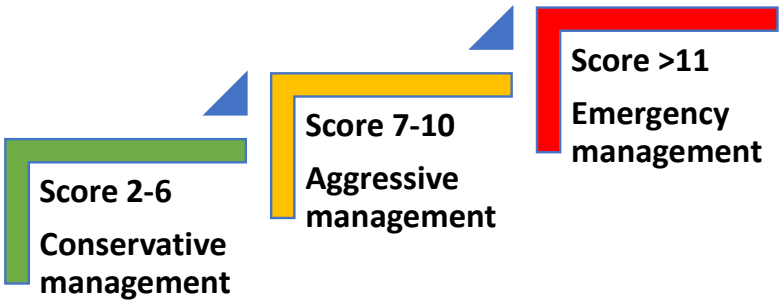
Mersey and West Lancashire Teaching Hospitals NHS Trust

ACUTE MANAGEMENT OF PATIENTS WITH THORACIC INJURY REQUIRING HOSPITAL ADMISSION

Patient admitted with a chest injury that may include fractures of:
Ribs - Sternum - Scapula - Clavicle

Calculate the Rib Fracture Score



Risk factors for deterioration

- High rib fracture score > 6
- Clinical Frailty score ≥ 5
- Chronic lung disease
- Flail segment
- Need for supplemental oxygen
- Unable to deep breathe, cough or comply with physiotherapy

BREAKS	SIDES	AGE FACTOR
• May be more than one break per rib, count breaks individually	• Unilateral = 1 • Bilateral = 2	• < 50 =1 • 51 to 60 = 2 • 61 to 70 = 3 • 71 to 80 = 4 • Over 80 = 5

Breaks ☐ **X** **Sides** ☐ **+** **Age** ☐

Total: ☐

Refer all inpatients to Physiotherapy

All inpatients should be referred to physiotherapy.
8am – 4pm Monday – Sunday.
Physiotherapy Team: **Bleep 7193 or Ext 7511**
Or contact ward physio teams.

Physiotherapy

- Routine assessment
- Active Cycle of Breathing Technique (ACBT)
- Mobility
- Incentive spirometry
- Cough assist

Risk factors supporting admission in uncomplicated rib fractures

- Lives alone
- Smokers
- Obesity
- Difficulty coughing or deep breathing
- Age >75
- Clinical Frailty Score ≥ 5
- Chronic lung disease
- Sats <95% in air at presentation
- High rib fracture score > 6

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Refer all high-risk patients to Critical Care Outreach Team

Patients with a rib fracture score >6 or who are clinically vulnerable should be referred to critical care outreach team. **(Ext 2409)**

Manage pain

Refer to the acute pain team 8am – 4pm Monday – Friday. **Ext 1266 or Bleep 7212 / 7652**
Consider referral to on call anaesthetist out of hours. **Bleep 7003 / 7020 / 7695**

Step wise management of analgesia.
Pain scores should be < 5 on deep breathing and patients should be able to comply with physiotherapy.
Pain scores and oxygen saturations should be documented 2 hourly.

Initial control in severe pain*

IV Morphine up to 0.2mg/kg – titrate to effect.
Pain scores should be < 5 on deep breathing.
*Consider age, weight and renal function.

Regional anaesthesia

(Bleep on call anaesthetist 7003)

Regional nerve blocks should be considered and discussed in all patients with rib fractures who have multiple risk factors for deterioration or in those whose pain is difficult to control.

Anticoagulation is **NOT** an absolute contraindication to regional anaesthesia.

Regional anaesthesia infusion catheters can be managed on some surgical wards.

Patient Controlled Analgesia (PCA)

Patients whose pain is not easily controlled with initial measures may require a PCA.
Refer patient to Anaesthetics on call and pain team. Consider regional anaesthesia.

In-patient analgesia bundle*

Paracetamol 1g QDS (<50kg then 15mg/kg**)

Ibuprofen 400mg TDS*

Omeprazole 20mg OD

Senna 15mg ON

Ondansetron 4mg TDS PRN

Naloxone 400mcg PRN

Opiate: *

a) Age <75: Codeine 60mg QDS + Oramorph 5-10mg PRN

b) Age ≥75: Oxycodone MR 5mg BD + Oxycodone IR 2.5-5mg PRN

* consider age, weight and renal function in all prescriptions.
** see trust guidelines on paracetamol prescription.

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Consider Discussion with Major Trauma Centre (Aintree)

ALL SUSPECTED THORACIC INJURIES SHOULD BE DISCUSSED WITH A SENIOR ED CLINICIAN

Indications for CT chest

- High risk mechanism
- Penetrating chest injury
- Over 65 with blunt trauma to the chest with clinical signs of injury and any of the following:
  - COPD/chronic lung disease
  - Anticoagulation
  - Hypoxia (<95% in air)

Intercostal drain (ICD)

Any patient with a clinically significant pneumothorax or haemothorax associated with a chest wall injury will require an intercostal drain. The decision to insert an ICD should be made by the local team in the trauma unit and should not require discussion with the MTC.

Any ICD should be inserted according to the British Thoracic Society Guidelines, remembering the importance of position and technique. Patients do not need to be transferred to the MTC to have an ICD inserted.

Contact details

Aintree Trauma Team Leader
0151 529 2325

Aintree Trauma Co-ordinator
0151 525 5980 (Bleep 5428)

Admitting team

Patients deemed to need admission should be referred to the general surgical team on call. Admission to medicine should be considered in multi-comorbid patients.

Patients to consider discussion with MTC include:

- Polytrauma cases
- Rib fracture scores >11
- Patients with a high clinical suspicion of deterioration
- ≥ 3 rib clinical flail (not simply a radiological flail)
- ≥ 3 ribs with severe displacement (bi-cortical displacement, >100%) & associated chest wall deformity & ventilatory compromise despite optimal pain management
- Rib fractures with associated lung herniation
- Need for mechanical ventilation with any of the above
- Open chest wound
- Large haemothorax (>500mls drained through ICD)

Patients who do not require a referral

- Undisplaced / mildly displaced (<100% displaced), multiple rib fractures
- No chest wall deformity on CT Scan
- 1st – 3rd rib fractures or fractures directly under the scapula (not amenable to fixation)
- Undisplaced sternal fractures

Local management

If a patient can sit forwards unaided, deep breathe and cough then it is unlikely they will benefit from rib fracture surgery and can be safely managed at the trauma unit.

It is highly unlikely that patients with no chest wall deformity will be accepted for transfer.

See Cheshire and Mersey Major Trauma referral guidelines for further details.