Specialist assessment and treatment for severe asthma in children 6–11 years

Severe asthma has been defined as asthma that remains uncontrolled despite high-dose ICS-LABA (with correct inhaler technique and good adherence) or maintenance oral corticosteroids, or that requires such treatment to prevent it becoming uncontrolled.[Chung 2014] However, these are not recommended long-term treatments.

Alert Long-term high-dose ICS treatment and maintenance systemic corticosteroid treatment should be avoided

Asthma is uncontrolled if the patient experiences frequent symptoms, activity limitation, night waking, or has exacerbations that require systemic corticosteroid treatment.

Information on assessing and reviewing asthma in children 6–11 years

Specialist investigations to guide severe asthma treatment

Specialist investigations for a patient referred for suspected severe asthma might include some or all of the following:

- fractional exhaled nitric oxide (FeNO)
- blood eosinophil count
- sputum eosinophil count (rarely performed)
- other blood tests
- allergy testing for clinically relevant allergens: skin prick test or specific IgE
- chest X-ray or high-resolution chest computed tomography
- CT sinuses (if symptoms suggest chronic rhinosinusitis).

Monoclonal antibody therapy

Monoclonal antibody therapy is a specialist treatment for some children with severe allergic or eosinophilic asthma that does not respond adequately to treatment with ICS-based treatment.

Two monoclonal antibody therapies are available in Australia for treatment in children 6–11 years:

- Dupilumab (anti-IL-4Rα) is approved by TGA as add-on treatment for patients ≥6 years with moderate to severe asthma with type 2 inflammation (elevated eosinophils or elevated FeNO) that is inadequately controlled despite other maintenance treatment.[Australian PI dupilumab] In a randomised controlled trial in children 6–11 years with eosinophilic/Type 2 asthma, dupilumab reduced severe exacerbation rate and increased lung function.[Bacharier 2021]
- Omalizumab (anti-IgE) is approved by TGA as add-on therapy to improve asthma control in in children aged 6 to <12 years with severe allergic asthma who have documented exacerbations despite daily high dose inhaled corticosteroids, and who have immunoglobulin E levels corresponding to the recommended dose range.[Australian PI omalizumab] Omalizumab reduces exacerbation rates and can enable reduction of ICS doses in children 6–12 years. [Chipps 2017]

For PBS reimbursement (omalizumab only) patients must meet strict criteria for uncontrolled asthma despite optimised treatment, criteria for allergic status (omalizumab and dupilumab) and/or for eosinophilia (dupilumab), and must be treated by a specialist (paediatric respiratory physician, clinical immunologist, allergist, or paediatrician or general physician experienced in the management of patients with severe asthma in consultation with a respiratory physician).

References

Australian product information – Dupixent (dupilumab) solution for injection. [Revised 5 July 2024] Therapeutic Goods Administration (www.ebs.tga.gov.au)

Australian product information – Xolair (omalizumab) solution for injection and powder for solution for injection. [Revised 4 September] Therapeutic Goods Administration (www.ebs.tga.gov.au)

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Chipps BE, Lanier B, Milgrom H, et al. Omalizumab in children with uncontrolled allergic asthma: Review of clinical trial and real-world experience. J Allergy Clin Immunol 2017; 139: 1431-1444.

Chung KF, Wenzel SE, Brozek JL, et al. International ERS/ATS guidelines on definition, evaluation and treatment of severe asthma. Eur Respir J 2014; 43: 343-373.

Resources

National Asthma Council Australia's information paper on monoclonal antibody therapy for severe asthma