

Clinical Algorithm for the physiotherapeutic management of INTUBATED patients following injury to chest wall

Rating scale used

RATING	WORD	DESCRIPTION
1	Essential	without this element the effective functioning of the protocol would be severely impaired
2	Very important	without this element the protocol would be less effective, but not severely impaired
3	Important	this element desirable, but its absence would not make the protocol noticeably less effective for most
4	Unimportant	absence of this element would have little impact on effectiveness
5	Undesirable	presence of this element would have a detrimental effect on effectiveness

Statements rated as **ESSENTIAL** reaching CONSENSUS (SIQR < 0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELISTS	MEDIAN RATING
In consultation with the interdisciplinary team ensure sufficient pain management while ensuring that the patient is awake to effectively start mobilization ASAP	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.00 0.00	1	4/4	-	ESSENTIAL (1)
Monitor secretion viscosity and ensure sufficient humidification POSTED COMMENT: Humidification may not alter the viscosity of the secretions There is also a problem with "wet" lungs	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.13	1-2	3/4	2	ESSENTIAL (1)
Monitor color of secretions (bloody; infected) and manage in consultation with interdisciplinary team	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.13	1-2	3/4	2	ESSENTIAL (1)

Physiotherapy intervention should be initiated ASAP after insertion of the drain and continued at least two times per day	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.00	1	4/4	-	ESSENTIAL (1)
Position patient upright ASAP POSTED COMMENT: in some cases it may not be possible to position the patient upright - a modified best position should be used	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.13	1-2	3/4	2	ESSENTIAL (1)

Statements rated as VERY IMPORTANT reaching CONSENSUS (SIQR <0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELISTS	MEDIAN
Include early mobilization and arm exercises ASAP POSTED COMMENT: Early mobilization is essential for effective ventilation and reduces the need for intensive physiotherapy	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.25	1-3	2/4	1;3	VERY IMPORTANT (2)
Physiotherapy intervention must be based on blood gas evaluation. Determine whether mechanical or pulmonary insufficiency and manage accordingly (refer to overall clinical algorithm) Ensure sufficient pain management before the initiation of physiotherapy intervention	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.13	2-3	3/4	3	VERY IMPORTANT (2)
POSTED COMMENT: you lose the cooperation of the patient when you start with a procedure that you know cause pain. The patient also loses confidence	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.13	1-2	3/4	1	VERY IMPORTANT (2)

Clinical Algorithm for the physiotherapeutic management of NON-INTUBATED PATIENTS following injury to chest wall

Statements rated as **ESSENTIAL** reaching CONSENSUS (SIQR <0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELISTS	MEDIAN
Patients must be able to cooperate before CPAP intervention can be considered POSTED COMMENT: CPAP does not necessarily require patient cooperation	CRITERIA USED TO DETERMINE SUITABILITY FOR THE INITIATION OF CPAP INTERVENTION	0.38	1-4	3/4	4	ESSENTIAL (1)
Early ambulation including stair climbing and stationary bicycle if available	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.00	1	4/4	-	ESSENTIAL (1)
Initiate physiotherapy intervention ASAP after placement of ICD	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.00	1	4/4	-	ESSENTIAL (1)
Include deep breathing exercises	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.00	1	4/4	-	ESSENTIAL (1)
Ensure that patient clears chest through directed coughing with wound support	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.00	1	4/4	-	ESSENTIAL (1)

Can combine nebulization with DBE's when secretions have increased viscosity	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.00	1	4/4	-	ESSENTIAL (1)
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Statements rated as **VERY IMPORTANT** reaching CONSENSUS (SIQR <0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELISTS	MEDIAN
Patient must be alert to consider CPAP intervention	CRITERIA USED TO DETERMINE SUITABILITY FOR THE INITIATION OF CPAP INTERVENTION	0.25	2-4	3/4	4	VERY IMPORTANT (2)
Patient must be hemodynamically stable to consider CPAP intervention	CRITERIA USED TO DETERMINE SUITABILITY FOR THE INITIATION OF CPAP INTERVENTION	0	2	4/4	-	VERY IMPORTANT (2)
CPAP intervention must be applied for at least 6 hours per day	FREQUENCY OF CPAP INTERVENTION	0	2	4/4		VERY IMPORTANT (2)
The frequency of CPAP intervention should be managed based on oxygenation status of patient	FREQUENCY OF CPAP INTERVENTION	0	2	4/4	-	VERY IMPORTANT (2)
Physiotherapy intervention must be applied at least 2 times per day but as much as 4 times per day dependent on patient participation	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.13	1-2	3/4	1	VERY IMPORTANT (2)
Ensure that patient pain is under control before initiating physiotherapy intervention POSTED COMMENT I think pain control is essential for respiratory therapy to be effective chest complications may set in if one waited for pain control before initiating intervention. It may be wiser to motivate the patient about complications and initiate intervention even if it is on a limited scale	MONITORING PAIN MANAGEMENT AND SECRETION VISCOSITY	0.25	1-3	2/4	1;3	VERY IMPORTANT (2)

Statements rated as UNIMPORTANT reaching CONSENSUS (SIQR <0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELISTS	MEDIAN
Only patients presenting with unilateral injuries to the chest wall should be considered for CPAP intervention	CRITERIA USED TO DETERMINE SUITABILITY FOR THE INITIATION OF CPAP INTERVENTION	0.13	4-5	3/4	5	UNIMPORTANT (4)

Statement that did not reached consensus as to the rating

	SUBJECT AREA	SIQR	ALTERNATIVE RATING BY PANELISTS
Include shoulder and thoracic mobility exercises ASAP POSTED COMMENT: This is essential for effective respiratory movement	SUGGESTED PHYSIOTHERAPEUTIC MANAGEMENT (ACTIVITIES AND FREQUENCY)	0.5	1;1;2;2