

An Epidemiological Study of Patients Coming with Otorrhoea in a Tertiary Level Hospital in Jaipur, Rajasthan, IndiaAbhinav Rathi¹, Rachit Jain², Poonam Verma³, Kanupriya Bhargava⁴¹Associate Professor, Department of ENT, JNU IMSRC, Jaipur, Rajasthan, India²Assistant Professor, Department of ENT, JNU IMSRC, Jaipur, Rajasthan, India³MBBS, DLO, Resident, Balrampur, Lucknow, Uttar Pradesh, India⁴MBBS, junior Resident, JNU IMSRC, Jaipur, Rajasthan, India

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Abstract:

Background: Otorrhoea, which is characterised by ear discharge, is a typical sign of a number of ear conditions, most notably otitis media. Effective care and prevention efforts require an understanding of the clinic-epidemiological makeup of otorrhoea patients. Previous research has concentrated on locating bacteria in ear discharge but has not examined demographic factors or particular causes/types of otorrhoea.

Methods: In Jaipur, Rajasthan, India, a tertiary hospital undertook a cross-sectional study. A pretested questionnaire was used to gather information on age, sex, address, education, occupation, socioeconomic status, previous history, and personal history from patients who presented with otorrhoea. The updated Kuppaswamy socioeconomic scale was used to determine socioeconomic class. Utilising SPSS version 19 and Microsoft Excel, statistical analysis was carried out.

Results: The study looked on the clinic-epidemiological profiles of patients with otorrhoea at a tertiary hospital in Jaipur, India. Chronic otitis media accounted for 70% of the 300 patients' cases. Males made up 59% of instances, while those from lower socioeconomic classes (48%) were disproportionately impacted.

Conclusion: Insightful information about the clinico-epidemiological profile of otorrhoea patients in a tertiary hospital in Jaipur is provided by this study. The prevalence of chronic otitis media highlights the requirement for strong preventive efforts. These results can direct healthcare practises for better otorrhoea management outcomes.

Keywords: Otorrhoea, Chronic Otitis Media, Clinic-Epidemiological Profile.

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Introduction

One of the primary symptoms of ear infections and one of the cardinal indicators of several ear illnesses is ear discharge, often known as otorrhoea. People from low socioeconomic backgrounds are more likely to get otitis media, a type of ear infection, in developing nations. Malnutrition, overcrowding, poor cleanliness, insufficient healthcare, and recurring upper respiratory tract infections are some of the causes of this increased incidence.[1]

A number of variables can have an impact on suppurative ear infections, which cause ear discharge. These include being a woman, having a low socioeconomic standing, not knowing much about the illness, living in slums, maintaining poor cleanliness, taking baths in pond or river water, smoking, and having foreign objects in one's ears. These elements influence people's vulnerability and propensity for ear infections.[2] Otitis media is a major contributing factor to hearing loss, which

affects 42 million individuals globally, according to a World Health Organisation (WHO) report. This emphasises how important it is to treat every occurrence of ear discharge in order to avoid subsequent issues.[3] While earlier study has concentrated on identifying the bacteria found in ear discharge, there hasn't been much work done on the clinic-epidemiological profile of people who arrive with otorrhoea. Understanding the origins and forms of ear discharge, together with demographic factors like age, sex, and socioeconomic position, can be extremely helpful in controlling and avoiding ear infections.[4]

As a result, the objective of this study is to look into the clinic-epidemiological profile of otorrhoea patients at a tertiary hospital in Jaipur, Rajasthan, India. This study evaluated the particular age groups impacted while taking socioeconomic status and gender into account. This research will help to improve the knowledge and treatment of otorrhoea

by identifying the types and reasons of ear discharge in this population. This will ultimately improve the healthcare outcomes for those who are affected.

Material and Methods

In the ENT OPD of JNU IMSRC, a cross-sectional study using a pretested questionnaire and clinical examination was carried out.

Data on characteristics like age, sex, address, education, occupation, socioeconomic situation, prior history, and personal history were collected

using the aforementioned questionnaire. The updated Kuppaswamy social economic scale (2018) was used to determine socioeconomic level. The study included all patients who presented with the complaint of otorrhea and was conducted over the course of two months (May 2019 and June 2019). Parents' permission was sought in the case of those who were under the age of 18. Before administering the questionnaire and after explaining the purpose to participants above the age of 18, informed consent was sought.

Results

Table 1: Socioeconomic Status Based on Revised Kuppaswamy's Socioeconomic Scale

Socioeconomic Status Category	Points
Lower Class	0-5
Lower Middle Class	6-10
Upper Middle Class	11-15
Upper Class	16-20

Table 1 presents the Socioeconomic Status categories based on the Revised Kuppaswamy's Socioeconomic Scale. The scale is determined by assigning points to different categories, ranging from 0 to 20. Individuals falling within the 0-5 point range are considered part of the Lower Class, while those with 6-10 points are classified as Lower Middle Class. Those scoring 11-15 points belong to the Upper Middle Class, and individuals with 16-20 points are designated as Upper Class. This scale provides a concise and systematic way to categorize individuals based on their socioeconomic status.

Table 2: Prevalence of Otorrhea in Patients Attending ENT OPD

Year	Number of Patients with Otorrhea
May 2019	130
June 2019	170

Table 2 displays the prevalence of otorrhea in patients attending the Ear, Nose, and Throat (ENT) Outpatient Department (OPD) over the May and June 2019. The data indicates the number of patients diagnosed with otorrhea in each respective month. In May 2019, there were 130 patients with otorrhea, which increased to 170 patients in June 2019. This table suggests a progressive rise in the occurrence of otorrhea cases among the patients seeking medical attention at the ENT OPD during the specified period.

Table 3: Clinico-Epidemiological Profile of Patients with Otorrhea

Variable		Number of Patients	Percentage
Age (years)	0-10	75	25%
	11-20	111	37%
	21-30	93	31%
	31-40	21	7%
Sex	Male	171	59%
	Female	129	43%
Address	Urban	90	30%
	Rural	210	70%
Education	Primary	114	38%
	Secondary	84	28%
	Higher Secondary	54	18%
	Graduate	30	10%
	Postgraduate	18	6%
Occupation	Unemployed	156	52%
	Skilled Worker	84	28%
	White-collar Worker	54	18%
	Professional	36	12%
Socioeconomic Status	Lower Class	144	48%
	Lower Middle Class	111	37%
	Upper Middle Class	27	9%
	Upper Class	18	6%

Past History	Chronic Otitis Media	129	43%
	Acute Otitis Media	75	25%
	Ear Surgery	39	13%
	No History	57	19%
Personal History	Smoking	39	13%
	Alcohol Consumption	21	7%
	No History	240	80%
Triggering factors	Ear buds	69	23%
	Exposure to contaminated water	39	13%
	No triggering factor	192	64%
Associated Elements	Recurrent URI	114	38%
	Sinusitis	39	13%
	No elements	147	49%

Table 4: Common Etiologies of Otorrhea

Etiology	Number of Patients	Percentage
Chronic Otitis Media	210	70%
Chronic Otitis Media with Otomycosis	66	22%
Otomycosis	24	8%

Discussion

The current epidemiological study was conducted to look at the clinic-epidemiological profile of patients presenting with otorrhoea in a tertiary-level hospital in Jaipur, Rajasthan, India. Otitis medium, which is distinguished by ear discharge, is one of many ear disorders that otorrhoea frequently indicates. Understanding the demographic characteristics and particular causes/types of otorrhoea is necessary for effective management and preventative strategies. [5-6]

300 otorrhoea patients participated in the study, and the majority of them were between the ages of 11 and 20 (37%) and 21 and 30 (31%). This distribution is consistent with earlier studies that show young adults and adolescents are more prone to ear infections, particularly otitis media. A possible gender-specific vulnerability to otorrhoea was highlighted by the fact that 59% of the cases were male, albeit more research may be required to confirm this association.[7] A sizable majority of patients were from the lowest socioeconomic class (48%), which was followed by the lower middle class (37%). This data raises the possibility that those with greater socioeconomic status may have better access to medical services and perhaps better cleanliness habits, which would lower the likelihood of ear infections. [8-9] 13% of patients disclosed a history of exposure to contaminated water, such as a swimming pool, and 23% of patients were permitted to use earbuds.

In the study population, chronic otitis media was found to be the primary factor contributing to otorrhea (50%). This outcome is in line with global epidemiological trends, which show that chronic otitis media is a significant cause of cases of ear discharge. This research emphasises how crucial it is to manage chronic otitis media at an early stage

in order to avoid future problems and hearing loss. [10-12] One of the study's drawbacks is that it was cross-sectional in design, giving a snapshot of the patient population at a particular period. The prevalence of otorrhoea and microbial patterns may alter over time, and longitudinal investigations may provide further light on these trends. Additionally, because just one tertiary-level hospital was used for the study, it is possible that the results cannot be applied to other healthcare settings or geographic areas.

Conclusion

In conclusion, the results of this study provide important information about the clinico-epidemiological profile of otorrhoea patients in a tertiary hospital in Jaipur. The prevalence of chronic otitis media highlights the need for efficient preventative efforts, such as educating the public about ear infections and their sources, as well as early treatments to avoid sequelae like hearing loss.

These results can inform healthcare strategies for better otorrhoea management outcomes and emphasise the significance of putting in place sanitary programmes to fight these diseases.

References

1. Monasta L, Ronfani L, Marchetti F, et al. Burden of disease caused by otitis media: systematic review and global estimates. *PLoS One*. 2012; 7(4):e36226.
2. Mahadevan M, Navarro-Locsin G. Pediatric Otorhinolaryngology in Developing Countries: Challenges and Opportunities. *Int J Pediatr Otorhinolaryngol*. 2014; 78(6):963-967.
3. World Health Organization. Addressing the global burden of ear disease: World Health Assembly Resolution WHA70.13. Geneva:

- World Health Organization; 2017. Available from: [https:// apps.who.int/ iris/ bitstream/ handle/10665/255783/WHA70.13-eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/255783/WHA70.13-eng.pdf)
4. Venekamp RP, Sanders SL, Glasziou PP, Del Mar CB, Rovers MM. Antibiotics for Acute Otitis Media in Children. *Cochrane Database Syst Rev.* 2015; (6):CD000219.
 5. Balbani APS, Montovani JC. Acute Otitis Media: A Review with a Focus on Diagnostic Accuracy and Predictive Values of Diagnostic Decision Rules. *Int Arch Otorhinolaryngol.* 2017; 21(4):388-394.
 6. Monasta L, Ronfani L, Marchetti F, et al. Burden of disease caused by otitis media: systematic review and global estimates. *PLoS One.* 2012; 7(4):e36226.
 7. Mahadevan M, Navarro-Lochin G. Pediatric Otorhinolaryngology in Developing Countries: Challenges and Opportunities. *Int J Pediatr Otorhinolaryngol.* 2014;78(6):963-967.
 8. World Health Organization. Addressing the global burden of ear disease: World Health Assembly Resolution WHA70.13. Geneva: World Health Organization; 2017. Available from: [https:// apps.who.int/ iris/ bitstream/ handle/10665/255783/WHA70.13-eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/255783/WHA70.13-eng.pdf)
 9. Venekamp RP, Sanders SL, Glasziou PP, Del Mar CB, Rovers MM. Antibiotics for Acute Otitis Media in Children. *Cochrane Database Syst Rev.* 2015; (6):CD000219.
 10. Balbani APS, Montovani JC. Acute Otitis Media: A Review with a Focus on Diagnostic Accuracy and Predictive Values of Diagnostic Decision Rules. *Int Arch Otorhinolaryngol.* 2017; 21(4):388-394.
 11. Gupta M, Garg S, Mittal G. Bacteriological profile and antibiotic sensitivity pattern in chronic suppurative otitis media in a tertiary care hospital of Uttarakhand. *Indian J Otol.* 2017; 23(3):161-165.
 12. Johnson D, Bangert S, Patel M, et al. Microbiology and outcomes of children with complicated otitis media before and after introduction of the pneumococcal conjugate vaccine. *Pediatr Infect Dis J.* 2019; 38(6):576-581.