

Spectrum of otorhinolaryngologic diseases in a tertiary care hospital of Peshawar, Pakistan, based on 2003-2013 data

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Submitted

February 16, 2018

Accepted

April 19, 2018

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Citation: Khan MAA, Nasim O, Hayat MK. Spectrum of otorhinolaryngological diseases in a tertiary care hospital of Peshawar, Pakistan, based on 2003-2013 data. J Rehman Med Inst. 2018 Apr-Jun;4(2):8-11.

ABSTRACT

Introduction: A wide variety of patients with Ear, Nose, and Throat (ENT) diseases present to the Otorhinolaryngologist regardless of their age or gender between communities, hospitals and seasons.

Objective: To provide an overview and comparison of major ENT diseases seen at a tertiary care hospital of Peshawar, Pakistan.

Materials & Methods: A cross-sectional descriptive study was conducted from October to December 2017 based on 11-years' retrospective data (2003-2013) of ENT patients managed at the Department of Otorhinolaryngology, Rehman Medical Institute (RMI), Peshawar, Pakistan. Data were entered into MS Excel 2013 and analyzed for descriptive statistics.

Results: During 2003-2013, 2204 patients were managed. There were 1475 (66.92%) males and 729 (33.08%) females (male to female ratio 2.02:1). The most frequent presentation was that of DNS (50.2%) followed by Tonsillitis (28.0%). The least common presentation was that of Otitis Media (3.0%), Thyroid Disease (3.0%), and Sinusitis (2.0%). The most common age group of presentation to an ENT Department was <1-20 years (49.1%).

Conclusion: A general male preponderance was observed for morbidity of ENT diseases. The spectrum of ENT diseases seen in RMI is at par with most of the published literature; however, the frequency of DNS was higher in RMI when compared to other national and regional studies.

Keywords: Nasal Obstruction; Nasal Septum; Nose Deformities; Ear Diseases; Public Health.

The authors declared no conflict of interest. All authors contributed substantially to the planning of research, data collection, data analysis, and write-up of the article, and agreed to be accountable for all aspects of the work.

INTRODUCTION

Among GP consultations, the Ear, Nose and Throat (ENT) diseases account for 25% in adults and up to 50% in children.¹ These patterns of diseases vary from community to community, hospital to hospital and season to season.²

Diseases presenting to an ENT OPD include infectious diseases, neurologic diseases, inflammatory diseases, vascular diseases, benign and malignant tumors, etc. ENT diseases affect all age groups and are therefore a serious public health problem with universal distribution.³ There is a steady increase in the incidence of ENT diseases probably due to an increase in health services, awareness, pollution and traffic.⁴

The knowledge of otorhinolaryngologic diseases is very important because of the type of morbidities they cause due to impairment of essential physiologic functions that usually take place in the head and neck region. These include difficulty in hearing, breathing, swallowing, speech, smell and taste, protection of the lower respiratory tract and clearance of secretions.⁵

According to a study conducted by WHO, 42 million children are suffering from hearing disability, most common of these is otitis media. Otitis media is an inflammation of the middle ear cleft, with or without an intact tympanic membrane.⁶ It was first described by Hippocrates as early as 450 BC, and it continues to present itself even today as one of the most perplexing universally observed medical problems of childhood and a leading cause of hearing loss.⁷

Deviated Nasal Septum (DNS) is one of the common findings seen in Otorhinolaryngology daily practice. DNS is defined as the deviation of the bony or cartilaginous nasal septum to one or both sides.⁸ Some degree of DNS is found in 58% in newborn babies and 4% of these are also associated with external nasal deformity.⁹ Adults with DNS can present with a history of nasal obstruction, headache and recurrent nasal discharge.¹⁰

It has been estimated that 75% cases of tonsillitis in children of 2 to 10 years are due to viruses; however, most of these cases are treated with antibiotics.¹¹ Tonsillitis may be caused by a variety of micro-organisms, but Group A beta-hemolytic streptococcus is, however, the most common agent.¹² In the Pediatric population, tonsillectomy for chronic tonsillitis is the commonest surgical procedure performed.¹³

Disorders of ENT have significant morbidity and can affect the ability to acquire knowledge and skill.⁶ For example, severe deafness impairs speech development although speech apparatus is normal, and it also badly affects learning. Upper airway obstruction can lead to heart failure, sleep apnea syndrome and snoring, disturbing also the sleep of persons sharing the same room. Trauma and foreign bodies of the aero-digestive tract if not managed properly can kill a person.⁷

Despite its importance, there is still very little known about the pattern of otorhinolaryngologic diseases in developing countries. This study was carried out to provide an overview and comparison of major ENT diseases seen at a tertiary care hospital of Peshawar, Pakistan.

MATERIALS & METHODS

This was a cross-sectional descriptive study conducted from October to December 2017 based on retrospective data of the hospital records of patients that presented and were managed at the Department of Otorhinolaryngology, Rehman Medical Institute, Peshawar, Pakistan between 2003 and 2013. This institution provides a tertiary level of health care services as well as training in Peshawar. All patients aged <1-100 years that were admitted in Otorhinolaryngology department in RMI Peshawar, having Ear, Nose, Throat morbidity were included in the study while those presenting with diseases of Ear, Nose, Throat along with other systemic diseases were excluded.

The data gathered from the hospital registers included age and sex of the patient, date of admission, diagnosis of presenting problem and treatment offered. The age categories were divided into 5 groups, 0-20, 21-40, 41-60, 61-80, 81-100 years’.

Collected data were analyzed using MS Excel 2013 for descriptive statistics. The data were analyzed based on the number of Patients admitted in the ENT unit and the variables of the study which included major diagnoses i.e. Deviated Nasal Septum (DNS), Chronic Tonsillitis, Acute Tonsillitis, Nasal polyp, Epistaxis and Adenoiditis.

RESULTS

During the years 2003-2013, a total of 2204 patients were managed for ear, nose and throat diseases in the Otorhinolaryngology ward, Rehman Medical Institute, Peshawar. There were 1475 (66.92%) males and 729 (33.08%) females giving a male to female ratio of 2.02:1. The patients’ ages ranged from 1 day to 100 years with a mean age of 23.3±13.7 years for males, and 23.3±13.6 years for females.

The results (Table 1) revealed that out of the 2204 patients, the most frequent presentation was that of DNS (50.18%) followed by Chronic Tonsillitis (21.28%). The least common presentations were Otitis Media (3.08%), Thyroid Disease (2.99%), and Sinusitis (1.36%).

Diagnosis	Frequency	Percentage
Deviated Nasal Septum	1106	50.18
Chronic Tonsillitis	469	21.28
Acute Tonsillitis	157	7.12
Enlarged Adenoids	111	5.04
Nasal Polyps	102	4.63
Epistaxis	95	4.31
Otitis Media	68	3.08
Thyroid Diseases	66	2.99
Sinusitis	30	1.36
Total	2204	100

The 2204 patients from ages <1-100 years were divided into five groups, The First age group i.e. <1-20 years presented with the highest proportion of diseases (49.14%), while above 81 years’ group accounted for the least proportion of disease (0.27%) as shown in Table 2.

Chronic Tonsillitis (33.3%) was found to be the most common disease in the 0-20 years’ age group. DNS was found to be more common in the age group 21-40 years (66.4%) and age group 41 - 60 years (41.9%). Epistaxis (48.6%) was found to be most common in the age group 61 – 80. Age group 80 and above did not show any specific trend however, acute tonsillitis, nasal polyps nor enlarged tonsils were present as shown in Table 2. Enlarged Adenoids (10.2%) were only found in the <1 – 20 years age group.

Ages (years)	Spectrum of ENT Diseases									Total n (%)
	Acute tonsillitis	Chronic Tonsillitis	DNS	Epistaxis	Nasal Polyps	Enlarged Adenoids	Otitis Media	Sinusitis	Thyroid Diseases	
<1-20	98	361	428	15	14	111	37	11	08	1083 (49.14)
21-40	53	98	597	25	50	00	24	13	39	899 (40.78)
41-60	04	06	75	36	32	00	5	05	16	179 (08.12)
61-80	02	02	05	18	06	00	01	01	02	37 (01.68)
81+	00	02	01	01	00	00	01	00	01	06 (0.27)

Table 3 shows the gender-wise distribution of diseases presenting to RMI. Overall, males had more ENT diseases (66.92%) compared to females (33.08%). The most common ENT disease in males was DNS (56.9%) followed by Chronic Tonsillitis (17.4%) while the least common was Sinusitis and Thyroid

Diseases (1.4% each). In females a similar trend was seen, DNS (36.6%) was the most common presentation followed closely by Chronic Tonsillitis (29.1%) while the least common presentation was Sinusitis (1.4%).

Table 3: Gender wise distribution of ENT Diseases in patients (2003-2013).

Gender	Spectrum of ENT Diseases									Total n (%)
	Acute tonsillitis	Chronic Tonsillitis	DNS	Epistaxis	Nasal Polyp	Enlarged Adenoids	Otitis Media	Sinusitis	Thyroid Diseases	
Male	86	257	839	66	71	79	35	21	21	1475 (66.92)
Female	71	212	267	29	31	32	34	10	45	729 (33.08)

DISCUSSION

Most of the ENT diseases presented to the unit were in the age group <1-20 years (49.1%). In the study conducted by Joshi RR,¹⁴ the age group <1-25 years accounted for 61.9% of the total population.

The male to female ratio in this study was 2.02:1. A similar trend was seen in all the other studies, albeit not so pronounced. A study by Khan et al in Shangla Valley shows the ratio as 1.35:1.² The study conducted by Fasnula et al shows the ratio as 1:1.⁵

The major ENT diseases observed in this study was Deviated Nasal Septum (DNS), found in 50% of all the cases presented in the ward. DNS is a frequently occurring condition that can cause nasal obstruction in an individual. It may result in permanent changes in the nasal and sinus mucosa because of altered ventilation of the nasal cavity.⁸ The overall prevalence of DNS reported by Sooknudun et al¹⁶ was reported as 15 to 25%, while another author¹⁷ reported a prevalence of 88.9%, Stallman¹⁸ as 65%, Sazgar as 62.9%,¹⁹ and Smith²⁰ as 19.4%. The findings in this study correlate with the overall prevalence of the disease; however in a hospital-based study, Khan et al⁴ reported DNS to be 11.67%. Similarly, Joshi RR¹⁴ in Western Nepal showed that DNS accounted for 6.01% of the ENT diseases which again is much lower compared to the present study.

The second most common problem in this study was Tonsillitis, Acute (7%) and Chronic (21%). A similar study conducted by Suman Yeli²¹ states the prevalence of Tonsillitis as 36.1%. Afroza Khanam et al²² shows the prevalence of Tonsillitis in a tertiary care center in Dhaka as 15.34% with Males (45.5%) and Females (54.5%)^[16]. According to a study conducted in RMI, the

males with tonsillitis account for 54.8% while females account for 45.2% of all the patients who presented with tonsillitis. Khan AR et al⁴ study shows the prevalence of Chronic Tonsillitis as 27.37% as compared to 21% in this study.

Enlarged Adenoids during childhood may fill the nasopharynx as well as extend through the posterior choanae into the nose that may result in nasal airway stenosis, impeding airflow. Sequelae include mouth breathing and rhinorrhoea, sleep disordered breathing, speech anomalies, feeding difficulties, chronic sinusitis, craniofacial anomalies and otitis media.²³ In this study incidence of enlarged adenoids is about 5% compared to study by Enas MAA et al (5.4%),²⁴ approximately similar result, 6.7% was found in the study by Khan AR⁴. Enlarged Adenoids were mainly found in the <1-20 years age group, the study by Enas MAA et al²⁴ shows a similar trend in the age group <1-16 years as the study was mainly carried out on children.

CONCLUSION

Male preponderance was observed in the sense of general morbidity of ENT diseases. The spectrum of ENT diseases seen in RMI is at par with most of the literature present however, it does not agree with the prevalence of DNS which is significantly higher in RMI in comparison with other institutional studies.

LIMITATIONS

Limitations of this study include the retrospective data and the site being singular and inpatient hospital-based. Therefore, a population-based prevalence study in this area would provide more reliable data on ENT morbidities.

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