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Original Research Article

Assessment of ENT Disorders in the Bihar Region Population: A Retrospective Study

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Abstract

Aim: A comprehensive assessment of ear, nose, and throat disorders in the bihar region.

Material and Methods: A retrospective study was conducted in the Department of ENT, AIIMS, Patna, Bihar, India from Oct 2017 to Dec 2018.The entire population of bihar region were covered by changing the site of camp on each visit. Inclusion criteria for the study subjects were people who had given symptom of ENT diseases and those who had given his/her consent. Questionnaire method of data collection was used to know the pattern and prevalence of ENT diseases. Living environment conditions including overcrowding and inadequate cross ventilation were defined as per textbook standards.

Results: Out of 515, 268 (52.1%) patients were male while 247 (47.9%) were females (Male: female ratio being 1.08:1). The age distributions of patients are shown in Figure 1. Most common age group affected was of 31-40 years (4th decade). The majority of patients were suffering from ear problems (54.8%; 282/515) while nasal and throat problem was seen in 14.9% (77/515) and 30.3% (156/515) respectively. Among the ear problems, chronic suppurative otitis media (safe type) was the commonest (41.8%; 118/282) followed by ear wax (25.2%; 71/282), otitis externa (9.6%; 27/282), acute suppurative otitis media (8.2%; 23/282), hearing loss (5.7%; 16/282), acute mastoiditis (4.3%; 12/282), otomycosis (1.8%; 5/282), foreign body (2 cases), trauma to ear (1 case) and others (7 cases). The 'others' category had all non-significant cases with chronic non-specific pain with normal findings and investigations. The pure tone audiometry was performed on 282 patients and hearing aid trail was given to 16 patients.

Conclusion: Health camps conducted by medical experts act as an opportunity to screen people with various ailments of ENT in community. Also, they can orient medical graduates towards health need of common people. Being a community-based study, it reflects the exact magnitude and pattern of ENT diseases.

Keywords: Assessment, Ear, Nose, Throat, Disorders

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Introduction

Ear, nose, and throat (ENT) disorders encompass a broad spectrum of conditions affecting the head and neck region, significantly impacting patients' quality of life. Common ENT disorders include otitis media, chronic rhinosinusitis, allergic rhinitis, and various throat infections, which can lead to complications if not properly diagnosed and treated. Understanding the prevalence, risk factors, and impact of these disorders through surveys and epidemiological studies is crucial for developing effective public health strategies and improving patient care. ENT disorders are prevalent across all age groups, with some conditions being more common in specific populations. Otitis media, for example, is a frequent ailment in children, characterized by inflammation and infection of the middle ear. [1,2] Chronic rhinosinusitis affects adults predominantly, leading to prolonged inflammation of the nasal and sinus passages. Allergic rhinitis, triggered by environmental allergens, results in symptoms like sneezing, nasal congestion, and itchy eyes, affecting a significant portion of the population. Surveying the prevalence and impact of ENT disorders is essential for several reasons. First, it helps identify the most common conditions and their burden on public health. Second, understanding the demographic and

geographic variations in these disorders aids in tailoring healthcare interventions. [3,4] Third, surveys can uncover gaps in healthcare access and identify areas needing improvement in patient education and disease management. Studies have shown varying prevalence rates of ENT disorders globally. For instance, a systematic review reported that the global prevalence of chronic rhinosinusitis ranges from 6% to 27%, with significant variations based on diagnostic criteria and study populations. Similarly, the prevalence of otitis media in children has been documented to be as high as 80% in some regions, underscoring the need for targeted paediatric care . Several risk factors contribute to the development of ENT disorders. Environmental factors, such as air pollution and exposure to tobacco smoke, have been linked to increased rates of chronic rhinosinusitis and allergic rhinitis. Genetic predisposition also plays a role, particularly in conditions like otitis media and certain types of hearing loss. Additionally, comorbidities such as asthma and gastroesophageal reflux disease (GERD) can exacerbate ENT conditions, complicating treatment and management. ENT disorders can significantly impact patients' quality of life, affecting daily activities, sleep, and overall well-being. Chronic conditions like rhinosinusitis and allergic rhinitis often lead to persistent symptoms, resulting in decreased productivity and increased healthcare utilization. Understanding these impacts through surveys can inform healthcare providers and policymakers about the need for comprehensive management strategies. [5,6]

Material and Methods

A retrospective study was conducted in the Department of ENT, AIIMS, Patna ,Bihar, India from Oct 2017 to Dec 2018. The entire population of rural areas were covered by changing the site of camp on each visit. Inclusion criteria for the study subjects were people who had given symptom of ENT diseases and those who had given his/her consent. Exclusion criteria for the study subjects were people who had not any symptom of ENT diseases and any child less than 12 months of age. At first, the patients were screened at primary level by interns and second author. Later they were referred to ENT experts who did a complete clinical examination and appropriate investigations depending on the merit of the presenting complaint. A free distribution of medicines was carried out after consultation. The awareness and education to the patients as well as general population was carried out by hand-out printed IEC (Information, education and communication) materials and lectures were given by experts. All the patients needing surgical interventions were referred to the hospital. Any emergency case was also referred although they were not taken for analysis. Questionnaire method of data collection was used to know the pattern and prevalence of ENT diseases. Living environment conditions including overcrowding and inadequate cross ventilation were defined as per textbook standards. All the data were entered into Microsoft excel and analyzed by SPSS version 24.0. A logistic regression analysis was conducted to determine the factors associated with ENT diseases. Odds ratios were obtained after adjustment for age, sex and other socioeconomic conditions.

Results

A total of 832 patients were screened during the study period out of which 61.9% (515/832) patients were suffering from ENT disorders. The reason for such high percentage may be prior knowledge of patients about availability of ENT doctors in camps. Out of 515, 268 (52.1%) patients were male while 247 (47.9%) were females (Male: female ratio being 1.08:1). The age distributions of patients are shown in Figure 1. Most common age group affected was of 31-40 years (4th decade). The majority of patients were suffering from ear problems (54.8%; 282/515) while nasal and throat problem was seen in 14.9% (77/515) and 30.3% (156/515) respectively (Table 1). Table 2 depicts distribution of ENT diseases. Among the ear problems, chronic suppurative otitis media (safe type) was the commonest (41.8%; 118/282) followed by ear wax (25.2%; 71/282), otitis externa (9.6%; 27/282), acute suppurative otitis media (8.2%; 23/282), hearing loss (5.7%; 16/282), acute mastoiditis (4.3%; 12/282), otomycosis (1.8%; 5/282), foreign body (2 cases), trauma to ear (1 case) and others (7 cases). The ‘others’ category had all non-significant cases with chronic non-specific pain with normal findings and investigations. The pure tone audiometry was performed on 282 patients and hearing aid trail was given to 16 patients. The syringing of ear was done in 71 patients for wax removal. Among the 77 patients of nasal symptoms, most common problem was sinusitis which was seen in 38 (49.4%) cases while allergic rhinitis was seen in 23 (29.9%) cases and nasal polyp was found in 5 (6.5%) cases. There were 4, 3 and 1 cases of epistaxis, foreign body and chronic dacryocystitis respectively. All the diseases with non- specific pain of nose & face with normal examination and investigations were kept in ‘others’ group which had 3 patients only. In the throat problems, most common was sore throat or acute pharyngitis (42.9%; 67/156), followed by GERD (12.8%; 20/156) and tonsillitis (10.9%; 17/156). Neck swelling was seen in 16 (10.2%) cases while stomatitis was diagnosed in 15 (9.6%) cases. Also, 4 patients each had thyroid swelling and parotid swelling. The neck masses were seen in 7 patients while one mass was metastasis and other six were benign. All the diseases with non-specific pain of throat with normal examination and investigations were kept in ‘others’ group which had 6 patients.

The number of patients who underwent flexible endoscopy and rigid nasopharyngoscopy was 39.

Table 3 presents the result of the multiple logistic regression analysis of living environment conditions of cases. After adjusting for type of house, separate kitchen and windows, the non-availability of cross ventilation in houses and overcrowding still appears to be the most important factor influencing Ear, nose and throat diseases.

Table 1: Sex distribution of patients of ear, nose and throat.

Disease	Male (%)	Female (%)	Total (%)
Ear	149 (52.8)	133 (47.2)	282 (54.8)
Nose	45 (58.4)	32 (41.6)	77 (14.9)
Throat	74 (47.4)	82 (52.6)	156 (30.3)
Total	268 (52.1)	247 (47.9)	515 (100.0)

Table 2: Distribution of ear, nose and throat diseases.

Disorders	Disease	n (%)
	Chronic suppurative otitis media	118 (41.8)
	Ear wax	71 (25.2)
	Otitis externa	27 (9.6)
	Acute suppurative otitis media	23 (8.2)
Ear	Hearing loss	16 (5.7)
	Acute mastoiditis	12 (4.3)
	Otomycosis	5 (1.8)
	Foreign body	2 (0.7)
	Trauma to ear	1 (0.3)
	Others	7 (2.5)
	Sinusitis	38 (49.4)
	Allergic rhinitis	23 (29.9)
	Nasal polyp	5 (6.5)
Nose	Epistaxis	4 (5.2)
	Foreign body	3 (3.9)
	Chronic dacryocystitis	1 (1.3)
	Others	3 (3.9)
	Acute pharyngitis	67 (42.9)
	GERD and	20 (12.8)
	Tonsillitis	17 (10.9)
	Neck swelling	16 (10.2)
Throat	Stomatitis	15 (9.6)
	Thyroid swelling	4 (2.5)
	Parotid swelling	4 (2.5)
	Neck masses	7 (4.5)
	Others	6 (3.8)

Table 3: Multiple logistic regression analysis of living environment associated with ear, nose and throat diseases.

Variable	B	Wald	P value[a]	Adj OR	95% CI
Type of house	0.10	0.28	0.59	1.10	0.76-1.60
Separate kitchen	0.18	0.72	0.39	1.19	0.79-1.81
Windows	0.21	0.55	0.45	1.23	0.70-2.18
Cross ventilation	0.15	5.21	0.02	1.17	1.02-1.34
Overcrowding	0.22	9.98	<0.01	1.24	1.54-2.33

Discussion

Health status of a developing country like India should be assessed at the bihar level. The current study was done to find pattern and prevalence of ENT diseases in bihar region ,AIIMS,Patna, Bihar, India organized free health camps to cater those people residing in rural areas who rarely visit hospitals. It was an opportunity for interns of

Community medicine to get training at rural field areas and learn more about ENT diseases. The study shows that most of the patients with ENT diseases were from 4th decade which corroborated with a study done by Singh et al. [7] ENT problems are very much prevalent in geriatric population of India as also seen in this study. [8] Male: female ratio of this study is 1.08:1 which could be due to male preponderance in population of India. [9] The study shows Ear diseases to be most common in seeking medical advice. This study reveals that CSOM was most common among ear disease with a prevalence of 41.8%. Various studies in their ENT patients audits have shown CSOM to be the commonest problem. The burden of CSOM varies from place to place. Global prevalence rates estimates a range between 1% and 46%, our prevalence being on a higher side. [10] Among nasal problems, allergic rhinitis was seen in 29.9% cases. Allergic rhinitis is often viewed as a trivial disease but it can significantly affect quality of life of patient. It is also closely related to asthma as 10-40% of people with rhinitis have concomitant asthma, According to WHO, the prevalence of allergic rhinitis ranges between 10% to 32% in Asia, very similar to our study. [11] Chronic rhinosinusitis is one the common problems encountered in ENT department. It does not affect a particular age or sex and is more common among patients with an upper respiratory tract infection. [12] Sore throat was most commonly seen throat disease among people. In ENT practice, sore throat is one of the most common encountered diagnoses. It is also a common condition seen by general practitioners, pediatricians and internists. Majority of these cases are caused by viruses and only small amount are caused by Group A Streptococcus. [13] In this survey, neck masses were seen in seven patients. Head and neck cancers in India are emerging as major health problem as they account for 30% and 16% of all cancers in males and females respectively. Most of them are difficult to manage, but being highly preventable, the emphasis, therefore should be on preventing the onset and detecting the disease at an early stage. So, camp approach is an important modality to detect these masses at the earliest. [14] In this study it was found that overcrowding and lack of cross ventilation were important internal environmental factors influencing ENT diseases. Few studies have linked poor internal environment as a predictor of infectious diseases including CSOM. Studies have shown that there is a strong and sufficient evidence of the association between ventilation and the transmission and spread of infectious diseases. [15-17] This study reveals a strong need for a multidisciplinary study investigating ENT diseases and impact of cross ventilation on spread of these diseases.

Conclusion

Health camps conducted by medical experts act as an opportunity to screen people with various ailments of ENT in community. Also, they can orient medical graduates towards health need of common people. Being a community-based study, it reflects the exact magnitude and pattern of ENT diseases. It can be further used for proper planning and implementation of health programmes to tackle this public health problem.

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