

Evaluation of Pattern of Hearing Loss Among Patients Attending ENT Department

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Abstract

Background: The aim is to evaluate pattern of hearing loss among patients attending ENT department. **Subjects and Methods:** Seventy- four adult patients in age ranged 18- 58 years of either gender of hearing loss was recruited for the study. Pure tone audiometry was performed using Amplaid 309 clinical audiometer. Pattern of hearing loss and degree of hearing loss was recorded. **Results:** Out of 74 patients, males were 40 and females were 34. Pattern of hearing loss was sensorineural which comprised of measles in 2, meningitis in 1, consanguinity in 10, prenatal causes in 3, maternal in 1, enteric fever in 1, hypoxia in 2 and low birth weight in 1. Under conductive causes were CSOM in 12, Otitis Externa in 5, external bodies in 3, otosclerosis in 2, secretory otitis media in 7, Otomycosis in 2 and cerumen in 1 and there were mixed causes in 21 cases. Degree of hearing loss was mild in 30, moderate in 24, severe in 12 and profound in 8 cases. The difference was significant ($P < 0.05$). **Conclusion:** The most common cause of hearing loss was conductive hearing loss in which chronic suppurative otitis media was prevalent one and maximum patients had mild degree of hearing loss.

Keywords: Chronic Suppurative Otitis Media, Hearing Loss, Otitis Externa.

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Introduction

Hearing skills is one of the most important and pleasurable gifts bestowed by the almighty which affects development of an individual. Hearing impairment is a common problem that affects people of all age groups. It affects more than 1.33 billion people globally.^[1] Hearing impairment at any stage of life can compromise individual's quality of life. Hearing impairment may lead to negative consequences like poor general health, poor academic performance, higher unemployment, social isolation and an increased risk of depression.^[2]

Hearing is the function of the ear which receives the sound by external ear and transmits it to the cochlea in the inner ear via middle ear acoustic impedance matching system.^[3] The task of Cochlea is to assess the environmental sounds and transmit the result of that analysis to the brain.^[4] Any pathology in this system will cause deafness or hearing impairment, which may be conductive, sensorineural or mixed. Sensorineural hearing loss includes: Congenital disorder, which may be Genetic and non-genetic, Perinatal and Acquired disorder.^[5]

Sensorineural hearing loss (SNHL) is one of the types of hearing loss in which the root cause lies in the inner ear, vestibulocochlear nerves or central processory centres of the brain. It can be present at birth (congenital) or can develop later in life (delayed).^[6] It can be genetic or result from an

acquired factor such as disease or injury.^[7] We performed present study to evaluate pattern of hearing loss among patients attending ENT department.

Subjects and Methods

Seventy- four adult patients in age ranged 18- 58 years of either gender of hearing loss was recruited for the study. The study was commenced after obtaining approval from ethical review committee of the institute. All patients gave their written consent.

A case history proforma was prepared and all relevant information such as name, age, gender etc. was recorded. Pattern of hearing loss and degree of hearing loss was recorded. Pure tone audiometry was performed using Amplaid 309 clinical audiometer. Impedance audiometry and speech discrimination was done as and when required. Brain Stem Auditory Evoked Potential (B.E.R.A) was conducted in profound deaf patients who do not understand and execute Pure Tone Audiometry (P.T.A). The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

Results

Out of 74 patients, males were 40 and females were 34 [Table 1].

Pattern of hearing loss was sensorineural which comprised of

measles in 2, meningitis in 1, consanguinity in 10, prenatal causes in 3, maternal in 1, enteric fever in 1, hypoxia in 2 and low birth weight in 1. Under conductive causes were CSOM in 12, Otitis Externa in 5, external bodies in 3, otosclerosis in 2, secretary otitis media in 7, Otomycosis in 2 and cerumen

in 1 and there were mixed causes in 21 cases. The difference was significant ($P < 0.05$) [Table 2].

Degree of hearing loss was mild in 30, moderate in 24, severe in 12 and profound in 8 cases. The difference was significant ($P < 0.05$) [Table 3].

Table 1: Distribution of patients

Total- 74		
Gender	Males	Females
Number	40	34

Table 2: Pattern of hearing loss

Hearing loss	Variables	Number	P value
Sensorineural	Measles	2	0.01
	meningitis	1	
	Consanguinity	10	
	Prenatal causes	3	
	maternal	1	
	Enteric fever	1	
	Hypoxia	2	
Conductive	Low birth weight	1	0.02
	CSOM	12	
	Otitis Externa	5	
	External bodies	3	
	otosclerosis	2	
	Secretary Otitis media	7	
	Otomycosis	2	
Mixed	Cerumen	1	-
		21	

Table 3: Degree of hearing loss

Degree	Number	P value
Mild	30	0.05
Moderate	24	
Severe	12	
Profound	8	

Discussion

Hearing loss has a negative impact on the individual, which may result into poor general health, poor academic performance, higher risk of unemployment and depression. Hearing loss also increases the financial burden to the society.^[8] The pattern of hearing loss may vary between different geographic regions and between different hospitals.^[9,10] Knowledge of pattern of hearing loss can help health personnel to make the proper diagnosis and provide best treatment to the patients.^[11,12] Such study helps in early identification of the hearing problems and their management, ultimately helping to reduce morbidity and improve the quality of life.^[13] Pure tone audiometry (PTA) is a tool used for the diagnosis of hearing loss. It is performed by the audiologists as per the recommendation from the otorhinolaryngologists. PTA gives information regarding the degree, type, configuration of hearing loss and helps in further management planning.^[14] We performed present study to evaluate pattern of hearing loss among patients attending ENT department.

Our results showed that out of 74 patients, males were 40 and females were 34. Janwal et al,^[15] in their study a total of 43003 patients visited ENT OPD and out of them 820 patients were diagnosed with pure sensorineural hearing loss

(SNHL) with a incidence of 19.06 per thousand population and sex ratio of 1.35:1 (male: female). Maximum patients were in the age group of 55-75 (64.27%). Gradual hearing loss was found in 778 (95%) patients and 42 (5%) patients presented with sudden sensorineural hearing loss (SSNHL) with bilateral involvement in 675 (82.3%) and unilateral in 145 (17.6%) patients. Aetiology of SNHL in patients aged more than 15 years could be ascertained in 726 cases (94.5%) and commonest cause was found to be presbycusis (85.9%). In patients less than 15 years, no apparent cause was found in most of the patients (32.6%) followed by syndromic patients, out of which Down's syndrome was most common. Severity of SNHL was severe in 36.8% followed by moderately severe in 29.8% cases.

We observed that pattern of hearing loss was sensorineural which comprised of measles in 2, meningitis in 1, consanguinity in 10, prenatal causes in 3, maternal in 1, enteric fever in 1, hypoxia in 2 and low birth weight in 1. Under conductive causes were CSOM in 12, Otitis Externa in 5, external bodies in 3, otosclerosis in 2, secretary otitis media in 7, Otomycosis in 2 and cerumen in 1 and there were mixed causes in 21 cases. Musani et al,^[16] assessed the frequency and causes of hearing impairment in patients. Frequency of conductive hearing loss was 50%, sensorineural hearing loss 20% and mixed hearing loss in

30%. CSOM remains the most common cause in this study. In majority of cases of sensorineural hearing loss, prenatal and perinatal factors predominate. Consanguinity was the most frequent factor in this study in sensorineural type of hearing loss. Conductive hearing loss is more prevalent than sensorineural hearing loss by a ratio of 2.5:1. Otitis media remains the commonest cause in 76%. Prevention of prenatal and postnatal factors can decrease the frequency of sensorineural hearing loss.

We found that degree of hearing loss was mild in 30, moderate in 24, severe in 12 and profound in 8 cases. Khanal et al,^[17] evaluated the pattern of hearing loss among 1654 patients. 294 patients had normal hearing on both ears. So, a total of 1360 patients had hearing loss. Among 1360 patients, 897 (66%) cases were male and 463 (34%) were female. Most commonly affected age group was 31-40 years followed by 21-30 years age group. Out of 1360 patients, 432 (31.76%) patients had unilateral hearing loss whereas 928 (68.24%) cases had bilateral hearing loss. Sensorineural hearing loss was the most common 1349 (49.60%), followed by conductive 683 (25.11%) and mixed 256 (9.41%) hearing losses respectively. Conductive hearing loss was more common in younger age groups whereas sensorineural hearing loss was more common in older age groups. Mild hearing loss was seen in 1079 ears (39.67%), moderate in 671 (24.67%), severe in 368 (13.52%) and profound in 170 (6.25%). The mean hearing threshold was 42.90 ± 19.26 dB on right ear and 42.60 ± 18.76 dB on left ear with no statistically significant difference (p value -0.68). Hearing loss was more common in male population with younger age group involvement. Sensorineural hearing loss was the most common type. Mild degree of hearing loss and bilateral involvement was most common. Bainbridge K et al,^[18] reported the risk for SNHL in persons with diabetes. Noise induced hearing loss (NIHL) was noticed in 14 cases (2%) and all the 14 cases were between the age group of 15-45 years.

Conclusion

The most common cause of hearing loss was conductive hearing loss in which chronic suppurative otitis media was prevalent one and maximum patients had mild degree of hearing loss.

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