CLINICAL PATHWAYS AT THE END OF LIFE

Villa Gianluca

University of Florence

Effective Pain Control at the end of life

Listen to the patient

- Believe the patient's pain ranking

Support the patient/family

- Answer questions
- Provide information

Instruct re: need for pain control

Sources of pain

- Acute nociceptive pain from incision.
- Musculoskeletal pain from abnormal body positioning and immobility during and after surgery
- Neuropathic pain from excessive stretching or direct trauma to peripheral nerves

Pain Control

Decreases risk of

- Myocardial ischemia
- Tachycardia and dysrhythmia
- Impaired wound healing
- Atelectasis
- Thromboembolic events
- Peripheral vasoconstriction

Pain

Near the surgical site.

- Acute exacerbation of pain may be added to the basal pain
- Increases with activities such as coughing, turning, dressing changes
- Generally self limiting
- Progressive improvement over a relatively short period

With Special Populations

- Geriatric
- Be aware of renal/hepatic function
- Sensitivities/allergies
- Be pro-active with medication
- Opioids
- Combination meds
- Be aware of drugs to be avoided in the elderly

ASSESS & RE-ASSESS

- Before and after pain medications
- Put it in the patient's own words
- Assess for non verbal cues
- Be aware of special needs of the cognitively impaired patient
- Use appropriate pain scale
- Document, Document, Document,

ASSESSMENT TOOLS

- VAS
- PAIN FACES
- PAINAD
- FLACC

Post Op of Special Populations

Geriatric

- If with Cognitive Impairment
  - PAINAD scale
- Observe & re-assess frequently
- Guard/observe for delirium
  - superimposed on dementia
- Know drug side effects
- Know method of elimination

Medication Use

- Review information gathered during pre op assessment
- If something has not worked in the past don’t use it.
- Explain what you are doing and what you are giving
- When in doubt, follow the WHO guidelines

World Health Organization (WHO)

3- Step Ladder approach to pain management

- Step 1- Mild Pain (1-3/10)
- Nonopioid
- Add adjuvant analgesic agent

  (i.e.) Ice, heat

WHO cont'd

- Step 2 Mild to moderate pain (4-7/10)
- This step builds on step 1
- Treat with opioid combination drug
- (hydrocodone/acetaminophen)
- Watch ceiling effect of adjuvant drug
- Peds are dosed by weight
- Watch special needs patients/elderly

WHO cont'd

- Step 3- Severe pain (8-10/10)
- Use opioids
- Add adjuvant (i.e.)anti-anxiety,anti-emetics, muscle relaxants
- Start with short acting opioids to determine pain relief, breakthrough needs and frequency.
- Switch to long acting use equianalgesic dosing chart for conversion

POINTS TO REMEMBER

- The pain intensity determines the step at which to begin.
- Opioids are the only group of analgesics with no ceiling on dose with careful titration.
- Most opioid side effects resolve within a few days.
- Exception>>>>Constipation-- need to write for this immediately

Commonly used first line opioids

- Codeine
- Morphine
- Hydromorphone
- Oxycodone

Share the following characteristics

- Half-life of immediate release preparations is 2 to 4 hours
- Duration of analgesic effect between 4 to 5 hours when given at effective doses.
- Sustained release formulations have duration of analgesic effect of 8 to 12 hours

- Equianalgesic doses need to be calculated when switching from one drug to another
- when changing routes of administration or both.
- An equianalgesic table should be used as a guide in dose calculation
- Due to incomplete cross-tolerance clinicians should consider reducing the dose by 20 to 25% when ordering.

Morphine

Onset: 15 to 60 minutes

Peak Effect: 30 minutes to 1 hr

Half Life: 1.5 to 2 hr

IV: 0.05 to 0.1 mg/kg

5 minutes prior to procedure; max: 15 mg/dose

Morphine

Sedation, somnolence, respiratory distress or depression, pruritis

Reversal:

Naloxone: 5 to 10 mcg/kg/dose; Single dose should not exceed max recommended adult dose of 0.2 mg

Fentanyl

- Fentanyl is 80 to 100 times more potent than morphine.
- Studies report less constipation and somnolence in patients using transdermal fentanyl compared to those using SR morphine.

Fentanyl

- Fentanyl's high lipophilic properties provide a sufficient sublingual bioavailability of 90%, thus making it a suitable opioid for use sublingually.
- Conditions that may effect absorption, bl levels & clinical effects if the drug
- Morbid obesity
- Ascites
- opioid-naïve patients

Fentanyl

Onset: 1 to 5 minutes

- Peak Effect: (no data available)
- Half Life: 1.5 to 6 hr
- IV: 0.5 to 3 mcg/kg/dose; may repeat after 30 to 60 minutes; max: 50 mcg/dose
- Use lower doses (0.5 to 1 mcg/kg/dose) when used in combination with other agents, such as midazolam

Fentanyl

- Respiratory distress or depression, apnea, seizures, shock, chest wall rigidity (most likely to occur with rapid infusion or high doses)
- Reversal:
- Naloxone: 5 to 10 mcg/kg/dose; Single dose should not exceed max recommended adult dose of 0.2 mg

Sufentanil

- 5 to 10 times more potent than fentanyl.
- Injectable sufentanil (like fentanyl) is readily absorbed through the mucous membranes
- Early onset of action of about 5 to 10 minutes, when used sublingually

Sufentanil

- Good for incident pain control.
- Peak analgesic effect of 15 to 30 minutes
- Duration of the analgesic effect is 30 to 40 minutes.
- Use for incident pain control, dosing 10 to 15 minutes prior to the painful event.

Methadone

- Long half life of methadone prevent it being a first-line opioid.
- When converting to methadone dose reduction of 75 to 90% should be considered
- Initiation for pain management is 5mg bid or tid depending on age

Dilaudid

10mg IV morphine is equivalent to 1.3-2mg Hydromorphone

IV Dilaudid has a half life of 2.5 hours, duration of effect varies

Administering 1 mg or more of IV Dilaudid every 1 - 2 hours leads to a build up of the drug (stacking) and can increase adverse effects like respiratory depression. Know elimination

Stacking from delayed peak effect

Occurs when additional doses are given prior to peak effect leads to multiple doses, resulting in over dosage.

Caution:

Administration of a benzodiazepine with narcotic analgesics increases the risk of respiratory depression. (ie: Xanax, Lorazepam, Versed, Valium)

Midazolam: CNS Depressant

Onset: 1 to 5 minutes (short acting)

- Peak Effect: 3 to 5 minutes (IV)
- Half Life: 1.5 to 12 hr
- Oral: 0.2 to 1 mg/kg; 30 to 45 minutes before procedure; max: 20 mg
- IV: 0.05 mg/kg 3 minutes before procedure (may repeat dose X 2); max: 2 mg/dose

Midazolam: CNS Depressant

- Respiratory distress, depression, apnea, PVC's, amnesia, blurred vision, or hyperexcitibility

Reversal:

- Flumazenil:(Romazacon) 0.2 mg/dose q 1 minute; max cumulative = 1 mg

POINTS TO REMEMBER

- Dosing intervals are determined by the duration of action as well as the half-life of the drug
- Know the route of elimination
- Adjust dose and frequency for special populations.
- Be aware of prior surgeries involving bowel, stomach, liver, kidneys

Opioid-induced Neurotoxicity (OIN)

- Hyperalgesia (heightened sensitivity to the existing pain)
- Allodynia (a normally non-noxious stimuli resulting in a painful sensation),
- Agitation/delirium with hallucinations and possibly seizures.
- Due to the accumulation of toxic metabolites and impaired renal

Post Op Documentation

- Document response to medication
- Pain relief
- Increased agitation
- Be pro-active if patient unable to verbalize
- Painful procedures result in pain

(Treat as you would a family member)

GOAL

- Promote optimal pain management
- Reduce anxiety
- Support the patient
- Improve post op outcomes
- Promote patient satisfaction

QUESTIONS????