Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive
Clinical Strategy and Programmes Division

PAEDIATRICS

FACULTY OF PAEDIATRICS
ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Childhood Asthma

BACKGROUND
- Asthma affects 15% of children
- Incidence is rising
- "Hygiene hypothesis"
- Clinical diagnosis before 6 years of age

DIAGNOSIS
- History of variable respiratory symptoms with typical patterns:
  - ✓ Worse at night or early morning
  - ✓ Triggered by cold, exercise, allergen exposure, laughter, smoke, viral infection
  - ✓ Vary over time and in intensity
- Variable expiratory outflow limitation
  - ✓ Spirometry/PEF with reversibility testing

GENERAL ASTHMA MANAGEMENT
- Pharmacological: Stepwise approach as per **BTS Guidelines**
- Non-pharmacological: Allergen reduction, smoking cessation
- Monitoring control: Peak flow diary, written asthma action plan

ALLERGEN REDUCTION
- Avoid smoking
- Reduce house dust mite exposure
  - ✓ Remove carpet
  - ✓ Wash bed linen at high temperature
  - ✓ Good ventilation
  - ✓ Remove soft toys
  - ✓ Cover mattresses
  - ✓ Avoid duvets

REFERENCES

- GINA Guidelines 2014
- BTS/SIGN Asthma Guideline 2014
- Asthma Society of Ireland website

HISTORY
- Cough
- Wheeze
- Shortness of breath
- Chest tightness
- Pattern of symptoms
- Trigger factors
- Treatments tried
- Family history of atopy
- Parental understanding

EXAMINATION
- Centiles
- Assess mental status and ability to finish sentences
- Respiratory rate, pulse, BP
- Use of accessory muscles
- Chest hyperinflation
- Wheeze – inspiratory, expiratory or both

INVESTIGATIONS
- Chest X-ray only if severe
- Pulse oximetry
- Blood gases if life-threatening
- PEFR unhelpful in acute asthma

TREATMENT OF EXACERBATION
- Oxygen if sats <90%
- Prednisolone 1mg/kg/day for 3-5 days
- Salbutamol via spacer every 15 minutes
  - ✓ 6 puffs if <6 years old
  - ✓ 10-12 puffs if >6 years
- Refer to hospital if poor response

TAKE HOME MESSAGES
- Prevalence is increasing
- Education about background control is vital
- Age-appropriate inhalers & correct technique important
- Written asthma action plan

REFERRAL
- Emergency department
  - ✓ Features of severe or life-threatening asthma
- General/Respiratory Paediatrician
  - ✓ Diagnostic uncertainty
  - ✓ Symptoms from birth
  - ✓ Failure to thrive
  - ✓ Nasal polyps
  - ✓ ICS >400µg/day
  - ✓ Frequent oral corticosteroids
  - ✓ Asthma & food allergy
  - ✓ Side effects of medication

ACUTE ASTHMA ATTACK
- Severe
  - ✓ SpO_2 <92%
  - ✓ PEF 33-50% best or predicted
  - ✓ Can't complete sentences or feed
  - ✓ Tachycardia
  - ✓ Respiratory rate >30 breaths/min (>5 years) OR >40 breaths/min (2-5 years)
- Life-threatening
  - ✓ SpO_2 <92%
  - ✓ PEF <33% best or predicted
  - ✓ Silent chest
  - ✓ Cyanosis
  - ✓ Poor respiratory effort
  - ✓ Hypotension
  - ✓ Exhaustion
  - ✓ Confusion

BACKGROUND CONTROL
- Number of steroid courses/ ER visits/GP visits
- Nocturnal and exercise-induced symptoms
- Daily symptoms
- School days missed
- Frequent β_2-agonist use

INHALER DEVICES
- 0-3 years: Spacer & mask
- 4+ years: Spacer & mouthpiece