Flow Chart

Wheeze in a child ≥ 12 months of age

- History of foreign body inhalation or choking?
  - No
  - Chronic respiratory or cardiac illness (other than asthma) or immunocompromise?
    - No
    - Life-threatening respiratory illness requiring IV therapy?
      - No
      - Duration of illness ≥ 5 days?
        - No
        - Treat with salbutamol (see asthma guideline)
          - Improves
          - Continue clinical management without CXR
        - Yes
      - Yes
      - CXR if clinically indicated.
        - In many instances a CXR will still not be required.
        - If unsure discuss with consultant.
    - Yes
      - Deteriorates, or no fails to improve after 4 hours of treatment with salbutamol
Background

Asthma and preschool wheeze are common childhood conditions both in New Zealand and internationally. It is estimated that approximately 30% of children have episodes of wheeze or asthma at some stage. The term “preschool wheeze” encompasses those preschool children aged ≥1 year who present with wheeze in association with a viral illness, often labelled as “viral induced wheeze.” Annually more than 600 children, aged ≥2 years, present to the Children’s Emergency Department (CED) at Starship Hospital with asthma or preschool wheeze. Currently one quarter of these children have a chest X-ray (CXR) performed as part of their assessment, often for very limited clinical benefit.

Retrospective reviews of CXR use in acute asthma and preschool wheeze suggest that in most circumstances this investigation does not contribute to diagnosis or management. In addition, it is recognised that performing a CXR on children with asthma and preschool wheeze may be potentially harmful. A CXR delivers a dose of radiation, uses limited healthcare resources and delays patient management. Furthermore, performing a CXR in acute asthma and preschool wheeze often leads to inappropriate use of antibiotics. Children with asthma and preschool wheeze commonly have asymmetric auscultatory findings (including crepitations) and opacities found on CXR. However these children typically have a viral illness, and the opacifications frequently result from atelectasis rather than pneumonic changes, making antibiotic administration unnecessary. Clinical and/or radiological follow up should be arranged for patients with recurrent or persistent symptoms.

This guideline has been designed by combining information from small pilot studies and reaching consensus among the specialists in Children’s ED, General Paediatrics and Paediatric Respiratory Medicine at Starship.
We will continue to collect further data on the investigation, management and outcome of wheezy children presenting to CED (including CXR use).

References


CHEST X-RAY IN ACUTE WHEEZE


Tsai SL, Crain EF, Silver EJ, Goldman HS. What can we learn from chest radiographs in hypoxemic asthmatics? Pediatr Radiol. 2002;32(7):498-504
