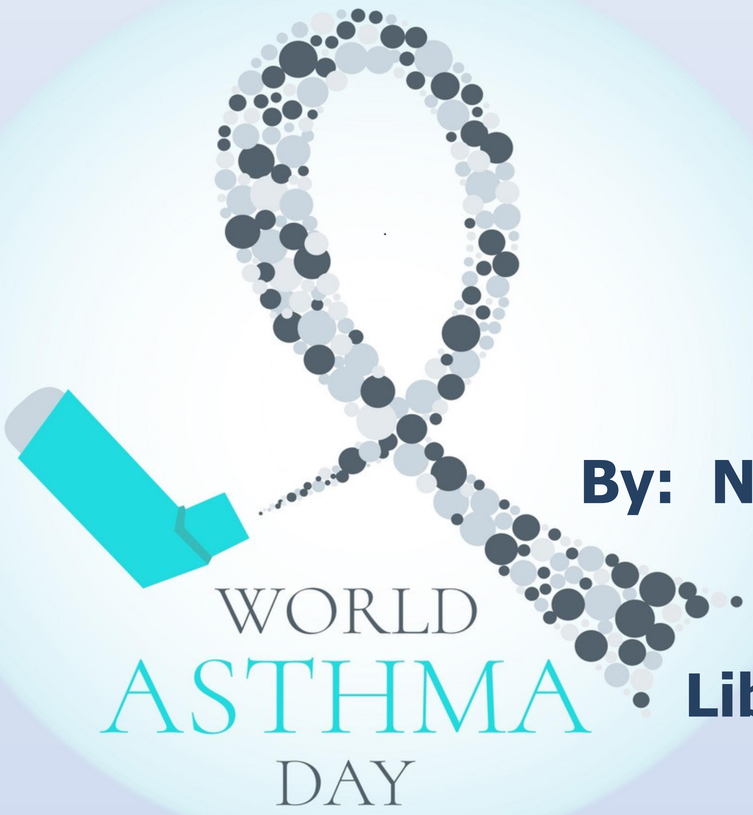

ACUTE ASTHMA

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What is Acute asthma?

Acute asthma also known as *Status asthmaticus* is an extreme form of an asthma exacerbation that remains unresponsive to initial treatment with bronchodilators and may range from mild to severe.(1) Patients may present with chest tightness, severe dyspnea with significant wheezing. It is considered a medical emergency, which can result in hypoxemia, hypercarbia and secondary respiratory failure. Patient education plays an important role in preventing recurrent attacks therefore early identification of exacerbations and adherence with therapy are of great importance.(2)

Risk Factors for developing Acute Asthma

- History of increased used of home bronchodilator treatment without improvement or effect
- History of previous ICU admissions, with intubation or mechanical ventilatory support.
- Asthma exacerbation despite recent or current use of corticosteroids.
- Poor socioeconomic living standards (poor compliance to therapy /access medical care)
- Frequent emergency department visits/hospitalization (implies poor control).
- Less than 10% improvement in peak expiratory flow rate(PEFR) from baseline despite treatment.(2)

Assessing Severity of Asthma

Moderate Asthma	Increasing symptoms of asthma PEF >50-75% (best or predicted) No features of acute severe asthma
Acute Severe Asthma	Any one of: ▪ PEF 33-50% (best or predicted) ▪ Respiratory rate ≥25/min ▪ Heart rate ≥110/min ▪ Inability to complete sentences in one breath
Life-threatening Asthma	Any one of the following in a patient with severe asthma:

Clinical Signs	*Measurements*
Altered conscious level	PEF <33% (best or predicted)
Exhaustion	SpO_2 <92%
Arrhythmia	PaO_2 < 8kPa
Hypotension	Normal $PaCO_2$ (4.6-6.0kPa)
Cyanosis	
Silent chest	
Poor respiratory effort	

Near-fatal Asthma	Raised $PaCO_2$ and/or requiring mechanical ventilation and raised inflation pressure. (3)

Managing Acute Asthma

	Moderate	Severe	Life-threatening
IMMEDIATELY ASSESS SEVERITY AND START BRONCHODILATOR	Give 4-12 puffs **Salbutamol 100mcg per activation**	Give 12 puffs **Salbutamol (100mcg per activation) via** pMDI plus spacer **OR** Use intermittent nebulisation if patient cannot breathe through spacer. Give **5mg nebule Salbutamol.** **START OXYGEN** Titrate to target oxygen saturation of 92-95%	Give 2 x 5mg nebules **Salbutamol** via continuous nebulisation **START OXYGEN** Titrate to target oxygen saturation of 92-95%
WITHIN MINUTES/1ST HOUR Reassess Severity	**CONTINUE BRONCHODIALTOR**		
	Repeat dose every 20-30mins for first hour if needed or sooner as needed	Repeat dose every 20 minutes for first hour (3 doses) or sooner as needed	Continuous nebullisation until dyspnea improves.
	IF POOR RESPONSE ADD IPRATROPIUM BROMIDE		
	8 Puffs (160mcg) via pMDI OR 500mcg nebule via nebuliser added to nebulised Salbutamol. Give dose every 20 minutes for first hour. Repeat every 4-6hrs as needed.		
	CONSIDER ADD-ON TREATMENT (e.g IV MAGNESIUM SULFATE OR IV AMINOPHYLLINE)		
	START SYSTEMIC CORTICOSTEROIDS Oral Prednisolone 37.5-50mg then continue 5-10days **OR, if oral route not possible** Hydrocortisone 100mg IV every 6hrs.		
REASSESS PATEINT'S RESPONSE TO TREATMENT	✓ Perform spirometry (if patient capable) ✓Repeat pulse oximetry ✓Check for dysnpnea while supine **DYSPNEA RESOLVED :-** Observation & Post-Acute care **SYMPTOMS & SIGNS UNRESOLVED :-** Continue Bronchodilator & add-on treatment **PERSISTING SEVERE OR LIFE-THREATENING ACUTE ASTHMA :-** Transfer to ICU. (4)		

References

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