



Bronchial Asthma Clinical Pathway



Patient details:	Height : Weight: Body Mass Index :
Past History: Exacerbation H/o: Hospitalization H/o: Occupational H/o	Inhaler Type/ Dosage: [if available] <input type="checkbox"/> MDI +/-Spacer <input type="checkbox"/> DPI <input type="checkbox"/> Nebuliser Spirometry : <input type="checkbox"/> FEV1/FVC: <input type="checkbox"/> PEFR:
Previous lab investigations if any	

CO-MORBIDITIES	<input type="checkbox"/> Hypertension	<input type="checkbox"/> COPD	<input type="checkbox"/> Immunocompromised	<input type="checkbox"/> Post-Transplant
	<input type="checkbox"/> Type 2 Diabetes Mellitus	<input type="checkbox"/> CLD	<input type="checkbox"/> Malignancy / Chemo Tx	<input type="checkbox"/> Alcoholic
	<input type="checkbox"/> CAD	<input type="checkbox"/> CKD	<input type="checkbox"/> Steroids / Immuno suppressant Drugs	<input type="checkbox"/> Smoker
	<input type="checkbox"/> Pulmonary Tuberculosis	<input type="checkbox"/> Thyroid disorders	<input type="checkbox"/> Obstructive sleep Apnea	<input type="checkbox"/> SARS CoV2



Step 1

- Obtain Initial history and physical examination
- Obtain vital signs including oxygen saturation, heart rate, respiratory rate
- Blood gas analysis

□ Mild or Moderate

- Mild end expiratory wheezing only
Oxygenation on room air 90-95%
- Minimal to no use of accessory muscles
Pulse rate 100-120 bpm/respiratory rate increased
- Talks in phrases, prefers sitting to lying
PEF >50% predicted

□ Severe

- Talks in words, sits hunched forwards & agitated
- Oxygenation on room air < 90% & PEF < 50% predicted or best
- Significant accessory muscle usage
- Tachypnea >30/min & Tachycardia >120beats/min

Start treatment

- Give SABA 4-10 puffs by MDI + Spacer/or Nebulise with SABA [1 Respule], repeat every 20min for 1 hour.
- Prednisolone: Adults 40-50mg, children 1-2mg/kg, Max 40mg.
- Controlled oxygen [if available]: Target Spo₂ 93-95%

If worsening

- Continue SABA,
- Add Ipratropium bromide
- Consider IV Magnesium

Improving

- Continue treatment with SABA as needed
- Assess response at 1 hour [or earlier]

Worsening

Follow Step 2

Assess for Discharge

- Symptoms improving, not needing SABA
- PEF improving, and >60-80% of personal best or predicted
- Oxygen saturation >94% on room air

Discharge Plan and Follow up [Appendix]



Step 2

Assess Response to therapy

Incomplete response

- Within 1hr and /or risk factors
- Signs & Symptoms mild or moderate
- PEF or FEV1 40-60%
- Oxygenation not improving

Poor response

- Within 1hr and /or risk factors
- Signs & Symptoms altered sensorium confusion
- PEF or FEV1 <40%

Life threatening

- Drowsy, confused or silent chest.
- Paradoxical breathing

Status Asthmaticus

- Severe asthma exacerbation that does not respond readily to intensive bronchodilator treatment (15 to 30 minutes)

Fatal Asthma

- Cardiopulmonary arrest
- Irreversible anoxia with cerebral edema

Activate Critical care team

ICU Treatment and Management [Appendix]

ICU Days	EVENTS / SUPPORTS				
1	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
2	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
3	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
4	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
5	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
6	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
7	<input type="checkbox"/> MV	<input type="checkbox"/> RRT	<input type="checkbox"/> Vasopressors	<input type="checkbox"/> Organ dysfunction	<input type="checkbox"/> Others
>7 days Course of illness					

Outcome

I. APACHE II/IV Score: _____ 2. SOFA Score at the time of admission: _____ , 48hr: _____ at the time of transfer out / LAMA / Discharge: _____ 3. Length of ICU Stay: _____ 4.Length of Hospital stay: _____

II. Organ Failure : AKI Liver failure Coagulopathy Encephalopathy Myocardial Dysfunction CIPNM MV dependent

III. Renal replacement therapy _____ day from CRRT / SLED

IV. MV _____ duration Prone ECMO Tracheostomy

V. Outcome: Death Survived (Discharged from ICU / Transfer out to stepdown / HDU/ Room) LAMA

Ambulated Bed ridden (with support / without support)

Doctor Name: _____, Sign: _____

Appendix 1:

ICU Treatment & Management
• Activate Critical Care ICU Team
• Oxygen to keep SpO ₂ > 92%
• Continue SABAs and corticosteroids.
• Add ipratropium & consider other treatments
• Consider Non Invasive Ventilation (NIV) e. g. Bilevel if patient able to protect airway and LOC not impaired
• Monitor clinical response every 15 minutes with ABGs if possible for the next 1 hour
• Rapid sequence intubation with No. 8 mm endotracheal tube if ARF ensues or if evidence of pneumonia on CXR
• Mechanical ventilation control mode with FiO ₂ 1.0, TV 6 to 8 ml/kg, I:E ratio 1:3 or 1:4,. Check for auto-PEEP (PEEPi). PEEP _e 5 cm H ₂ O or 80% of PEEPi
• Monitor PIP and Pplat. Keep Pplat < 30 cm H ₂ O
• If pH < 7.25 and falling and/or PaCO ₂ > 80 mm Hg and rising after 2 to 4 hours, consider permissive hypercapnia or either IV (ketamine, propofol, dexmedetomidine) or general anesthesia (isoflurane, sevoflurane)
• Check ABGs every hour. Keep pH > 7.20
• Monitor for barotraumas, e. g. pneumothorax
• If respiratory acidosis and hypoxemia persist or worsen after 4 to 6 hours, activate ECCOR and ECMO Team

Appendix 2:

Discharge Plan

- **Reliever:** continue as needed
- **Controller:** Start, or step up.
- Check inhaler technique, adherence
- **Prednisolone:** Continue, usually 5- 7days.
- **Follow up:** within 2-7 days

Appendix 3:

Indications for Intubation

- Cardiorespiratory arrest or apnea
- Acute respiratory failure with PaO₂ <60 mmHg or PaCo₂ >50 mmHg
- Acute chronic respiratory failure
- Decreased level of consciousness
- Hypopneas
- Clinical signs of fatigue, e.g. paradoxical breathing

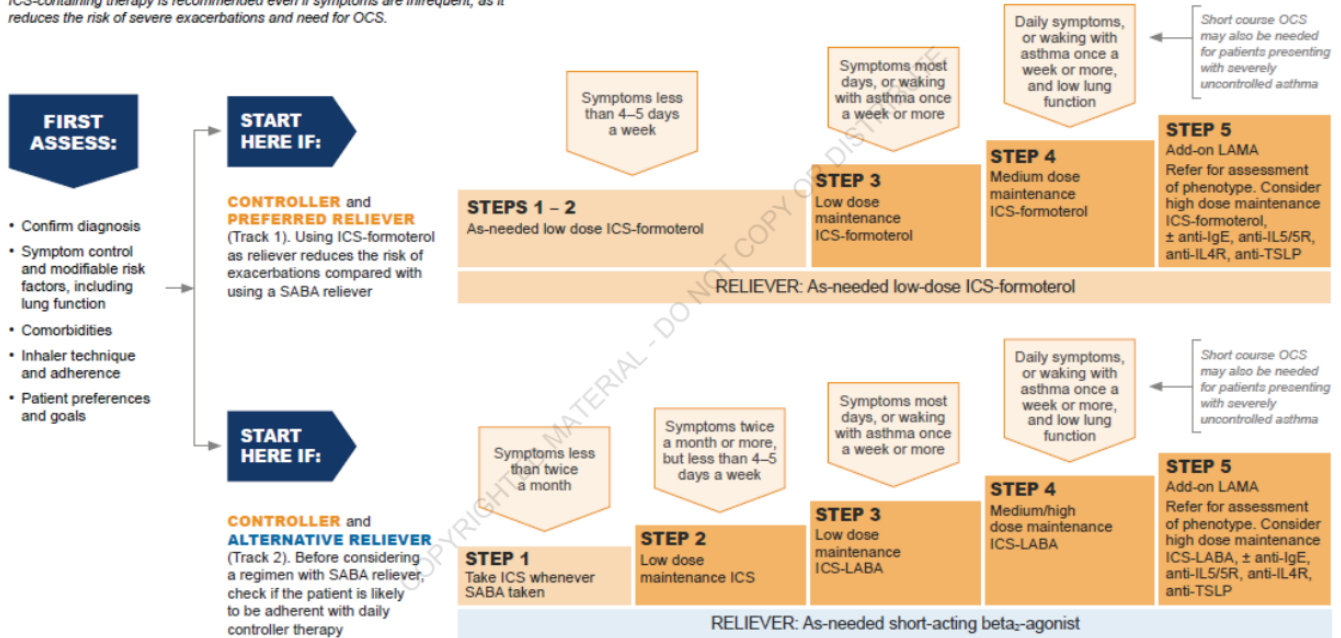
SPARSH CRITICAL CARE

Appendix:4

Box 3-4Bi. Selecting initial controller treatment in adults and adolescents with a diagnosis of asthma (V1)

STARTING TREATMENT in adults and adolescents with a diagnosis of asthma

Track 1 is preferred if the patient is likely to be poorly adherent with daily controller. ICS-containing therapy is recommended even if symptoms are infrequent, as it reduces the risk of severe exacerbations and need for OCS.



ICS: inhaled corticosteroid; LABA: long-acting beta₂-agonist; LAMA: long-acting muscarinic antagonist; MART: maintenance and reliever therapy with ICS-formoterol; OCS: oral corticosteroids; SABA: short-acting beta₂-agonist. See Box 3-6, p.63 for low, medium and high ICS doses for adults and adolescents.

Source GINA 2022 Guidelines –Treatment in stable Asthma

Reference:

<https://ginasthma.org/wp-content/uploads/2022/07/GINA-Main-Report-2022-FINAL-22-07-01-WMS.pdf>

[Last accessed on 2023 Feb 28]

SPARSH CRITICAL CARE

Author	Supervised by	Version/Date	Review Date
Dr. Ch. Sundeep MD, IDCCM	Dr. Masood Mohammed MD,MRCP(UK),EDIC,FICCM(UK)	1.0/28-02-2023	28-02-2025