APPROVED DOCUMENT

Directorate of Anesthesia and ICU

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- Ms Amal ALJabri, Clinical Pharmacist
- Ms Safa AL Raqqadi, General nurse A, Accreditation Department (QM&PSD)

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Acronyms

RFS	Rib Fracture Score
ICU	Intensive Care Unit
PCA	Patient-Controlled Analgesia
NRS	Numeric Rating Scale
VAS	Visual Analog Scale
NSAIDs	Non-Steroidal Anti-Inflammatory Drugs

Rib Fracture Pain Management Guideline

Chapter one

1. Introduction

Rib fractures are a common injury that can result from various causes, including blunt trauma, falls, and sports-related incidents. These injuries often lead to significant pain, which can impair respiratory function, limit mobility, and contribute to complications such as pneumonia and chronic pain syndromes. Effective pain management is crucial to mitigate these risks, promote recovery, and enhance the quality of life for patients.

Recognizing the critical need for standardized and effective pain control, we are proposing to implement comprehensive rib fracture pain management guidelines.

2. Purpose

The purpose of guidelines is to provide a structured framework to guide healthcare professionals in delivering consistent, evidence-based care tailored to the needs of each patient.

3. Scope

The guiding applies to all healthcare professionals involved in care of patient with Traumatic rib fracture

Chapter Two

4.Structure

This is the guideline for DGKH to ensure the management of patients with traumatic rib fractures as the following:

4.1 The Treating team should do the Patient assessment as follows:

a. Pain Evaluation:

- By using standardized methods for assessing pain severity.
- Also, using tools like the Visual Analog Scale (VAS) or Numeric Rating Scale (NRS) to see impact on the patient's function and respiratory

b. Define criteria for high-risk patients: such as the elderly, those with multiple rib fractures, or individuals with pre-existing respiratory conditions, who may require more intensive monitoring and intervention.

4.2 Multimodal Analgesia Approach:

a. Pharmacological treatments: use of NSAIDs, acetaminophen, opioids, and adjuvant medications like gabapentin, highlighting their roles, dosages, and considerations for use.

b. Non-pharmacologic treatments: Include guidance on non-drug interventions such as cryotherapy.

4.3 Regional and advanced pain management techniques:

a. Nerve blocks and epidurals: Provide protocols for the use of intercostal nerve blocks, thoracic epidural analgesia, and paravertebral blocks, including indications, procedural steps, and monitoring requirements.

b. Continuous pain relief options: Discuss the use of continuous infusion techniques and Patient-Controlled Analgesia (PCA) systems for ongoing pain control, ensuring patient safety and comfort.

4.4 Respiratory support and monitoring:

a. Respiratory care: emphasize the importance of supporting respiratory function through interventions such as incentive spirometry, chest physiotherapy, and ensuring adequate analgesia to enable deep breathing, coughing, breathing exercises, and positioning strategies to complement pharmacologic treatments and enhance pain relief.

b. Monitoring: Establish criteria for regular monitoring of respiratory status, pain levels, and overall patient condition to detect and address complications early.

4.5 Patient-centered care and education:

a. The treating team should provide health education for the patient and family about the rib fracture management, pain control options, and the importance of respiratory exercises and mobility.

b. The treating team should develop personalized care plans that consider the patient's pain tolerance, comorbidities, and preferences, ensuring a tailored approach to pain management.

4.6 Ethical and safety considerations:

a. The treating team should prioritize patient safety in all aspects of pain management, ensuring that interventions are evidence-based, appropriately monitored, and adjusted as needed to prevent adverse events.

b. The treating team should adhere to ethical standards in pain management, including respecting patient autonomy, informed consent, and the appropriate use of opioid medications to balance pain relief with the risk of dependency.

Chapter Three

5. Responsibilities

5.1 **Directors / HoDs Shall**

5.1.1 Ensure all doctors adhere to the guideline

5.2 **The Treating Team Shall:**

5.2.1 Define the roles and responsibilities of various healthcare providers (physicians, nurses, pharmacists, respiratory therapists, and physical therapists) in the pain management process.

5.2.2 Promote effective communication and coordination among team members to ensure cohesive care delivery and timely adjustments to the pain management plan based on patient needs and response.

5.2.3 Develop strategies for integrating the guidelines into existing clinical workflows and electronic health record systems to facilitate adherence and ease of use.

5.2.4 Provide comprehensive training programs for healthcare providers to ensure they are equipped with the knowledge and skills to apply the guidelines effectively in clinical practice.

5.2.5 Define key performance indicators and outcome measures to assess the effectiveness of the pain management guidelines, including patient pain scores, opioid consumption, respiratory complications, and overall patient satisfaction.

Chapter Four

6. Document History and Version Control Table

Version	Description	Author	Review date
01	Initial release	Dr. Rihab Al Lawati Dr. Wala Al Ajmi	2028

7. References

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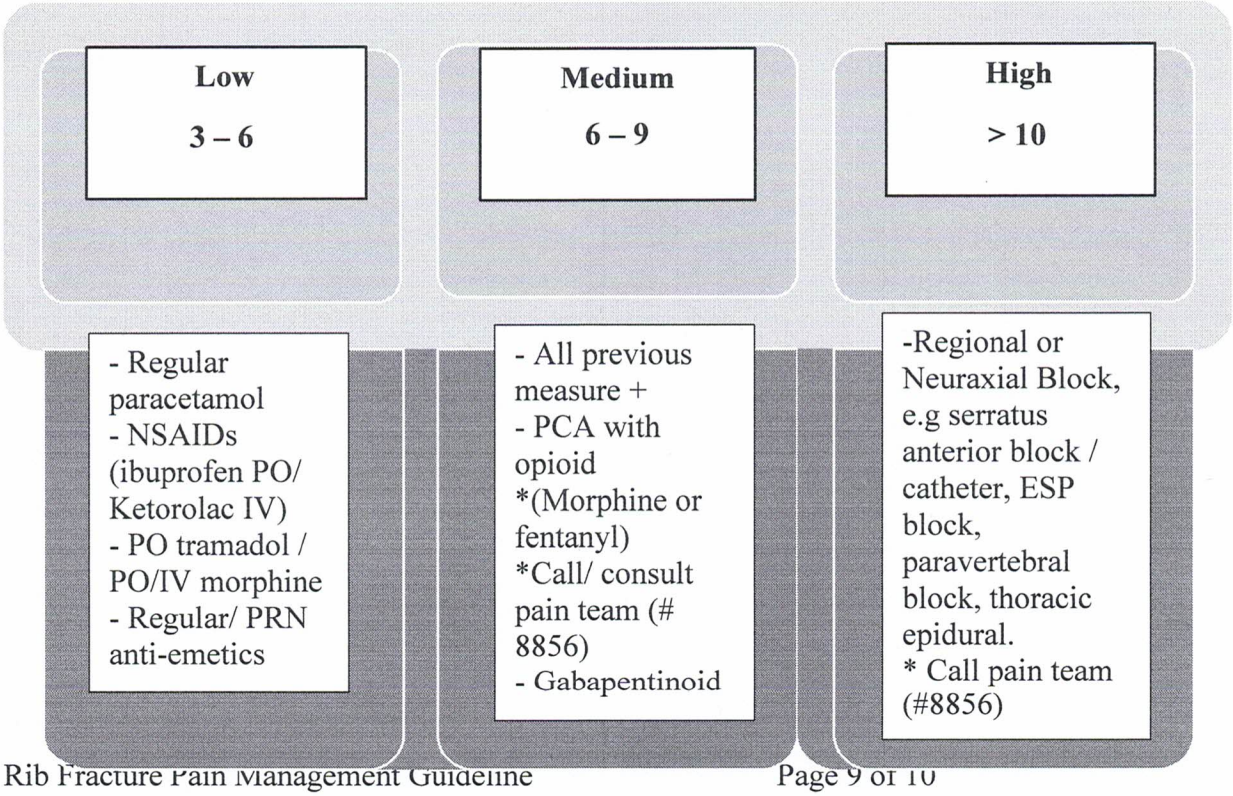
8. Annexes:

8.1 Appendix (1): Rib Fracture Score Calculation

(BREAKS X SIDES) + AGE = RIB FRACTURE SCORE (RFS)

BREAKS	SIDES	AGE
No. of fractures	Unilateral =1	Less than 50 =1
	Bilateral =2	51 – 60 =2
		61 – 70 =3
		71 – 80 =4
		More than 80 = 5

8.2 Appendix (2): Pain Management Plan



8.3 Appendix (3): Medications and recommendations

Medication	Suggested dose
Paracetamol	1 g QID regular
Ibuprofen	400 mg Q8H PO regular
Ketorolac	15-30 mg Q6H IV for up to 72 hours
Tramadol	50-100 mg Q6H PO PRN (max 400 mg/ day)
Morphine	2.5mg Q4H SC PRN or PO IR morphine 10mg Q6H PRN
GabapenTn	300 mg PO OD
PCA	-Fentanyl 15mcg/ml. No background. PCA bolus 15mcg. Lockout 10 mins. - Morphine 1mg/ml. No background. PCA bolus 1 mg. Lockout 10 mins.

**It's essential to consider the potential side effects of opioids and to prescribe medications to manage them effectively. Common side effects include constipation, nausea and drowsiness, so medications like laxatives (e.g. lactulose 15ml BID, Bisacodyl 5-10 mg OD), anti-nausea drugs (e.g. ondansetron 4-8 mg, metoclopramide 10mg) and stimulants (naloxone 0.4mg) should be prescribed along with opioids and used as needed