Management of acute asthma in children in general practice

Age 2–5 years

ASSESS AND RECORD ASTHMA SEVERITY

Moderate asthma	Acute severe asthma	Life-threatening asthma
• SpO_2 ≥92% • Able to talk • Heart rate ≤140/min • Respiratory rate ≤40/min	• SpO_2 <92% • Too breathless to talk • Heart rate >140/min • Respiratory rate >40/min • Use of accessory neck muscles	SpO_2 <92% plus any of: • Silent chest • Poor respiratory effort • Agitation • Confusion • Cyanosis
	• Oxygen via facemask to maintain SpO_2 94–98% if available	
• β_2 bronchodilator: - via spacer ± facemask* • Consider oral prednisolone 20 mg	• β_2 bronchodilator - via nebuliser (preferably oxygen-driven), salbutamol 2.5 mg - *or*, if nebuliser not available, via spacer* • Oral prednisolone 20 mg	• β_2 bronchodilator with ipratropium: - via nebuliser (preferably oxygen-driven), salbutamol 2.5 mg and ipratropium 0.25 mg every 20 minutes - *or*, if nebuliser and ipratropium not available, β_2 bronchodilator via spacer* • Oral prednisolone 20 mg *or* IV hydrocortisone 50 mg if vomiting
	Assess response to treatment 15 mins after β_2 bronchodilator	
IF POOR RESPONSE ARRANGE ADMISSION	**IF POOR RESPONSE REPEAT β_2 BRONCHODILATOR AND ARRANGE ADMISSION**	**REPEAT β_2 BRONCHODILATOR VIA OXYGEN-DRIVEN NEBULISER WHILST ARRANGING IMMEDIATE HOSPITAL ADMISSION**

GOOD RESPONSE

- Continue β_2 bronchodilator via spacer or nebuliser, as needed but not exceeding 4 hourly
- **If symptoms are not controlled repeat β_2 bronchodilator and refer to hospital**
- Continue prednisolone until recovery (minimum 3-5 days)
- Arrange follow-up clinic visit within 48 hours
- Consider referral to secondary care asthma clinic if 2nd attack within 12 months.

POOR RESPONSE

- Stay with patient until ambulance arrives
- Send written assessment and referral details
- Repeat β_2 bronchodilator via oxygen-driven nebuliser in ambulance

LOWER THRESHOLD FOR ADMISSION IF:

- Attack in late afternoon or at night
- Recent hospital admission or previous severe attack
- Concern over social circumstances or ability to cope at home

NB: If a patient has signs and symptoms across categories, always treat according to their most severe features

Age >5 years

ASSESS AND RECORD ASTHMA SEVERITY

Moderate asthma	Acute severe asthma	Life-threatening asthma
• SpO_2 ≥92% • Able to talk • Heart rate ≤125/min • Respiratory rate ≤30/min • PEF ≥50% best or predicted	• SpO_2 <92% • Too breathless to talk • Heart rate >125/min • Respiratory rate >30/min • Use of accessory neck muscles • PEF 33–50% best or predicted	SpO_2 <92% plus any of: • Silent chest • Poor respiratory effort • Agitation • Confusion • Cyanosis • PEF <33% best or predicted
	• Oxygen via facemask to maintain SpO_2 94–98% if available	
• β_2 bronchodilator: - via spacer* • Consider oral prednisolone 30–40 mg	• β_2 bronchodilator - via nebuliser (preferably oxygen-driven), salbutamol 5 mg - *or*, if nebuliser not available, via spacer* • Oral prednisolone 30–40 mg	• β_2 bronchodilator with ipratropium: - via nebuliser (preferably oxygen-driven), salbutamol 5 mg and ipratropium 0.25 mg every 20 minutes - *or*, if nebuliser and ipratropium not available, β_2 bronchodilator via spacer* • Oral prednisolone 30–40 mg *or* IV hydrocortisone 100 mg if vomiting
	Assess response to treatment 15 mins after β_2 bronchodilator	
IF POOR RESPONSE ARRANGE ADMISSION	**IF POOR RESPONSE REPEAT β_2 BRONCHODILATOR AND ARRANGE ADMISSION**	**REPEAT β_2 BRONCHODILATOR VIA OXYGEN-DRIVEN NEBULISER WHILST ARRANGING IMMEDIATE HOSPITAL ADMISSION**

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LOWER THRESHOLD FOR ADMISSION IF:

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NB: If a patient has signs and symptoms across categories, always treat according to their most severe features

*** β_2 bronchodilator via spacer given one puff at a time, inhaled separately using tidal breathing; according to response, give another puff every 60 seconds up to a maximum of 10 puffs**

Reproduced from SIGN 158 British guideline on the management of asthma 2019 www.sign.ac.uk

FIGURE 2
Management of acute asthma in children in general practice[19]