

MANAGEMENT OF ACUTE ASTHMA IN ADULTS

CRITERIA FOR ADMISSION

any feature of a life threatening or near fatal attack.
any feature of a severe attack persisting after initial treatment
[PEFR > 75% best or predicted one hour after initial treatment → consider discharge]

TREATMENT of acute asthma

OXYGEN

Give O₂ to all hypoxaemic patients - target SpO₂ 94-98%.
Lack of pulse oximetry should not prevent the use of O₂.
In hospital, ambulance and primary care: drive nebs with oxygen.
[but don't withhold nebuliser treatment if O₂ not available]

β₂ AGONIST BRONCHODILATORS

Use high dose inhaled β₂ agonists first line: and ASAP.
Acute asthma with life threatening features → give neb β₂ agonists (O₂-driven)

STEROID THERAPY

Give steroids in adequate doses in all cases of acute asthma.
Continue prednisolone 40-50 mg daily for at least five days or until recovery.

IPRATROPIUM BROMIDE

Add nebulised ipratropium (0.5 mg 4-6 hourly) to β₂ treatment
for patients with acute severe or life threatening asthma
or poor initial response to β₂ therapy.

Routine prescription of antibiotics is not indicated for patients with acute asthma.

REFERRAL TO INTENSIVE CARE

Refer any patient:
1-requiring ventilatory support
2-with acute severe or life threatening asthma, failing to respond to therapy, evidenced by:
- deteriorating PEF
- persisting or worsening hypoxia
- hypercapnea
- ABG analysis showing □ pH or □ H⁺
- exhaustion, feeble respiration
- drowsiness, confusion, altered conscious state
-respiratory arrest

MANAGEMENT OF ACUTE ASTHMA IN children aged over 2 years

ACUTE SEVERE

SpO₂ <92% PEF 33-50%
Can't complete sentences or too breathless to talk or feed
Pulse >125 (>5 years) or >140 (2 to 5 years)
Respiration >30 (>5 years) or >40 (2 to 5 years)

LIFE THREATENING

SpO₂ <92% PEF <33-50% best or predicted
Hypotension
Silent chest
Exhaustion
Cyanosis
Confusion
Poor respiratory effort
Coma

CRITERIA FOR ADMISSION

β₂ agonists should be given as first line treatment.
Increase β₂ agonist dose by two puffs every two minutes according to response up to ten puffs.
Children not improved after 10 puffs of β₂ agonist → refer to hospital.
Give further bronchodilator PRN whilst awaiting transfer
Give O₂ and β₂ neb during the ambulance journey.

Children with severe or life threatening asthma → transfer to hospital urgently

Consider intensive inpatient treatment for children with
SpO₂ <92% on air after initial bronchodilator treatment.

The following clinical signs should be recorded:

Pulse rate - increasing tachycardia generally denotes worsening asthma; a fall in heart rate in life threatening asthma is a pre-terminal event

Respiratory rate and degree of breathlessness - ie too breathless to complete sentences in one breath or to feed

Use of accessory muscles of respiration - best noted by palpation of neck muscles

Amount of wheezing - which might become biphasic or less apparent with increasing airways obstruction

Degree of agitation and conscious level - always give calm reassurance

**NB Clinical signs correlate poorly with the severity of airways obstruction.
Some children with acute asthma do not appear distressed.**

TREATMENT of acute asthma

OXYGEN

Children with life threatening asthma or SpO₂ <94% should receive high flow oxygen via a tight fitting face mask or nasal cannula at sufficient flow rates to achieve normal saturations.

β₂ AGONIST BRONCHODILATORS

Inhaled β₂ agonists are the first line treatment for acute asthma

A pMDI + spacer is the preferred option in mild to moderate asthma.

Stop LABAs when short-acting β₂ needed more than 4-hourly.

STEROID THERAPY

Give prednisolone early in acute asthma attacks.

20mg prednisolone for ages 2 to 5 years and 30-40 mg for children >5 years.

[Those already on maintenance steroid tablets → 2 mg/kg. Max 60 mg]

- Repeat the dose in children who vomit and consider IV steroids
- 3 days is usually sufficient [but tailor to number of days needed for recovery].

Weaning unnecessary unless the course > 14 days.

OTHER THERAPIES

If symptoms are refractory to initial β₂ agonist treatment, add ipratropium bromide (250 mcg/dose mixed with the nebulised β₂ agonist solution).

Repeated doses of ipratropium bromide should be given early to treat children poorly responsive to β₂ agonists.

Aminophylline is not recommended in children with mild to moderate acute asthma

Do not give antibiotics routinely in the management of acute childhood asthma.

MANAGEMENT OF ACUTE ASTHMA IN children aged UNDER 2 years

The assessment in early childhood can be difficult

Intermittent wheezing attacks are usually due to viral infection and the response to asthma medication is inconsistent.

The differential diagnosis of symptoms includes:

- aspiration pneumonitis
 - pneumonia
 - bronchiolitis
 - tracheomalacia
 - complications of underlying conditions such as congenital anomalies and cystic fibrosis
- NB - Prematurity and low birth weight = risk factors for recurrent wheezing

TREATMENT of acute asthma

β₂ AGONIST BRONCHODILATORS

Oral β₂ agonists are not recommended for acute asthma in infants.

For mild to moderate acute asthma, a pMDI+spacer is advised.

STEROID THERAPY

Consider steroid tablets in infants early in the management of moderate to severe episodes of acute asthma in the hospital setting.

Consider inhaled ipratropium bromide + inhaled β₂ agonist for more severe symptoms.

ACUTE ASTHMA IN PREGNANCY

Give drug therapy for acute asthma as for the non-pregnant patient, including systemic steroids and magnesium sulphate.

Acute severe asthma in pregnancy is an emergency and should be treated vigorously in hospital

Give high flow O2 asap. Target sats 94-98%.

Continuous fetal monitoring is recommended for severe acute asthma