

Rib Fracture Pathway SFT

Blunt chest trauma accounts for over 10% of all trauma cases presenting to Emergency Departments worldwide. It can vary from minor bruising or an isolated fracture to severe crush injuries on both sides of the thorax leading to potentially fatal respiratory compromise.

These patients need careful management including the following:

- **Analgesia** – prescribe & encourage patients to take adequate analgesia – see page 2.
- **Oxygen** – maintain the SpO2 within a suitable range depending on whether they have COPD.
- **Physiotherapy and breathing exercises** – may be started in hospital and should be continued following discharge.
- **Mobilisation** – early mobilisation helps to improve the patient's outcome.
- **Chest drains** – may be required if there is a haemothorax or pneumothorax.
- **Surgery** – rib fixation is available through referral to UHS. - see page 3..

Imaging

If an initial chest x-ray shows multiple rib fractures – consider a chest CT early - in discussion with senior clinicians and Radiology Consultant.

If the mechanism of injury or presentation fulfils the trauma criteria the patient may need a **trauma CT** (CT head to pelvis). This must be authorised by a Consultant.

Risk Scoring.

If Battle's score ≥ 26 or other clinical concerns discuss with ITU (bleep 1319)

Battle CE et al. Predicting outcomes after blunt chest wall trauma: development and external validation of a new prognostic model. Critical Care 2014; 18:R98. * e.g. Pneumonia, prolonged LOS >7 days, ICU admission, in-hospital mortality

Risk Factor		Score
Age	1 point for every 10 years of age (eg 67 yrs = 6)	
Rib fractures	3 points for each individual rib # (3# =9)	
Chronic Lung Disease	5 points	
Pre-injury anticoagulants	4 points	
Oxygen saturations on air	2 points for every 5% reduction (90-94%=2, 85-89% =4 80-84% = 6)	
TOTAL:		

Final Risk Score	0-10	11-15	16-20	21-25	26-30	31+
Probability of complications*	13%	29%	52%	70%	80%	88%

ANALGESIA

1. Regular Analgesia:

Regular	Cautions
Paracetamol 1g QDS	Reduce dose if <50kg
Ibuprofen 400mg TDS	Unless contraindicated or > 70 years
Omeprazole 20mg daily	If NSAID prescribed and not already on PPI
Dihydrocodeine 30mg QDS or Tramadol 50mg QDS	Consider tramadol 25mg dispersible in the elderly
Lidocaine 5% Patch over rib #s Up to 3 patches	24-hour continuous use unless skin irritation

2. If requiring Admission:

PRN – choose between	Cautions
Oramorph 10-20mg 2*	Dose reduction in elderly, avoid in renal impairment
Oxycodone IR 5-10mg 2*	If poor tolerance of Morphine
Oxycodone IR 2.5 - 5mg 4-6*	In elderly or renal impairment
Ondansetron 4mg TDS IV / PO	
Laxatives- Movicol BD and Senna ON	
Contact Pain Team Early -	See contact numbers below

3. Regional Anaesthesia:

If ≥ 3 rib fractures and ANY risk factor below, discuss with anaesthetist, for consideration of regional anaesthetic block/catheter

RISK FACTORS:

Flail chest
 Haemo/pneumothorax
 Lung contusion on CT
 ≥65 years
 Pre-existing cardio-respiratory disease
 Smoker
 Low SPO2 or requiring supplemental oxygen
OR significant pain despite appropriate analgesia

Contact the acute pain team on bleep 1678 Mon – Fri 9-5
 OOH leave a message on ext. 4330 for assessment the next working day
 OOH, bleep on call anaesthetist on 1319 or consultant in charge of theatres on bleep 1713

RIB FIXATION

UHS Thoracic Team are happy to receive referrals for consideration of rib fixation. Their email is ribfixation@uhs.nhs.uk and they need the referral form completed and attached to the email.

They will consider surgery with the presence of:

BOTH MAJOR CRITERIA
ONE MAJOR AND ONE MINOR
ALL 3 MINOR CRITERIA

Major Criteria:

Flail segment:

≥3 displaced fractures

Minor Criteria:

Unable to cough/mobilise

Uncontrollable pain

High/increasing O2 support:

They have not yet established clear criteria for not offering surgery, but generally, the most common features against surgery are:

Morbid obesity

Concomitant empyema

Elderly age (subjective)

Severe comorbidities

Very posterior/paraspinal fractures

They will evaluate these case by case.

[Rib fixation referral form](#)

Useful Links:

[Patient information leaflet](#)

[Inpatient referral pathway](#)

