Queensland Paediatric Emergency Care

Skill Sheets

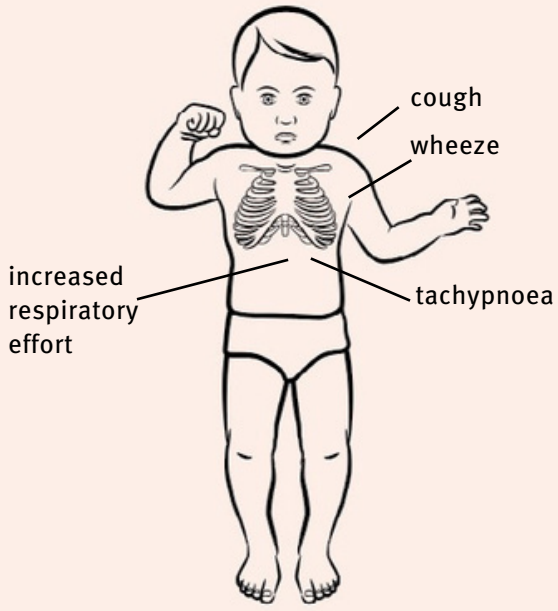
Pre-School Wheeze - Common Emergency Presentations

Pre-School Wheeze is sometimes also referred to as Reactive Airways Disease (RAD). It can be caused by intercurrent viral infections or other environmental triggers, which can cause bronchospasm, increased mucous production and inflammation of the lower airway. This results in symptoms such as increased respiratory effort, tachypnoea and hypoxia. This skill sheet provides some guidance to help care for patients who present with Pre-School Wheeze to the Emergency Department. It complements the Guideline: Pre-school wheeze – Emergency management in children.

Age Affected

Pre-school wheeze occurs in children between 1 and 5 years of age (until their 6th birthday).

Pre-School Wheeze signs and symptoms*



*list not exhaustive

ALERT

Wheeze may be absent due to severe airway obstruction or extreme fatigue. A 'silent chest' (chest with little or no breath sounds) is a warning sign of life-threatening respiratory failure and impending respiratory arrest.

Intial Assesment of Severity of Pre-School Wheeze

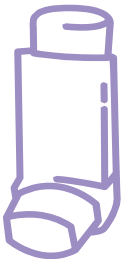
	Mild to Moderate:	Severe:	Life-threatening:
Behaviour	Can walk or move around	Agitated, restless or distressed	Altered conscious level/ exhaustion
Ability to talk/verbalise	Speaking in phrases	Unable to complete sentences in one breath due to dyspnoea	Unable to talk - Poor respiratory effort or agonal breathing
SpO2	SpO2 greater than 90% in room air	SpO2 less than 90% in room air	Spo2 less than 90% in room air +/- cyanosis
Respiratory distress	Mild to moderate respiratory distress	Significant respiratory distress +/- grunting	Soft or absent breath sounds

Pre-School Wheeze and Asthma

The pathology and natural progression of wheezing illnesses in pre-school children is variable and not fully understood. The term asthma is not used to describe a wheezing illness in pre-schoolers as there is insufficient evidence that the pathophysiology is similar to that of asthma in older children and adults. Many children with pre-school wheeze will not go on to develop asthma in later life.

Treatment

The management of Pre-School Wheeze focuses on using medications to relieve acute bronchospasm, alleviating lower airway inflammation and providing respiratory support in the form of high flow nasal therapy (HFNT), with or without oxygen. For more information on treatment and medication dosages in the treatment of Pre-School Wheeze refer to the 'Management' section of the Queensland Paediatric Emergency Care Guideline: Pre-school Wheeze - Emergency management in children.



Related Skill Sheets

- Respiratory Assessment
- Hydration Assessment
- Medication Administration: Salbutamol Metered Dose Inhaler
- Nasal High Flow Therapy (NHFT) using the AirvoTM 2

Related Videos

- Pre-School Wheeze
- Respiratory Assessment
- Hydration Assessment
- Medication Administration: Salbutamol Multi Dose Inhaler
- Nasal High Flow Therapy (NHFT) using the AirvoTM 2

Tips for caring for a child with Pre-School Wheeze:

- Ensure regular vital signs and respiratory observations are carried out and documented. Observations should be conducted hourly at a minimum, with the frequency increasing as indicated by clinical need. See the Queensland Health Paediatric Early Warning and Response System Tools page for the CEWT tool appropriate for use in your workplace. Discuss the need for patient individualised observation frequency with senior nursing staff and the treating medical officer.
- Review the child with the treating clinician who will assess the need for bronchodilators (eg. salbutamol). Many children will be commenced on burst therapy and prescribed a dose of salbutamol every 20 minutes for three doses. It is imperative that bronchodilators are given at the specified prescribed time. Once the burst is complete you should re-review with the treating clinician at agreed intervals. Many children improve after a salbutamol burst, however they may deteriorate if not regularly reviewed and the time between doses is stretched out too quickly.
- Keep a strict fluid balance chart to ensure an accurate depiction of the child's hydration status.
- Cluster nursing cares where possible. This reduces distress to the child and promotes rest.

Maintaining a good seal

- An essential component of effective treatment of Pre-School Wheeze is the effective administration of salbutamol.
- Most children between the ages of one and five will require a face mask to deliver the salbutamol via a spacer.
- Many children will find the face mask intimidating or scary. It is important that the child is involved in the administration of the medication where possible, and has the opportunity to examine the mask and the spacer prior to its use.
- Children with the capacity to be actively involved in their treatment can "help" by pressing down on the inhaler at the same time as the clinican or parent administering the medication.

Education and Discharge Planning

- Patient and carer education is a key component of an ED visit for Pre-School Wheeze.
- A comprehensive explanation of Pre-School Wheeze should be provided to the carer/s.
- Parents and carers should be observed to administer the salbutamol effectively prior to discharge.
- A discharge checklist is available in the Reactive Airway/Asthma Pathway. This checklist is helpful in ensuring all the key educational goals are met prior to discharge.

Link to: Pre-School Wheeze Video

Link to: Pre-School Wheeze Fact Sheet

Link to: Puffers and Spacers Fact Sheet

References:

Emergency Care of Children Working Group. (2021, May 5). Pre-school wheeze – Emergency management in children Queensland Paediatric Emergency Care (QPEC). Retrieved November 29, 2023 from https://www.childrens.health.qld.gov.au/for-health-professionals/queensland-paediatric-emergency-care-qpec/queensland-paediatric-clinical-guidelines/preschool-wheeze#section__related-documents.

National Asthma Council. (2023). Managing acute asthma in clinical settings. Retrieved November 29, 2023 from https://www.asthmahandbook.org.au/acute-asthma/clinical.

Queensland Health. (2016). Asthma/Reactive Airways Clinical Pathway. Queensland Health Intranet. Retrieved December 4, 2023 from https://qheps.health.qld.gov.au/__data/assets/pdf_file/0016/713014/658631.pdf

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