe give 5-7.5 mgs then 50% of the total loading dose can be given every 2-4 hours (eTG 2012)
Regional anaesthesia may be beneficial in reducing the incidence of cancer recurrence.

Outcome benefits have been shown for breast cancer and paravertebral blocks and epidural analgesia for prostatectomy (Snyder and Greenberg BJA 2010).
In conclusion

- There’s a lot of pain out there
- **Aggressive management of acute pain** can help to decrease the incidence of chronicity
- Everyone perceives pain differently
- Pain management after surgery starts at initial contact in PAC
- Education, communication, planning
- Pain management is not a sprint to the finish - it's a slow and steady race, sometimes of marathon proportions
- Optimal pain management will make us all winners