

CLINICAL PROFILE AND ETIOLOGY OF WHEEZE IN CHILDREN BELOW 6 YEARS OF AGEDivya Dhiman¹ and Twinkle Sood*²¹M. D. Paediatrics.²M. S. OBG. Both Authors are affiliated to Civil Hospital Palampur.

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ABSTRACT

Background - Wheezing, the production of a musical and continuous sound that originates from oscillations in narrowed airways, is heard mostly on expiration as a result of critical airway obstruction. Wheezing is a very common complaint in Paediatric OPD. So, this is conducted to study the clinical profile and aetiology of wheeze in children below 6 years of Age. **Materials and Methods** -It is a hospital based descriptive study carried out at Civil hospital Palampur for a period of 6 months from July 2022 to December 2022. Study population involves children less than 6 years of age who either attended Opd or admitted in paediatric ward with symptoms of wheezing. children less than 6 years of age who either attended Opd or admitted in paediatric ward with symptoms of wheezing from July 2022 to December 2022. After history taking, physical examination some blood investigation and radiological examination were done. These children were followed up for a period of 6 months All the data obtained were presented as percentage in MS excel sheet. **Results** - Out of 80 patients, there were 30(37.5%) patients of bronchial asthma, 10(12.5%) patient of bronchiolitis, 3(3.75%) patients of croup, 8 patient of Episodic Wheezer(10%) , 12(15%) patients of multi trigger wheezer (triggers like cold air, icecream, dust inhalation) , 17(21.23%) patients of WALRI. 52.5 % patient presented with cough, 30 % patient presented with fever, 36.3 % patient presented with noisy breathing, 15 % patient had multiple triggers like exposure to cold air, ice cream, dust inhalation), 18.7% patients had viral induced wheezing . Out of 80patients, 50 (62.5 %) patients were male and 30(37.5%) patients were female. **Conclusion** – We found that the common cause of wheezing in children <6 years is bronchial asthma followed by WALRI, followed by Multi trigger wheezer. In our study, we found that wheezing is more common in males as compared females. In this study, we found cough as the presenting symptom followed by fever followed by noisy breathing.

INTRODUCTION

Wheezing, the production of a musical and continuous sound that originates from oscillations in narrowed airways, is heard mostly on expiration as a result of critical airway obstruction. Infants are more likely to wheeze than older children and adults as a result of a differing set of lung mechanics. In younger children than 5 years old, small caliber peripheral airways can contribute up to 50 % of the total airway resistance.^[1] Children presenting with more than or equal to three episodes of wheeze in an year are called recurrent wheezers.

In young children, wheezing either transient or persistent, can be severe and cause a poor quality of life with frequent use of medications.^[2] Wheezing is a common problem worldwide and the most frequent causes of wheezing in preschool children are bronchiolitis and asthma.^[3] Apart from Bronchial asthma other causes like tropical eosinophilia, acute respiratory infections like bronchiolitis and helminthic infestations must be thought of^[4] Unilateral wheezing is always

secondary to obstruction of one of the bronchi either due to foreign body in the lumen or extrinsic pressure by enlarged lymphnode, tumour, or anomalous blood vessel. When acute lower respiratory tract infection is associated with wheeze, it is called wheeze associated lower respiratory tract infection (WALRI) and may be taken to include bronchiolitis, bronchitis, pneumonia, laryngotracheobronchitis (croup).^[5] In India, the incidence of wheeze is high in children. It has been found that one in three children have their episode of wheeze in infancy, and the prevalence of wheeze is nearly 50% by 6 years of age, 25 % of children who develop persistent asthma started to wheeze by age of 6 months and 75% by 3 years of age.^[6]

There exists a group of infants and toddlers who are born with anatomically small airways. This predisposes them to wheeze with viral infections (wheeze associated with lower respiratory infections). Each viral infection results in an inflamed hyperreactive airway and further narrowing of airways caliber. As these infants grow

older, the airways grow in size and the symptoms progressively abate.

The etiology of wheeze includes infectitious causes (viral, bacterial, fungal), anatomic abnormalities (tracheomalacia, tracheoesophageal fistula), extrinsic compression (hemangioma, lymphnode, vascular ring), inherited (cystic fibrosis, bronchiectasis), aspiration syndromes (GERD).

Classification of wheezing which is used in clinical practice^[7]

Episodic (viral) wheeze: Wheezing occurs during discrete episodes, and it is associated with a viral cold, no wheeze between the episodes.

Multiple trigger wheeze: In this group child has discrete exacerbations, but also wheezes between the episodes.

To help in the diagnosis of asthma, Asthma predictive index has been proposed, preschool children with recurrent wheeze for 1 year with one major criteria or two minor criteria.^[8]

Major criteria

1. Parent asthma
2. Eczema
3. Inhalant allergen sensitization

Minor criteria

1. Allergic rhinitis

RESULTS

Table 1: Analysis of the cases on the basis of aetiology.

Aetiology	No. of cases	Percentage
Bronchial Asthma	30	37.5 %
Bronchiolitis	10	12.5%
Croup	3	3.75%
GERD	-	-
Episodic wheezer	8	10%
Multi trigger wheezer	12	15%
WALRI	17	21.23%

Out of 80 patients, there were 30(37.5%) patients of bronchial asthma, 10(12.5%) patient of bronchiolitis, 3(3.75%) patients of croup, 8 patient of Episodic

2. Wheezing apart from colds
3. Eosinophills >4%
4. Food allergen sensitization

MATERIAL AND METHODS

It is a hospital based descriptive study carried out at Civil hospital Palampur for a period of 6 months from July 2022 to December 2022. Study population involves children less than 6 years of age who either attended Opd or admitted in paediatric ward with symptoms of wheezing. Sample size 80.

Inclusion criteria – Children less than 6 years of age who either attended Opd or admitted in paediatric ward with symptoms of wheezing from July 2022 to December 2022.

Exclusion criteria – Children more than 6 years of age, children who were in sepsis, shock or with cvs disease.

After history taking, physical examination some blood investigation and radiological examination were done. These children were followed up for a period of 6 months. Bronchiolitis is diagnosed on the basis of presence of severe dyspnea with signs of respiratory muscles acting, without any positive history of asthma or eczema, temperature (not beyond 100f), wheeze and diminished breath sounds.

Statistical Analysis – All the data obtained were presented as percentage in MS excel sheet.

Wheezer (10%), 12(15%) patients of multi trigger wheezer (triggers like cold air, icecream, dust inhalation), 17(21.23%) patients of WALRI.

Table 2: Clinical features among the children with wheeze.

Clinical feature	Frequency	Percentage(n=80)
Cough	42	52.5 %
Fever	24	30%
Noisy breathing	29	36.3%
Triggers	12	15%
Viral induced	15	18.7%

52.5 % patient presented with cough, 30 % patient presented with fever, 36.3 % patient presented with noisy

breathing, 15 % patient had multiple triggers like exposure to cold air, ice cream, dust inhalation), 18.7% patients had viral induced wheezing.

Table 3: Distribution on the basis of gender.

Gender	Frequency	Percentage
Male	50	62.5%
Female	30	37.5%

Out of 80 patients, 50 (62.5 %) patients were male and 30 (37.5%) patients were female.

DISCUSSION

Wheezing is a very common respiratory symptoms in under 5 children and demands medical and emergency care services. We found that the common cause of wheezing in children <6 years is bronchial asthma followed by WALRI, followed by Multi trigger wheezer. Ahmed et also found that the common cause of wheezing in children < 6 years is bronchial asthma followed by Bronchiolitis in infants.^[9] Heyman PW et al found that viral infections were the dominant risk factor for wheezing among children hospitalized below 3 years.^[10] In our study, we found that wheezing is more common in males as compared females. Dawson et al found that prevalence of asthma in boys is almost double that of girls.^[11]

In our study, we found that the 52 % children had cough as the presenting complaint. Holinger et al also concluded that cough which is barking or brassy, and expiratory stridor are the most common symptom.^[12]

In our study, we found that wheezing is more common in boys (62.5 %). Patra S, et al reported in children less than 2 years there was male predominance among wheezers.^[13]

CONCLUSION

We found that the common cause of wheezing in children <6 years is bronchial asthma followed by WALRI, followed by Multi trigger wheezer. In our study, we found that wheezing is more common in males as compared females. In this study, we found cough as the presenting symptom followed by fever followed by noisy breathing.

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