Managing difficult-to-treat and severe asthma in children 6–11 years

Read first

- Assess current asthma symptom control and risk factors
- Assessing and correcting inhaler technique
- Adjusting treatment for children 6–11 years

Recommendation

If a child's asthma is not well controlled on medium-dose ICS-LABA, investigate thoroughly.

Assess for, and correct, common causes of poor control (poor adherence, incorrect inhaler technique, exposure to avoidable triggers (e.g. cigarette smoke, allergens, irritants, infections, moulds/dampness, indoor/outdoor air pollution), psychosocial factors affecting the family's or child's ability to manage asthma (e.g. life events, financial problems, or mental health conditions).

Assess salbutamol use. Refer patients with marked overuse to a severe asthma clinic (if available) or respiratory physician for supervised reduction.

Confirm the diagnosis.

Assess comorbid conditions that could be contributing to asthma symptoms (e.g. rhinosinusitis, obesity, gastroesophageal reflux disease, obstructive sleep apnoea, inducible laryngeal obstruction) and whether respiratory symptoms may be caused by an alternative diagnosis.

Sources & rationale

Recommendation type: Adapted from GINA

Among patients with asthma that is uncontrolled despite having been prescribed medium-dose maintenance ICS-LABA or higher-intensity treatment, many can achieve good control after correcting common causes. A minority have severe asthma, which is non-responsive to high doses of ICS and requires specialist treatment with monoclonal antibody therapy. [GINA 2025]

References

Global Initiative for Asthma (GINA). Global Strategy for Asthma Management and Prevention, 2025. Available from: www.ginasthma.org

Notes

Table

Low, medium and high ICS doses in children 6–11 years

Active ingredient	Total daily dose (microg)		
	Low	Medium	High
Fluticasone propionate	100	<8 years: >100–200	<8 years: >200

	(50 twice daily)	(e.g. 100 twice daily)	
		8–11 years: >100–250 (e.g. 100 twice daily or 125 twice daily)	8–11 years: >250
Ciclesonide	80	160	>160
Budesonide	100–200	>200–400	>400
Beclometasone (extra-fine particle)	50–100	>100–200	>200

Additional information

ICS: inhaled corticosteroid;

[ ] Options recommended for first-line use in children, based on current evidence for efficacy and safety

Options not recommended as first-line treatment in children due to delivery device or concerns about systemic effects including potentially greater effects on growth

Recommendation

If good asthma control cannot be achieved despite treatment with medium-dose ICS-LABA, refer to an accredited respiratory laboratory for spirometry, assess blood eosinophil level, and arrange specialist referral for assessment.

This recommendation applies after confirming good adherence to ICS and correct inhaler technique, and after assessing and managing other risk factors.

Refer to a specialist, regardless of spirometry findings and blood eosinophil count.

Sources & rationale

Recommendation type: Consensus recommendation

Resources

Thoracic Society of Australia and New Zealand's list of accredited respiratory laboratories.

Notes

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Suitable specialists for referral include paediatric respiratory physicians, general paediatricians with a special interest in asthma, or allergists.

Recommendation

If immediate referral is not available for a child with poorly controlled asthma despite daily maintenance medium dose ICS-LABA, consider add-on treatment while waiting.

Options include:

- montelukast (if not already trialled)
- tiotropium.

Continue ICS-LABA while trialling add-on treatment for 8–12 weeks. Stop the treatment if ineffective after 12 weeks or adverse effects occur.

Alert Montelukast TGA-approved product information and consumer medicine information carry a warning about potential neuropsychiatric adverse effects. Counsel parents about risks (see TGA safety alert).

TGA safety alert

Sources & rationale

Recommendation type: Consensus recommendation

Tiotropium added to ICS-LABA reduces the risk of exacerbations and achieves a small improvement in lung function in children aged 6–11 years.[Rodrigo 2017] Benefits of tiotropium in children do not appear to depend on asthma phenotype identified by IgE or eosinophil count.[Szefler 2019]

References

Australian product information – Spiriva Respimat tiotropium solution for inhalation (with dose counter). [Revised 17 May 2024] Therapeutic Goods Administration (www.ebs.tga.gov.au)

Rodrigo GJ, Neffen H. Efficacy and safety of tiotropium in school-age children with moderate-to-severe symptomatic asthma: A systematic review. Pediatr Allergy Immunol 2017; 28: 573-578.

Szefler SJ, Vogelberg C, Bernstein JA, et al. Tiotropium Is efficacious in 6- to 17-year-olds with asthma, independent of T2 phenotype. J Allergy Clin Immunol Pract 2019; 7: 2286-2295 e2284.

Notes

Tiotropium delivered by mist inhaler is approved by TGA as add-on maintenance bronchodilator treatment in patients aged 6 years and older with moderate-to-severe asthma.[Australian PI: tiotropium] Other tiotropium devices are not approved for asthma.

Practice point

Depending on the individual's age and developmental stage, a specialist might consider prescribing a regimen based on anti-inflammatory reliever (as-needed low-dose budesonide–formoterol or maintenance-and-reliever therapy), which are currently not approved for children younger than 12 years. Older children who may benefit include those with poor adherence to maintenance ICS, and those with asthma that is poorly controlled despite management with fixed-dose ICS-LABA.

Practice point

A specialist might prescribe a monoclonal antibody therapy for a child with severe asthma.

Alert Children on monoclonal antibody therapy should not reduce or stop their other asthma medicines, except in consultation with the specialist

Resources

National Asthma Council Australia's information paper on monoclonal antibody therapy for severe asthma
https://www.nationalasthma.org.au/living-with-asthma/resources/health-professionals/information-paper/monoclonal-antibody-therapy-for-severe-asthma

Practice point

After monoclonal antibody therapy is initiated by the specialist, doses are either administered in primary care (dupilumab or omalizumab), or administered by the parent of carer (dupilumab).

Practice point

Children using monoclonal antibody therapy should continue to take ICS-based treatment, even if they achieve good asthma control.

Practice point

For children receiving monoclonal antibody therapy, continue to monitor adherence to maintenance ICS-based treatment, inhaler technique, symptom control, exacerbations, oral corticosteroid use, adverse effects, comorbidities (including those that may respond to biologic therapy, such as eczema and nasal polyps), mental health and patient satisfaction.

Practice point

For children with a marked response to monoclonal antibody therapy, the specialist may reduce or stop maintenance oral corticosteroid treatment, and may reduce the ICS-LABA dose.