Trauma Care Ireland

CUH Cork University Hospitals | UCC

MAJOR TRAUMA CENTRE

Patient Addressograph

CORK UNIVERSITY HOSPITAL CHEST WALL INJURY & RIB FRACTURE ANALGESIA PATHWAY

Mechanism_____

Rib Fractures

Left #'s _____+/-Flail ☐

Right #'s_____+/-Flail ☐

Pneumothorax/ Haemothorax

Left Chest Drain

Right Chest Drain

Other Fracture

Clavicle L/R Scapula L/R Sternum

Vertebral _____Other Chest Injury_____

Age____ **Significant Co-morbidities** ☐

Worst SpO2 on RA _____ **RR**_____

Chest Injury Score (for calculator – Rib fractures (emed.ie)

- ☐ Age: for each 10 years over age 10 (+1)
- ☐ Rib fractures: for each individual fracture (flail rib = +6) (+3)
- ☐ Chronic lung disease (+5)
- ☐ Anticoagulant or Antiplatelet (except aspirin) (+4)
- ☐ SaO2 at room air: for each 5% fall below 95% (+2)

TOTAL SCORE =

Risk Factors for deterioration

- ☐ Obstructive Sleep Apnoea
- ☐ Clinical Frailty Score of 4 and above
- ☐ Morbid obesity
- ☐ Pre-existing chronic pain/ IVDU
- ☐ RR >20
- ☐ Pre-existing COPD or Heart disease
- ☐ Cognitive impairment

1. Initial Analgesia Regimen

0-10/ <2 Risk Factors

Standard pathway

- ☐ Paracetamol 1g PO QID (Regular) (consider 3g/24hrs in low body weight/ older frail adults)
- ☐ Ibuprofen 400mg PO TDS (Regular) if eGFR >50 **+ PPI**

***eGFR <30 absolute contraindication for eGFR 30-50 ½ dose & r/v daily**

Opioid

- ☐ Oromorph 5-10mg (2.5-5ml) 4-6hourly (2.5mg-5mg if >75 y/o or frail)

Or (Oxycodone preferable to Oromorph in renal impairment)

- ☐ Oxycodone Immediate Release 10mg PO 4-6 hourly PRN (2.5 -5 mg 4- 6 hourly If over 75y/o or frail) .**(eGFR <10 start at 5mg)**

>11/ >2 Risk Factors

- ☐ **Acute Pain service consult; refer via ICM, call APS Reg 0871798826**
- ☐ **Physiotherapy referral**

Standard pathway

- ☐ Paracetamol 1g PO QID (Regular) (Consider 3g/24hrs in low body weight/ older frail adults)
- ☐ Ibuprofen 400mg PO TDS (Regular) if eGFR >50 **+ PPI**

***eGFR <30 absolute contraindication, eGFR 30-50 ½ dose, consider appropriateness in older adults & r/v daily**

- ☐ Oromorph or Oxycodone Immediate Release as described opposite

NSAID Contraindications; Active peptic ulceration, Allergy, Hypersensitivity to Aspirin/ NSAIDs, CCF/IHD/PVD/ cerebrovascular disease, Use of anticoagulant, Pregnancy, Traumatic Brain Injury, **Caution;** Renal impairment

If Ileus present or expected, or nil enterally

- ☐ Replace oral paracetamol with IV until oral medication resumed
- ☐ Replace Ibuprofen with 40mg IV Parecoxib daily (max 3 days duration) until oral intake if eGFR >90(eGFR <30 exclude, sGFR 30-50 ½ dose)
- ☐ Stop oral opiates. Consider PCA via Acute pain service. Add Lidocaine Patch. (Should only be applied for 12 hours in a 24 hour period – 12 on/12 off)
- ☐ WARNING; Do not concomitantly use a lidocaine patch (Versatis) with a local anaesthethic infusion)

2. Analgesia Review at 2 hours post implementation of initial analgesia pack. Daily Senior decision maker analgesia review

Pain on movement (0-10)		Pain on deep Inspiration (spirometry)		Cough assessment	
Severe (8-10)	3	Unable to perform	4	Absent	3
Moderate (5-7)	2	Severely impaired	3	Weak	2
Mild (0-4)	1	Mild impairment	2	Strong/Normal	1
		No impairment	1		

PIC >5 = HIGH RISK PATIENT

Total PIC score /10

3. Outcome

ADEQUATE (<5)

Continue with daily review

Repeated observations (incl: Resp rate/ o2 requirement)

Complete daily delirium screen

Review side effects of analgesia daily – deescalate if appropriate

Escalate to **'INADEQUATE'** pathway if any deterioration.

INADEQUATE (>5)

Contact Acute pain service for consideration of regional analgesia/ PCA

Contact the inpatient trauma service if not done already

Consideration for ICU review

4. Assess need for Cardiothoracicis Review

- ☐ Flail Chest
- ☐ Multiple displaced rib fractures
- ☐ Complications (Open Injury, Significant Haem/ Pneumothorax)
- ☐ Chest Injury score >21
- ☐ Severe chest wall deformity
- ☐ Refractory pain causing respiratory failure

5. Ongoing care/ Assess need for ICU review

Chest Injury score <11; consider CDU admission/ discharge

All admitted patients should also be referred to the IPTS.

ICU Review in patients with;

- ☐ Multiple concomitant injuries
- ☐ comorbidities (frailty/ COPD/ Neuromuscular Disorder)
- ☐ Ineffective cough despite analgesia strategy
- ☐ SpO2 <92% on room air
- ☐ RR >20 and/or accessory muscle use

NSAIDs

Avoid or use with caution in the following circumstances: Older adults, Active peptic ulceration, Allergy, Hypersensitivity to Aspirin/ NSAIDs, CCF/IHD/PVD/ cerebrovascular disease, Use of anticoagulant, Pregnancy, Traumatic Brain Injury, Caution; Renal impairment

Guidance for opioid prescribing for acute non cancer pain, postoperative pain and post procedure pain.

1. Slow release opioids are not routinely recommended for most patients with acute non-cancer pain, post-operative pain and post-procedure pain.
2. Immediate release opioids should be prescribed for a maximum of 4 days for acute pain management and only if clinically indicated.
3. Older adults are less likely to report pain and more likely to be under treated for pain. Ensure they are questioned routinely about presence of pain and offered analgesia as appropriate.
4. Careful consideration should be given to the requirement for opioid analgesia, including short-acting, on discharge for acute non-cancer pain, post-operative pain and post-procedure pain.
5. A Patient Information Leaflet (PIL) should be supplied on discharge.
6. Patients should be informed, as part of the discharge process, of the risks associated with opioid analgesia, including addiction.
7. Patients should be informed, as part of the discharge process, of the requirements to safely dispose of unused opiate medication and how they can do this, both verbally and in writing.

Reference Number:	Revision No: 1	Review Cycle: 6 months
Working Group Acute Pain Service; Dr. Cormac Mullins Cardiothoracic Surgery; Mr. Nadeem Anjum Mr. Kishore Doddakula Emergency Medicine/ Trauma Service: Dr. Eanna Mac Suibhne Reviewed at Trauma Clinical Operations Group Incl. ICU/ Anaesthesiology, Geriatric Medicine	Owner: Dr Eanna Mac Suibhne	
Approver: Trauma clinical operations group/ Drugs and Theraputics committee	Approval Date: September 2024	