ACUTE SEVERE ASTHMA IN CHILDREN

ASSESSMENT FOR SEVERITY

MILD OR MODERATE ASTHMA

A. Breathlessness
B. Feeding difficulty
C. Interrupted speech
D. O2 saturated ≧ 92%
E. PEF > 50%

SEVERE ACUTE ASTHMA

A. Unable to talk
B. Unable to feed
C. Using accessory neck muscles
D. O2 saturated < 92%
E. PEF 40- 50%

LIFE THREATENING ASTHMA

A. Poor respiratory effort
B. Exhaustion
C. Silent chest
D. Agitation, drowsiness, or confusion
E. O2 saturated < 92%
F. PEF < 40%

1. Nebulised Salbutamol

For children < 5 years 2.5 mg in ml NS over 5-7 minutes

For children ≧ 5 years 5mg in ml NS over 5-7 minutes

2. OR Inhaled Salbutamol (MDI) 4-10 puffs via spacer or facemask
3. OR S.C adrenaline 1:10,000, Give 0.1mg/kg body weight,
4. 1/2 – 1 hour (three doses)

Reassess after one hour

Adequate response

Consider nebulized Salbutamol 1 – 4 hourly
Add oral prednisolone:
For children < 5 years 20 mg
For children ≧ 5 years 40 mg
Parent education
Consider discharge
Treatment may need to be considered for 2 days

Poor response

ADMIT, Preferably to high care or ICU

Give Oxygen 6-10 L/min via nasal prongs or face mask
Give nebulised Salbutamol
For children < 5 years 2.5 mg in ml NS over 5-7 minutes
For children ≧ 5 years 5mg in ml NS over 5-7 minutes
Give hydrocortisone IV
For children < 5 years 50 mg (methyl prednisolone 20 mg)
For children ≧ 5 years 100 mg (methyl prednisolone 40 mg)

Reassess within 30 – 60 minutes

Adequate response

Poor response

Add to nebulised Salbutamol
Ipratropium bromide 0.25mg nebulized every 20 -30 min
Increase IV hydrocortisone to 4mg/kg body weight
Consider IV Salbutamol 15mg/kg every 10 min
Consider IV Mg SO4 = 50mg/kg every 20 min
Consider blood gases and CXR

Reassess after 1 – 2hours

Adequate response

Poor response

Consider ICU or mechanical ventilation

MANAGEMENT OF ACUTE ASTHMA

A. Humidified oxygen 6 – 8 L/min via face mask or nasal prongs
B. Hydration
C. Nebulized Salbutamol 2.5 mg (for children < 5 years) & 5 mg (for children > 5 years) in 3 ml normal saline to be nebulized over 5 minutes using face mask
D. OR Salbutamol by MDI 6 – 8 puffs via spacer
E. OR Epinephrine 1:10,000, subcutaneously 0.1mg/kg body weight
F. Reassess for: restlessness, wheeze, RR, PR and air entry
G. If no response, repeat (C) after 1/2 hour
H. Reassess for: restlessness, wheeze, RR, PR and air entry after another 1/2 hour
I. If no response, repeat (C) and start steroids (Hydrocortisone 100 – 300 mg IV), start prednisolone 2 – 4 mg/kg body weight, continue prednisolone 2 mg/kg /day for 3 days
J. A child who does not respond to 3 doses of nebulized Salbutamol, should be consider as acute severe asthma (status asthmaticus)
K. Continuous monitoring

MANAGEMENT OF ACUTE SEVSERE ASTHMA / LIFE THREATENING ASTHMA

- Admit to ICU or high care area (Continuous monitoring)
- Humidified Oxygen at 6 – 8 L /min
- Continuous nebulization of Salbutamol nebulized solution 0.25 mg /kg/hr
- IV Hydrocortisone (2-4 mg /kg /dose 4 hourly)
- Nebulized ipratropium hydrochloride (15 mcg in 3 ml saline over 5 – 7 minutes) 4 -6 hourly
- Subcutaneous adrenaline (0.5 ml) (1:10,000) 1/2 – 1 hourly (three doses)
- IV magnesium sulphate (50 – 100 mg/kg)
- Consider Isoprenaline infusion
- Reassess half – hourly
- Consider transfer to the ICU
- Consider mechanical ventilation