

Research Article

Pattern of hearing loss among patients visiting ENT OPD at Janaki Medical College: A cross sectional study

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ABSTRACT

Background and Objectives: To study the pattern of hearing loss among patients visiting ENT OPD in Janaki medical college teaching hospital.

Material and Methods: The study was conducted in department of ENT- head and neck surgery in Janaki medical college teaching hospital from June to December 2016. All the clinically diagnosed cases with hearing impairment were enrolled in the study and hearing assessment done. Demographic data and PTA assessment were taken.

Results: Total of 119 patients were enrolled. Among them, male were 58(48.7%) and female 61(51.3%). In age distribution, commonly affected age group was 21-30 years followed by 31-40 years group. On comparing hearing level between both the ears, right ear was having mean hearing threshold of 45.4454 dB and left ear having 47.3277 dB with standard deviation 16.54665, 15.98363 respectively. The difference between both the values is statistically not significant (p value- 0.165). On evaluating type of hearing loss between both the ears, there were almost similar frequencies of hearing loss pattern (p value- 0.190). Out of 119 patients, 20(8.4%) were having unilateral hearing loss. So total of 218(91.6%) ears were affected out of 238 ears. Among them 116(48.8%) ears had conductive hearing loss, 30(12.6%) ears had sensori-neural hearing loss and 48(20.2%) ears had mixed hearing loss. On evaluating degree of hearing loss, patients were mostly having mild hearing loss (41.2%) followed by severe hearing loss (25.2%), moderate hearing loss (24.4%). There was almost similar degree of hearing loss in both the ears with statistically insignificant (p value- 0.379).

Conclusion: Hearing impairment commonly involved female with younger population involvement. Hearing impairment was mostly conductive type. Hearing loss was mostly mild degree and bilateralism is common.

Key Words: Hearing impairment, PTA, Conductive, sensorineural, mixed

INRODUCTION

Hearing loss is one of the commonest morbidity affecting all age groups which can be congenital or acquired. It is the third leading chronic disability following arthritis

and hypertension (1). Hearing loss can be conductive, sensorineural or mixed. Conductive hearing loss can be caused by tympanic membrane perforation, middle ear atelectasis, tympanosclerosis, ossicles destruction, and cholesteatoma. Infection and

inflammation components transmit to the middle ear through round window cause cochlear destruction and sensorineural hearing loss (4). Sensorineural hearing loss is caused by diseases of cochlea or central auditory pathways. Hearing impairment is affecting nearly 250 million people in the world, and 75% of sufferers live in developing countries (2). Study by Little et al (3) showed around 16.6% of total population in Nepal, had hearing impairment. This study was conducted to see type of hearing loss with pattern and severity of hearing loss in mid central part of Nepal.

MATERIALS AND METHODS

The study was conducted in department of ENT- head and neck surgery in Janaki medical college teaching hospital from June to December, 2016. Patients visiting with hearing impairment were included in the study. Patients below 7 years were excluded from study. Informed consent was taken from all the patients. Written approval from institutional review board was taken. Demographic findings noted, examination done and advised for hearing assessment with pure tone audiometry. Hearing threshold was calculated from pure tone average of 4 frequencies 0.5, 1, 2 and 4 KHz for air conduction and bone conduction. SPSS 21 version used to evaluate the statistics. P value less than 0.05 was taken as level of significance.

RESULTS

Total of 119 patients were included in the study. Among them, 58 (48.74%) were male and 61 (51.26%) were females. In age distribution, commonly affected age group was 21-30 years followed by 31-40 years group (figure 1).

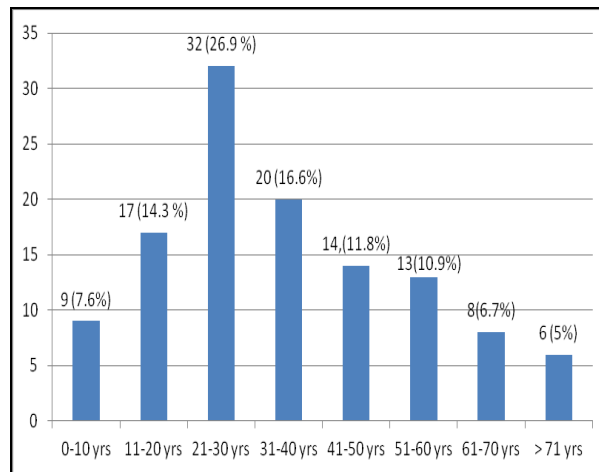


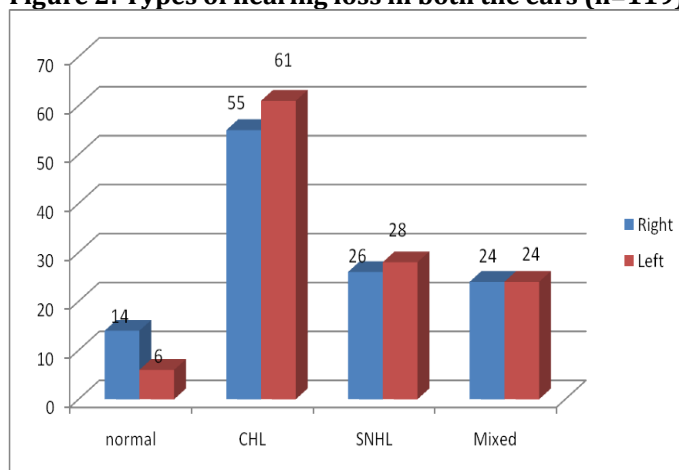
Figure 1: Age group distribution (n=119)

On comparing hearing level between both the ears, right ear was having mean hearing threshold of 45.445 dB and left ear having 47.33 dB with standard deviation 16.55, 15.98 respectively. The difference between both the values is statistically not significant (p value- 0.165). On evaluating type of hearing loss between both the ears, there were almost similar frequencies of hearing loss pattern (p value-0.190).

Table 1: Hearing threshold level (n=119)

Hearing	Mean ± SD	p-value
Right Ear Hearing	45.45 ± 16.55	0.165
Left Ear Hearing	47.33 ± 15.98	

Figure 2: Types of hearing loss in both the ears (n=119)



Out of 119 patients, 20 (8.4%) were having unilateral hearing loss. So total of 218 (91.6%) ears were affected out of 238 ears. Among them 116 (48.8%) ears had conductive hearing loss, 30 (12.6%) ears had sensorineural hearing loss and 48 (20.2%) ears had mixed hearing loss. There is clustering of CHL in younger age groups while SNHL and mixed hearing loss were seen in older age groups as shown in fig 3 and 4.

On evaluating degree of hearing loss, patients

Figure 3: Distribution of hearing loss type in right ear with age group (n=119)

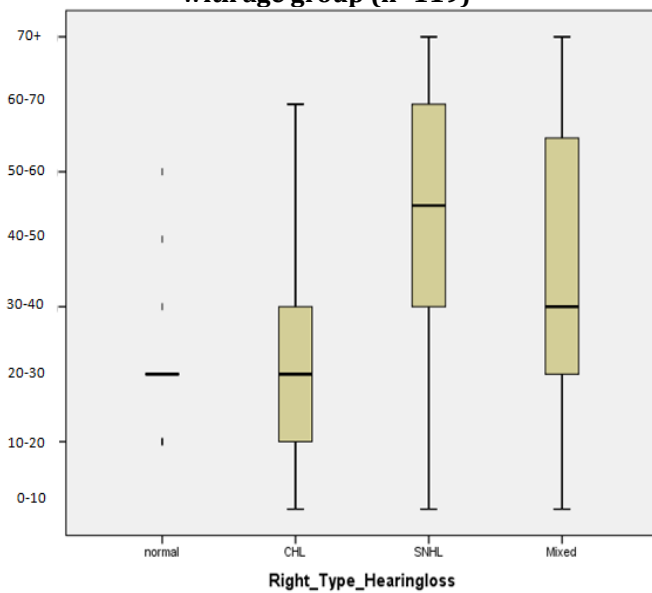
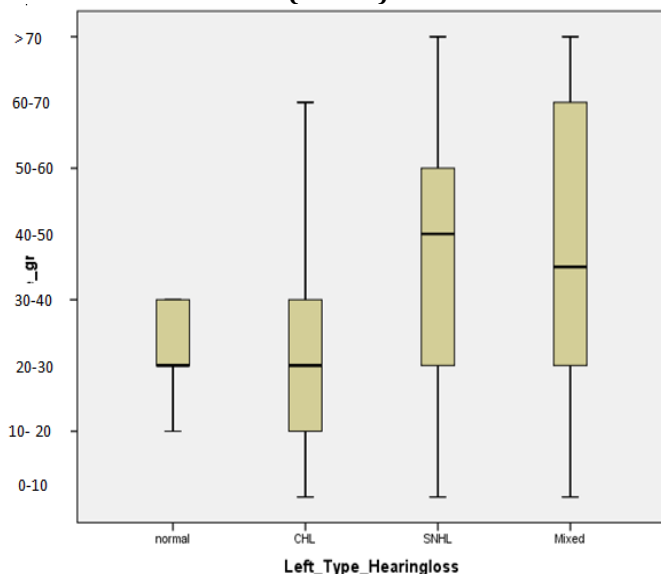


Figure 4: Distribution of hearing loss type in left ear with age group distribution (n=119)



were mostly having mild hearing loss (41.2%) followed by severe hearing loss (25.2%), moderate hearing loss (24.4%). There was almost similar degree of hearing loss in both the ears with statistically insignificant level (p value- 0.379) as shown in figure 5.

DISCUSSION

Hearing impairment is one of commonest morbidity affecting daily activities. It can be congenital or acquired. It is the public health problem in developing countries and even in developed countries.

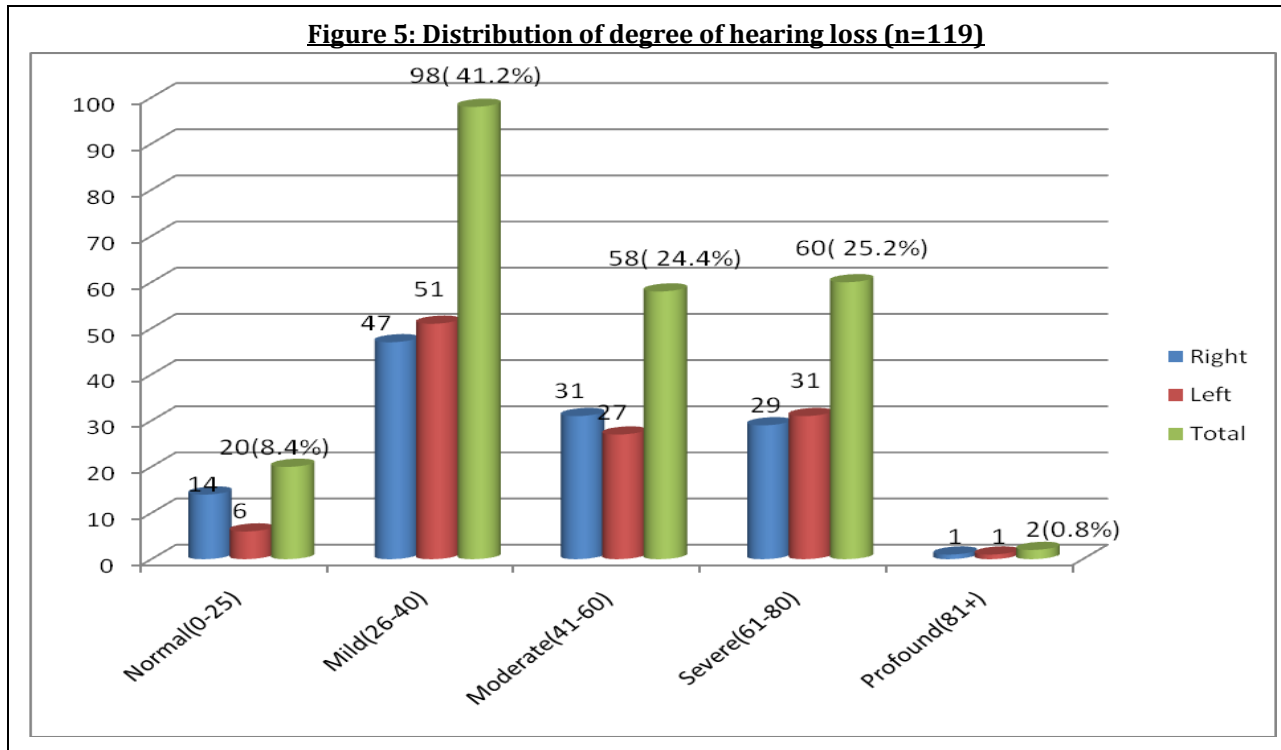
In our study we studied 119 patients visiting with hearing impairment. Among them 99 patients were having bilateral hearing loss. Commonly affected age groups were 21-30yrs age group followed by 31-40yrs group. This result in accordance with study by Islam et al(5).

Among patients with hearing impairment conductive hearing loss (48.8%) was most common followed by mixed (20.2%) and sensorineural hearing loss(12.6%) respectively. Study done in Tanzania showed more incidence of sensorineural hearing loss than conductive and mixed hearing loss(6). When studying incidence among male and female patients, female(51.3%) were more affected than male(48.3%). This result is in accordance with Olusesi et al's study(7). Other studies showed male more affected than female (8-12). There was clustering of cases with conductive hearing loss in younger age groups in 11-20, 21-30, 31-40 yrs age groups. But cases with sensorineural and mixed hearing loss evenly involved patients above 20-30 yrs age group. Patients were mostly having mild hearing loss followed by severe and moderate hearing loss. Study by Paul (13) showed most patients(68.3%) had mild and moderate hearing loss. Less sample

size was limitation of study and large sample size is required for better result.

AUTHOR’S CONTRIBUTION:

NL- Planning, Data collection, data analysis



and final manuscript preparation.

CONCLUSION

From our study it can be concluded than hearing impairment commonly involved female with younger aged involvement. So, preventive measures should be targeted to younger population to curb chronic disability. Hearing impairment was mostly conductive followed by mixed and sensorineural hearing loss. Hearing loss was mostly mild degree and bilaterality is common.

ACKNOWLEDGEMENT

I would like to thank Mr. Ram Prakash Mahato for carrying out pure tone audiometry for all the patients. Also I would like to thank Dr. Niranjana K. Goit and Mr. Jai Kisun Yadav for helping and collecting data.

SOURCE OF SUPPORT: Janaki Medical College teaching Hospital, Janakpur, Nepal.

CONFLICT OF INTEREST: None declared.

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