Trust Guidelines

University Hospitals Plymouth NHS Trust

Guidance Title: Management of Acute Severe Asthma in adult inpatients

Issue Date			Version
February 2020			**1.1**
Accountabilities			
Author	Dr Georgina Davis, Dr Matthew Masoli, Dr Mitesh Patel		
Reviewed by (Group)	Reviewed by Duncan Cripps, Pharmacy Respiratory Clinical Governance group April 2017 / Respiratory Consultants / Chest Clinic Asthma nurses		
Approved by (Lead)	Dr Mitesh Patel, Dr David Waine (chair of Governance group)		
Links to other documents			
British Thoracic Society Guidelines: https://www.brit-thoracic.org.uk/standards-of-care/guidelines/ Preceding version: Dr P Hughes Acute severe asthma in adults			
Version History			
1.0	July 2017	Guideline created	
1.1	February 2020	Guideline reviewed - unchanged	
Last Approval			**Due for Review**
February 2020			July 2023

This guideline has been registered with the Trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt contact a senior colleague. Caution is advised when using guidelines after the review date or outside of the Trust.

This guideline is intended to be used for adult in-patients with acute severe asthma

Authors: G Davis, M Masoli & M Patel. Reference: BTS Asthma Guideline 2016 & P Hughes Asthma Guideline 2008
Please see https://www.brit-thoracic.org.uk for more info

Management of acute severe asthma in adults

Clinical features: Severe breathlessness, tachypnoea, tachycardia, silent chest, cyanosis or collapse.
None of these singly or together is specific and their absence does not exclude a severe attack

Moderate Asthma

- ☐ Increasing symptoms
- ☐ PEF >50% best or predicted
- ☐ No features of acute severe asthma

Acute Severe Asthma

If *ANY* of the following;

- ☐ PEF 33-50% best or predicted
- ☐ RR ≥ 25/min
- ☐ HR ≥110/min
- ☐ Inability to complete sentences in one breath

Life Threatening Asthma

If *ANY* of the following;

- ☐ PEF < 33% best or predicted
- ☐ SpO_2 <92%
- ☐ PaO_2 <8 kPa or normal $PaCO_2$ (4.6-6.0 kPa)
- ☐ Silent chest
- ☐ Cyanosis
- ☐ Poor respiratory effort
- ☐ Arrhythmia
- ☐ Exhaustion, altered conscious level
- ☐ Hypotension

Patients with severe or life threatening features may not be distressed

- ☐ ↑ $PaCO_2$ indicates *near fatal asthma*

All patients

Investigations

- ☐ Peak flow (PEF)
- ☐ Pulse oximetry
- ☐ ABG If sats <92% or clinical concern
- ☐ Consider CXR
- ☐ ECG
- ☐ Check theophylline level (if on oral treatment)

Immediate treatment

- ☐ Oxygen - aim sats 94-98%
- ☐ Nebulised salbutamol 2.5-5mg (via O_2 driven nebuliser)
- ☐ Prednisolone 40mg PO stat & OD
  - If on maintenance prednisolone, increase to a minimum dose of 40mg OD
  - Standard prednisolone tablets are dispersible in water if difficulty swallowing
  - Hydrocortisone 100mg stat IV & 6 hourly if oral route unavailable

Monitoring

- Repeat PEF 15-30mins after starting treatment & at least four times daily until stable
- Repeat ABG within 1 hour of starting treatment if initial PaO_2 <8, $PaCO_2$ normal/raised or patient deteriorating

Acute Severe Asthma or failure to improve with immediate treatment

Treatment *in addition* to the above;

- ☐ Back to back/repeated nebulised Salbutamol 2.5mg
- ☐ Nebulised Ipratropium Bromide 500 micrograms 4-6hrly
- ☐ IV Magnesium Sulphate (please see over for dosing instructions)

Monitoring - As above

- ☐ Senior review options: Medical Registrar (bleep 0308/via switch), ITU Registrar (bleep 0110/via switch), Consultant Physician, Respiratory Registrar/Consultant

Aminophylline infusion can be considered by senior clinicians- please see over for dosing instructions

Life Threatening Asthma or deteriorating despite above treatment

Urgent transfer to ITU accompanied by ITU registrar

Authors: G Davis, M Masoli & M Patel. Reference: BTS Asthma Guideline 2016 & P Hughes Asthma Guideline 2008
Please see https://www.brit-thoracic.org.uk for more info

Acute exacerbation of Asthma in Adults: Subsequent management of improving patients

Treatment

- ☐ Continue oxygen, aim sats 94-98%
- ☐ Ensure regular nebulisers prescribed and given; prescribe Salbutamol 2.5mg PRN in addition
- ☐ Monitor for & correct electrolyte disturbances (especially K+)

Document

- ☐ Patients usual best or predicted peak flow using chart provided
- ☐ Peak flow pre & post nebuliser therapy (contact Hexworthy or Honeyford ward if peak flow charts required)

Ensure

- ☐ Referral to asthma nurse specialist on 89173 or via SALUS (RINS icon)
- ☐ Admit to inpatient respiratory ward

Drug dosing

Magnesium

- Prescribe 2g IV magnesium sulphate in 50ml of 0.9% Saline & give over 20mins
- Only give if not already given in ED/Ambulance. Not for a second dose without senior discussion

Aminophylline

Dosing is calculated using patient's weight. To avoid excessive dosing in obese patients please consider dosing based on ideal rather than actual body weight

- **Loading dose**: 5mg/kg (250-500mg) in 100ml 0.9% saline over 30 mins (omit loading dose if on oral theophylline or patient has had theophylline/aminophylline during admission)

  E.g. a 70kg adult would receive 350mg Aminophylline in 100ml 0.9% saline over 30 mins

- **Maintenance infusion**: Prescribe 500mg Aminophylline in 500ml 0.9% saline (=1mg/ml concentration). Rate equivalent to 500 micrograms/kg/hr

  (E.g. a 70kg adult would have 35ml/hr)

- **Monitoring**: Check aminophylline levels daily (aiming initial target plasma concentration 10-20mg/L)

Best *or* predicted peak flow ________ L/min

or

☐ PF not recorded for clinical reasons (e.g worsens breathlessness)