Information for Health Care Professionals on the Management of Preschool Wheeze

Preschool wheeze is defined as children aged between 1 and 5 years inclusive who have had a wheezing episode.
This information does not relate to bronchiolitis, which usually causes wheeze in the under 1 year old, or to children with recurrent viral infections in the absence of wheeze.

If a child has any features suggestive of an alternative diagnosis (see Table 1), they should be referred for specialist advice[1].

Failure to thrive
Unexplained clinical findings
Symptoms present from birth
Excessive vomiting or posseting
Severe upper respiratory tract infection
Persistent wet or productive cough
Family history of unusual chest disease
Nasal polyps

Table 1: Features suggestive of an alternative diagnosis:

The Case for Change:

Preschool wheeze is common, occurring in up to one third of all preschool children.
This group consumes a disproportionately high amount of healthcare resources compared to older children who wheeze.[2]
Over the last few years the number of children presenting to emergency department (ED) acutely with preschool wheeze has been growing. This is in contrast to the numbers attending ED for other respiratory conditions e.g. lower respiratory tract infection and bronchiolitis.[3]
It has been shown that improved education and support for self-management leads to reduced ED attendances, but these interventions are offered to this cohort in primary care less than 28% of the time.[4]
Parents and carers of children who have had episodes of preschool wheeze feel there is a lack of information and inadequate systems to help them care for their children.[5]

The accompanying proposed care pathway and SNOMED CT codes (Systematized Nomenclature of Medicine Clinical Terms) together with the supporting resources have been produced to address these concerns and ensure that children with preschool wheeze have access to standardised, high-quality care across the system and the country.

This document for health care professionals provides a summary of the broad treatment approaches as agreed by current evidence and expert opinion.

Classification and Coding:

Children with preschool wheeze can be classified into 2 main categories.[6] This distinction is useful for therapeutic strategy but should be periodically reassessed as it may change over time.[7]

Episodic Viral Wheeze:
SNOMED code description 276191000000107|Viral wheeze.
The child wheezes only with upper respiratory infections and is otherwise totally symptom free. If the episodes are mild, this group usually has an excellent prognosis with no increased risk of respiratory symptoms in later childhood.

Suspected Asthma:
SNOMED code description 394967008 |Suspected asthma (situation).
The child wheezes with upper respiratory infections and has 1 or more red flags features (see Table 2).

≥2 admissions* ever to hospital with wheeze
PICU/HDU ever (lifetime risk)
≥3 attendances to ED in last 12m
High reliever use (use of ≥3 MDI salbutamol inhalers per year)
Interval symptoms (will also wheeze with other triggers, such as exercise and allergen exposure)
TRACK score[7] <80

Table2: Red Flags

*Where an admission is an episode in which a patient is admitted due to their wheeze episode and stayed in hospital for 4 hours or more (this includes Acute Medical Units (AMU), clinical Decision Units/Children's Observation Units, short stay wards or similar, but excludes patients treated transiently before discharge from the Emergency Department (ED)).

Treatment options:

Treatment is guided by which category the child falls into. A child can move between categories over time and treatments should be adjusted accordingly.

No treatment has been shown to prevent progression of preschool wheeze to school age asthma, so treatment is determined by and frequency/severity of acute episodes.

All children with preschool wheeze should be offered the following treatment during an acute attack:

1. Intermittent bronchodilator treatment via a spacer to treat acute symptoms.
2. Prednisolone is not indicated and should not be offered to those who are well enough to remain at home or to many who are admitted to hospital. It may be of benefit in those who are admitted to hospital with the severe wheezy episodes.
3. Families should be offered education including (see accompanying resources):
    a. An explanation of the condition
    b. Training in inhaler technique
    c. Wheeze self-management plan.
4. A discussion around potential triggers in the home environment e.g. smoke exposure, air pollution and strategies to support reducing exposure.
5. All health care professionals should acknowledge the anxiety that families experience when their child is wheezy, and the impact that attacks of wheeze can have on the mental health of children and their families. Supportive care including measures such as giving families a contact telephone number and providing follow up calls, can significantly alleviate the frequency and severity of future episodes.

Additional Treatment Options for those children with Suspected Asthma

In addition to the above, the following interventions should be considered in those with Suspected Asthma:

1. A trial of continuous ICS should be considered in children with 1 or more red flags. Leukotriene receptor antagonists (LTRA) (e.g. Montelukast) can be considered when there is poor cooperation with inhalers or poor compliance.
    a. Trial of treatment: the duration of the trial will depend on the symptoms for which it was started. For example, if the purpose of the trial is for the treatment of interval symptoms, 3 months may be adequate to demonstrate a benefit. If the main symptoms are acute severe episodes, a longer trial over a winter season may be needed.
    b. Stop treatment.
    c. Review and restart treatment only if symptoms recur and there was an initial benefit seen in step 1.

    The aim of this three-step approach is to prevent children from being falsely labelled and inappropriately treated because a continuous medication was started when the child was about to get better because of the natural history of the condition.
2. Some children will not respond to ICS and/or LTRA. These children should be referred to tertiary services for further investigation and consideration of alternative treatments.
3. All children with suspected asthma should be seen annually to reinforce education, review long term management and supersede any existing SNOMED CT code as necessary.

References

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