

Original Research Article

Spectrum of otorhinolaryngological disorders among hospitalized adults in a tertiary care teaching hospital

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Received: 14 October 2018

Accepted: 31 October 2018

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ABSTRACT

Background: A retrospective descriptive study was made to find out the disease pattern, regional mobility, co-morbid details and malignancies related to otorhinolaryngological disorders.

Methods: Consecutive patients admitted to male and female wards over a period of 24 months commencing from May 2016 to April 2018 to a rural teaching hospital formed the materials. Their socio-demographic details, nature of illnesses, clinical course, final diagnosis and interventions made were collected from the case records and analyzed.

Results: During the study period 1740 cases were admitted; 854 (49.4) males and 886 (50.9%) females. Among them 642 (34.9%) suffered from otological disorders, and the rest had, rhinological related (607; 34.9%), laryngeal related (321; 18.4%) and other illnesses (170; 9.8%). The region wise data were also analyzed and recorded. Among the malignancies, oropharyngeal dominated followed by laryngopharyngeal and laryngeal. Among the in-patients studied, ear diseases were more common and these were followed by nose and throat diseases.

Conclusions: It is suggested to train primary care doctors and other health care workers on common ENT disorders to provide attention and care for emergency cases and refer the deserving cases in time to higher centres for appropriate care and management.

Keywords: ENT disorders, Epidemiology, Disease pattern, Adults, Otorhinolaryngology, Co-morbid illnesses, Malignancy

INTRODUCTION

In a tertiary care centre, the otorhinolaryngological disorders are found as one of the most common medical issue for seeking advice.^{1,2} These disorders contribute to morbidity more in metropolitan cities and its nearby places, due to high traffic, road traffic accidents (RTA), vehicle sounds, industrial disasters and pollutants. In addition poor socio-economic conditions, under nutrition and under utilization in health care facilities contribute to aggravation of the underlying illnesses. Our hospital serves rural population of Northern parts of the Tiruchirapalli city and surrounding villages.

Early diagnosis and medical intervention are likely to reduce burden of associated morbidities. WHO also has recommended that every individual undergo ear examination and assessment of hearing.³ However they tend to manage with home remedies. Ignorance, poverty and traditional beliefs prevent the rural population from seeking hospitals services in cities.⁴

Very limited references describe on the epidemiology of ENT disorders.⁵ Not much data are available on the prevalence of ororhinolaryngological diseases among rural adult population in India. A proper understanding of the magnitude of ENT diseases and factors for the

occurrence among the rural population are important to formulate health care policies for early detection and treatment.

Earlier studies assessed the association between obesity and disorders of otorhinolaryngology, and identified obstructive sleep apnoea, chronic otitis media with effusion, chronic rhinosinusitis, chronic tonsillitis and others.⁶ The most common ENT diseases among adults living in rural areas were chronic suppurative otitis media (CSOM), hearing loss, symptomatic deviated nasal septum (DNS), allergic rhinitis, gastro esophageal reflux disease (GERD) and otitis externa.⁷ Otological diseases were more common in both adults and paediatric age group.⁸

Further ENT health camps helps in alleviating the disease burden in rural areas. The need of the hour is to create awareness of common ENT problems among rural population and the treatment options available. The present study aims to determine the morbidity pattern of otorhinolaryngological disorders, regional morbidity, co-morbid conditions, malignancy details and elicit its association with age and gender.

METHODS

A retrospective, observational and descriptive study was conducted at the Otorhinolaryngology department of Trichy SRM Medical College Hospital and Research Centre, Tiruchirappalli, Tamil Nadu. Consecutive cases of otorhinolaryngology over a period of two years between May 2016 and April 2018 were considered for this study. This study was approved by the institutional research board. Pediatric age group and out-patients having ENT problems were excluded from this study.

Diagnosis was made on the basis of history, clinical examination and relevant investigations. Patients were treated either conservatively or selected for surgical management as per needs and they were informed about their illness for necessary treatment with regular follow up. A brief note of the management was documented in the medical records of the respective cases.

The following data were collected and analysed by simple descriptive methods.

- Total number of cases admitted as in-patients.
- Age and sex distribution of patients.
- Pattern of distribution of diseases including malignancies.
- Analysis of the regional morbidity.
- Determination of co-morbid illness.

The details of their socio-demographic status, nature of illnesses, clinical course, final diagnosis and interventions made were collected from the case records. The data were entered in the standard tables in the data column of SPSS. The data were analyzed using simple descriptive statistics

and finalized with percentages. The morbidity was classified region wise and if there is an associated regional morbidity that was also analyzed further. Associated morbidities among those with ENT disorders were looked for and entered. The types of malignancies related to ENT were also recorded and analyzed.

RESULTS

The Department of ENT over a period of two years managed a total number of 1740 in-patients. Among them, 854 (49.1%) were males and 886 (50.9%) were females (Figure 1). The age group observed among the patients was started from 15 to 89 years (Table 1). Overall there was no significant differences among gender with regard to ENT disorders (Table 2) on the contrary, gender differences was noticed significantly among age groups with selected disorders as shown in Table 2.

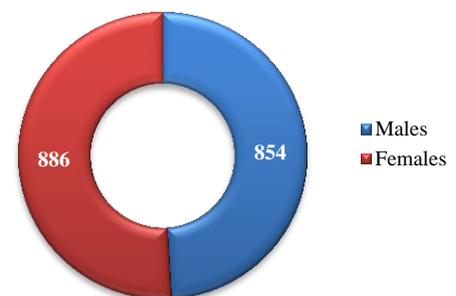


Figure 1: Gender-wise distribution of the subjects (n=1740).

Table 1: Age distribution of patients in the study population.

| Age range (in years) | Frequency | | Total (n=1740) |
|----------------------|---------------|-----------------|----------------|
| | Males (n=854) | Females (n=886) | |
| | N (%) | N (%) | N (%) |
| 15-25 | 84 (9.8) | 141 (15.9) | 225 (12.9) |
| 26-35 | 257 (30.1) | 284 (32.0) | 541 (31.1) |
| 36-45 | 127 (14.9) | 196 (22.1) | 323 (18.6) |
| 46-55 | 252 (29.5) | 144 (16.3) | 396 (22.6) |
| 56-65 | 112 (13.1) | 100 (11.3) | 212 (12.3) |
| Above 65 | 22 (2.6) | 21 (2.4) | 43 (2.5) |

Figure in parenthesis denotes percentage.

Table 2: Relationship of gender with ear, nose, throat and head & neck diseases.

| Diseases | Male (n=854) | Female (n=886) | Total (n=1740) |
|-----------------|--------------|----------------|----------------|
| | N (%) | N (%) | |
| Ear diseases | 284 (33.3) | 358 (40.4) | 642 (36.9) |
| Nose diseases | 320 (37.5) | 287 (32.4) | 607 (34.9) |
| Throat diseases | 176 (20.6) | 145 (16.4) | 321 (18.4) |
| Miscellaneous | 74 (8.6) | 96 (10.8) | 170 (9.8) |

Figure in parenthesis denotes percentage.

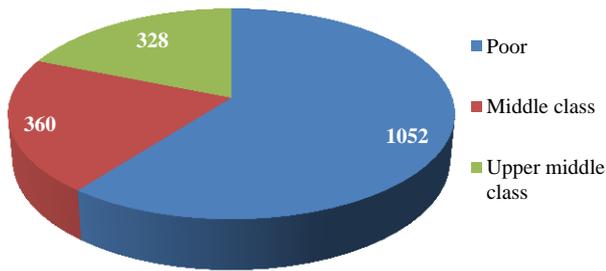


Figure 2: Socio-economic data of the subjects (n=1740).

The socio-demographic data depicted that majority of them belong to poor class (1,052; 60.4%) followed by middle class (360; 20.7%) and upper class middle class (328; 18.9%) and the details are depicted in Figure 2. Large numbers of patients in this study belonged to rural

areas (1,252; 71.9%) and 488 patients were from urban and semi urban areas (28.1%). Unmarried patients were 127 (7.3%), while 1,602 (92.1%) were married, 4 (0.2%) were divorced and seven patients (0.4%) were widow/widower.

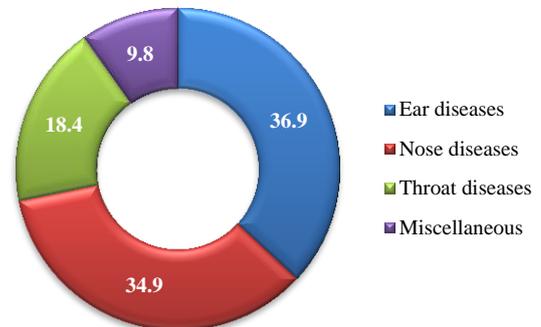


Figure 3: Overall percentage descriptions of ENT diseases.

Table 3: Distribution of ear, nose, throat, and head and neck disorders (n=1740) in relation to gender.

| Category | Region diagnosed | Frequency (n=1740) | |
|-------------------------|--|--------------------|-----------------|
| | | Males (n=854) | Females (n=886) |
| | | N (%) | N (%) |
| Ear (n=642) | Otologic | 247 (28.9) | 329 (37.1) |
| | Otologic and rhinologic | 31 (3.6) | 25 (2.8) |
| | Otologic, rhinologic and oropharyngeal | 1 (0.1) | 0 |
| | Otologic and oropharyngeal | 1 (0.1) | 0 |
| | Otologic and neurologic | 2 (0.2) | 2 (0.2) |
| | Otologic, neurologic and diabetic | 1 (0.1) | 0 |
| | Otologic and cardiovascular | 0 | 1 (0.1) |
| | Otologic and temporo mandibular joint disorder | 1 (0.1) | 1 (0.1) |
| Nose (n=607) | Rhinologic | 308 (36.1) | 275 (31.0) |
| | Rhinologic and cardiovascular | 8 (0.9) | 9 (1.0) |
| | Nasopharyngeal | 3 (0.3) | 3 (0.3) |
| | Nasopharyngeal, oropharyngeal and tracheal | 1 (0.1) | 0 |
| Throat and Head (n=321) | Oral cavity | 25 (2.9) | 13 (1.5) |
| | Oropharyngeal | 71 (8.3) | 86 (9.7) |
| | Oropharyngeal and head & neck | 1 (0.1) | 0 |
| | Laryngeal | 66 (7.7) | 28 (3.2) |
| | Laryngeal and Tracheal | 1 (0.1) | 2 (0.2) |
| | Laryngopharyngeal | 8 (0.9) | 14 (1.6) |
| | Laryngopharyngeal and Tracheal | 4 (0.5) | 2 (0.2) |
| Miscellaneous (n=170) | Head and neck | 16 (1.9) | 34 (3.8) |
| | Head and neck and pulmonary | 0 | 1 (0.1) |
| | Tracheal and neurologic | 12 (1.4) | 4 (0.4) |
| | Tracheal, neurologic and cardiovascular | 0 | 2 (0.2) |
| | Tracheal, neurologic, cardiovascular and endocrine | 3 (0.3) | 0 |
| | Tracheal and metabolic | 1 (0.1) | 0 |
| | Esophageal | 31 (3.6) | 48 (5.4) |
| | Esophageal and neurologic | 0 | 1 (0.1) |
| | Temporomandibular joint disorder | 1 (0.1) | 2 (0.2) |
| | Neurologic | 6 (0.7) | 1 (0.1) |
| | Speech disorder | 4 (0.5) | 3 (0.3) |

Figure in parenthesis denotes percentage.

Patients with ear diseases were 642 (36.9%), nose diseases (607; 34.9%), throat diseases (321; 18.4%) and miscellaneous (170; 9.8%), and their associations with gender are depicted in Table 2 and the overall descriptions of the ENT diseases were impregnated in Figure 3. The average number of patients with ear, nose and throat diseases managed per month was seventy three. The most common ear, nose, throat, and head and neck diseases observed in the patients are depicted in Table 3. A total of 43 cases were diagnosed to have comorbid conditions such as diabetes mellitus (type 2), neurological, pulmonary and cardiovascular disorders.

Table 4: Observation of malignancies among cases.

| Malignancy observed | Frequency (n=116) | |
|---------------------|-------------------|----------------|
| | Males (n=81) | Females (n=35) |
| | N (%) | N (%) |
| Oropharyngeal | 24 (29.6) | 5 (14.3) |
| Laryngopharyngeal | 12 (14.8) | 14 (40) |
| Laryngeal | 21 (25.9) | 0 |
| Oral cavity | 11 (13.6) | 5 (14.3) |
| Head and neck | 7 (8.6) | 7 (20) |
| Nasopharyngeal | 3 (3.7) | 3 (8.6) |
| Rhinologic | 2 (2.5) | 0 |
| Otologic | 1 (1.3) | 0 |
| Esophageal | 0 | 1 (2.8) |

Figure in parenthesis denotes percentage.

The malignancy status of the subjects included in this study were also analyzed and recorded. The oropharyngeal malignancies dominated with 29 cases (25%) followed by laryngopharyngeal and laryngeal with 26 (22.4%) and 21 (18.1%) cases respectively which may be related to tobacco chewing, beedi smoking and alcohol consumption predominantly in the low socio-economic study population. The detailed descriptive analysis of the malignancy is depicted in Table 4. Males suffered more for oropharyngeal and laryngeal disorders in a significant manner.

DISCUSSION

The study of prevalence of ENT diseases from various countries as well as various parts of India at different period of times revealed large regional differences in disease pattern. Multiple social and environmental factors are also considered to be the etiological factors for these diseases in developing countries. Major problems faced by rural health sectors are inadequate primary health care, insufficiency of funding and lack of trained manpower.⁹

The frequency of ear, nose and throat disorders among adult population is on the rise in India. In most cases, the patients are not coming to the ENT clinic in earlier stage; most of the studies recorded that the patients are seeking remedy in late stages with complications.¹⁰ There was a marginal gender differences in contrast to other studies.¹¹

The variation could be related to awareness, availability and accessibility.

Providing improved health services and good access to health care in such communities are necessary to decrease the burden of illness.¹² This significantly impairs quality of life; and decreased productivity at work. Annually, rhinitis and sinusitis leads to maximum overall health care expenditures and affects tenth of millions.¹³ and these are not in accordance with our study, which shows predominance in otological disorders.

In this study, nearly 90% of the rural population suffered from ENT ailments and the rest had head and neck disorders. This was primarily due to their habits, status of living and lack of awareness. Although these disorders are not yet considered to be of public health importance, they contribute significantly to the existing burden of health problems in our environment.⁷ Therefore, there is a need for improved public awareness on ear, nose and throat diseases.

Due to increase in pollution, allergic rhinitis and its comorbidities are on the rising trend. Oral cavity and oropharyngeal disorders are common in developing countries due to inadequate treatment, incomplete investigations, improper follow-up, nutritional deficiencies and overburdened health care system. Due to the above reasons, inflammatory and malignant disorders are still the leading cause of morbidity and mortality in developing countries.¹⁴

Further, this study may be extended to analyze geographical distribution of cases in order to elicit the contributing factors for the illnesses and shall be extended to district level so as to find out the disease burden and decide on policies for appropriate care and prevention.¹⁵ ENT disease in adult population especially hearing impairment associated with otitis media and noise induced hearing loss is largely preventable with early detection and intervention.¹⁶ It is worth to establish ENT care in rural and backward areas along with equipments and manpower. Further workshops and CME programmes are required to provide appropriate treatment.

CONCLUSION

From this data, it is clear that the common ENT disorders shall be evaluated for their cause and provided treatment to reduce the burden on tertiary health care centres. To achieve these, health workers in the field and those in the primary care doctors shall be trained to deal with basic diseases and rehabilitation so that the ENT specialist could handle them well.

With proper training of man power at primary care level, even many ENT emergencies can be tackled at their level. Some of the common emergencies such as foreign bodies of ear and nose, minor epistaxis and sudden

sensorineural hearing loss can be diagnosed, and managed early at peripheral centres and morbidity can be reduced. Further, ENT health education shall be incorporated at school level.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Mina R, Bisht RS, Sikarwar V, Arya A. An epidemiological profile of otorhinolaryngological disorders in the patients attending ENT OPD of H.N.B Base teaching hospital of VCSGGRMS & R I, Srinagar, Pauri, Garhwal. *Int J Med Res Rev.* 2015;3:1333-8.
2. Adam DJ, Bain M, Shanks E, Bradbury AW. Geographical inequality in the provision of carotid endarterectomy in Scotland. Scottish Vascular Audit Group. *Br J Surg.* 1998;85:1075-9.
3. Khan MA, Akram S, Usman HB, Khushdil A. Assessment of epidemiological profile of various ENT diseases in school going children and the trends of seeking healthcare in Shangla valley. *J Postgrad Med Inst.* 2016;30:218-21.
4. Fasanla AJ, Lasisi OA. Sinonasal Malignancies: A 10-year review in a Tertiary Health Institution. *J Natl Med Assoc.* 2007;99:1407-10.
5. Zakzouk SM, Jamal TS, Daghistani KJ. Epidemiology of acute otitis media among Saudi children. *Int J Ped Otorhinolaryngol.* 2002;62:219-22.
6. Kim TH, Kang HM, Oh IH, Yeo SG. Relationship between otorhinolaryngologic diseases and obesity. *Clin Exp Otorhinolaryngol.* 2015;8:194-7.
7. Fasanla AJ, Samdi M, Nwaorgu OG. An audit of ear, nose and throat diseases in a tertiary health institution in South western Nigeria. *Pan Afr Med J.* 2013;14:117-24.
8. Rourke T, Tassone P, Philpott C, Bath A. ENT cases seen at a local 'walk-in centre': a one year review. *J Laryngol Otol.* 2009;123:339-42.
9. Joshi RR. Spectrum of otorhinolaryngological diseases in remote rural western Nepal. *Nepal Med Coll J.* 2016;18:86-9.
10. Zeeshan M, Zeb J, Saleem M, Zaman A, Asif K, Tahir M. ENT diseases presenting to a tertiary care hospital. *J Thyroid Res.* 2018;2:16-8.
11. Sigdel B, Nepali R. Pattern of Ear diseases among paediatric ENT patient: An experience from Tertiary Care Centre, Pokhara, Nepal. *J Nepal Paediatr Soc.* 2012;32:142-5.
12. Muftah A, Mackenzie I, Faragher B. Prevalence of chronic suppurative otitis media (CSOM) and associated hearing impairment among school-aged children in Yemen. *Oman Med J.* 2015;30:358-65.
13. Stewart M, Ferguson BJ, Fromer L. Epidemiology and burden of nasal congestion. *Int J Gen Med.* 2010;3:37-45
14. Emerson LP, Job A, Abraham V. A model for provision of ENT health care service at primary and secondary hospital level in a developing country. *Biomed Res Int.* 2013;2013:562-70.
15. Das BK, Nath RK, Joshi M. Epidemiological profile and parameters of ENT diseases and emergencies at Faamch Barpeta. *IOSR J Dent Med Sci.* 2017;16:23-7.
16. Iseh KR, Adegbite T. Pattern and bacteriology of acute suppurative otitis media in Sokoto Nigeria. *Ann Mri Med.* 2004;3:164-6.

Cite this article as: Anwar MM, Jesudoss A, Gowarthan S, Subramanian PT, Prabhusaran N. Spectrum of otorhinolaryngological disorders among hospitalized adults in a tertiary care teaching hospital. *Int J Otorhinolaryngol Head Neck Surg* 2019;5:36-40.