



A STUDY OF RISK FACTORS AND OUTCOME AMONG FIRST TIME WHEEZERS

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KEYWORDS :

INTRODUCTION

- Wheezing in children is a significant clinical symptom associated with various respiratory conditions, often indicating underlying airway obstruction or inflammation [1].
- The early identification and management of first-time wheezers are critical in preventing recurrent episodes and potential progression to chronic conditions like asthma [2].
- Risk factors for wheezing include environmental exposures, genetic predispositions, and infections, underscoring the need for comprehensive studies to understand these associations better [3].
- This study aims to contribute to this body of knowledge by examining the risk factors and outcomes among first-time wheezers at the Kanachur Institute of Medical Sciences.
- A better understanding of these elements can guide more effective interventions and management strategies for this vulnerable population.

OBJECTIVES

- To study the risk factors and clinical profile in first time wheezers.
- To study & evaluate risk factors for recurrence in first time wheezers.

MATERIALS AND METHODS

Study Design: Longitudinal study tracking outcomes of first-time wheezing episodes in children.

Sample Size: 50 subjects. Determined using G* Power software, to achieve 90% power at a 5% significance level.

Study Period: May 2022 to Jan 2024.

Place of Study: Paediatrics Outpatient Department and Casualty wing, Kanachur Institute of Medical Sciences, Deralakatte, Mangalore.

Inclusion Criteria

1. Children aged 2 months to 5 years.
2. Presenting with a wheezing episode for the first time.
3. Clinically diagnosed and documented wheezing.
4. Available for follow-up during the study period.
5. Informed consent from parents or guardians.

Exclusion Criteria

1. Previous history of wheezing.
2. Lack of parental or guardian consent.
3. Inability to follow-up due to relocation or transfer to another hospital.
4. Concurrent chronic respiratory conditions.
5. Immunocompromised children or those with significant comorbidities.

METHODOLOGY

- **Participant Enrollment:** After taking informed consent, identification and enrollment of eligible participants based on inclusion and exclusion criteria, was done
- **Baseline Data Collection:** Detailed history taking, including onset, duration, progression of wheezing, and any associated symptoms or potential triggers.
- **Clinical Examination:** Conducting a thorough physical

and systemic examination, focusing on the respiratory system.

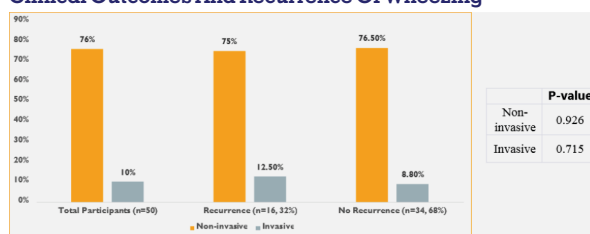
- **Investigations:** Performing routine blood tests, chest X-rays, and evaluations for asthma to gather comprehensive clinical data.
- **Follow-Up:** Documenting post-treatment outcomes and any recurrence of wheezing during at least two follow-up visits within the year.
- Analysis is performed using SPSS version 24, including descriptive and inferential statistics, with the Shapiro-Wilk test determining normalcy, and appropriate parametric or non-parametric tests applied.

RESULTS

Table 1: Participant Demographics and Baseline Characteristics

Characteristic	Total Participants (n=50)	Recurrence (n=16, 32%)	No Recurrence (n=34, 68%)	P-value
Age Group				
2-12 months	15 (30%)	5 (31.3%)	10 (29.4%)	0.91
13-60 months	35 (70%)	11 (68.8%)	24 (70.6%)	
Gender				
Male	28 (56%)	9 (56.3%)	19 (55.9%)	0.97
Female	22 (44%)	7 (43.8%)	15 (44.1%)	
Environmental Exposure				
Pets	26 (52%)	11 (68.8%)	15 (44.1%)	0.09
Passive Smoke	16 (32%)	8 (50%)	8 (23.5%)	0.04
Foreign Body Aspiration	9 (18%)	7 (43.8%)	2 (5.9%)	0.003

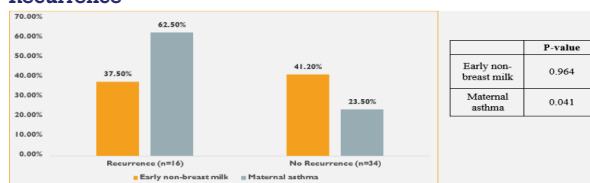
Clinical Outcomes And Recurrence Of Wheezing



Analysis Of Risk Factors For Wheezing Recurrence

Risk Factor	Odds Ratio (OR)	95% CI	P-value
Pets	2.8	0.9-8.6	0.09
Passive Smoke	3.3	1.0-10.8	0.04
Foreign body aspiration	12.0	2.3-62.4	0.003

Dietary Factors And Parental Asthma's Role In Wheezing Recurrence



DISCUSSION

- The association of passive smoke exposure with increased recurrence of wheezing is consistent with findings by Burke et al. (2012), who reported a significant relationship between environmental tobacco smoke and wheezing in children under 5 years ($P < 0.05$) [4].
- In contrast, our study found no significant association between pet exposure and wheezing recurrence ($P = 0.09$), which diverges from the results of Lodge et al. (2011) that highlighted a protective effect of early-life pet exposure on later wheezing episodes [5].
- The significant risk posed by foreign body aspiration ($P = 0.003$) in our study echoes the findings of Goldstein et al. (2013), who noted a strong correlation between foreign body aspiration and recurrent wheezing, suggesting the need for prompt diagnosis and intervention [6].
- Our analysis did not show a significant age or gender difference in wheezing recurrence, aligning with the study by Henderson et al. (2014), which found that the impact of age and gender on wheezing patterns is minimal compared to environmental and genetic factors [7].

DISCUSSION

- The link between maternal asthma and wheezing recurrence in offspring ($P = 0.04$) supports the hypothesis of genetic predisposition to asthma and wheezing, as discussed in the longitudinal cohort study by Martinez et al. (2011), underscoring the role of hereditary factors in respiratory conditions [8].
- Interestingly, dietary factors such as early introduction to non-breast milk did not significantly influence wheezing recurrence in our study ($P = 0.96$), which contrasts with findings by Wright et al. (2015), who reported a potential association between early dietary patterns and the development of wheezing [9].
- These discrepancies highlight the complex interplay of genetic, environmental, and lifestyle factors in the etiology and progression of wheezing in children, suggesting the need for multifaceted approaches in prevention and management strategies.

CONCLUSION

- In conclusion, our study highlights the significant impact of environmental exposures, such as passive smoke and foreign body aspiration, on the recurrence of wheezing episodes in children.
- Despite finding no significant association with pet exposure, the strong link with maternal asthma suggests a genetic or environmental predisposition to wheezing recurrence.
- These findings underscore the importance of targeted interventions and public health policies aimed at reducing exposure to known risk factors, as well as the need for ongoing research into the genetic basis of wheezing.
- Ultimately, a multifaceted approach, incorporating environmental, lifestyle, and genetic considerations, is crucial for effectively managing and preventing wheezing recurrences in pediatric populations.

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