

An Audit on Hearing Loss in a Rural Tertiary Care Hospital

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Abstract: Objectives: To audit retrospectively the data of our patients, who presented with hearing loss in our department.

Materials and Methods: Retrospective descriptive study over a period of 2 years (April, 2016 to March, 2018), Total no of patients included into this study were 5478 who were assessed demographically and audiological in the department of ENT, Burdwan Medical College, Burdwan.

Results: 5478 patients attended our ENT OPD for audiological assessment of hearing from April 2016 to March 2018. 2786 patients found to have normal hearing. 2692 (49.14%) patients had hearing loss. 1445 (53.67%) patient out of 2692 had conductive hearing loss.

Conclusion : It is very much essential to continuously monitor the prevalence of hearing loss, early identification of hearing loss, early intervention and proper rehabilitation in the community so that steps can be taken to reduce the burden of this disability in our community.

Keywords: Hearing loss; Conductive hearing loss; Sensori-neural hearing loss ; Mixed hearing loss

Date of Submission: 04-04-2019

Date of acceptance: 19-04-2019

I. Introduction

Hearing is one of the five special senses of our body. Anyone at any age can be affected by hearing loss. Hearing impairment grossly hampers the communicative skill of an individual. It is one of the most prevalent chronic conditions after hypertension and arthritis [1]. Also. In relation to public health, hearing impairment is known to be associated with depression, diabetes and dementia [1].

II. Materials and methods

This retrospective study was carried out at ENT department of Burdwan Medical College & Hospital, Burdwan - a tertiary level hospital between April, 2016 to March, 2018. Data obtained from the medical records of patients presented with complaint of hearing loss in the out patient department of ENT, Burdwan Medical College & Hospital, Burdwan, from April, 2017 to Sept 2018. Detailed history, clinical findings of patients were assessed. Hearing assessment was performed by Pure tone audiometry in patients above 5 years of age and by Brain stem evoked response audiometry in patients below 5 years. Data collected were analysed. Demographic characteristics were compared with types and degree of hearing loss. Types of hearing loss were grouped into three types i.e. Conductive hearing loss, Sensorineural hearing loss and mixed hearing loss. The degree of hearing impairment was graded as mild (25-40 dB threshold), moderate (41-55 dB threshold), moderately severe (56-70 dB threshold), severe (71-90 threshold), and profound (>90 dB threshold) [2].

III. Observation

5478 patients attended our ENT OPD for audiological assessment of hearing from 1st April 2016 to March 2018. 2786 patients found to have normal hearing. 2692 (49.14%) patients had hearing loss. 1445 (53.67%) patient out of 2692 had conductive hearing loss. 1080 (40.11%) patients had sensorineural hearing loss & 167 (6.22%) patients had mixed hearing loss. Out of 1445 patient 772 (53.43%) had mild conductive hearing loss, 654 (45.26%) patients had moderate conductive hearing loss and 19 (1.31%) patients had severe conductive hearing loss. Out of 1080 patients 270 (25%) had mild sensorineural hearing loss, 233 (21.57%) had moderate sensorineural hearing loss, 301(27.87%) had severe sensorineural hearing loss & 276 (25.56%) had profound sensorineural hearing loss. Out of 167 mixed hearing loss patients 11(6.58 %) had moderate mixed hearing loss, 74 (44.31%) had severe mixed hearing loss and 82 (49.11%) had profound mixed hearing loss [Table 2]. Majority of patients (1616) with hearing impairment falls within the age group between 16-50 yrs [Table 1]. Male female ratio is 1.35 [Table 1].

IV. Discussion

Table 1 shows there are four category of according to age.

Age group-I (0-5yrs): In this age 157(83 Male & 74 Female) patients were there. The conductive components affect more in female than that of male. Sensorineural hearing loss is found more in male patient. Mix component are dominant in male category.

Conductive hearing loss: Total 32 (15 Male & 17 Female) patients reported of middle ear pathology in age group –I. Among 15 male patients 6 have mild conductive hearing loss, 8 have moderate conductive hearing loss, one patient who has bilateral atresia of pinna has severe conductive hearing loss. In female category, 6 patients have mild conductive hearing loss, 9 patients have moderate conductive hearing loss, 2 patients who have bilateral atresia of pinna has severe conductive hearing loss.

Sensorineural hearing loss: 99 (50Male & 49 Female) patients had sensorineural hearing loss. Among 50 male patients 2 have mild sensorineural hearing loss, 3 have moderate sensorineural hearing loss, 21 patients have severe sensorineural hearing loss. 24 patients have profound sensorineural hearing loss. In female category, among 49 patients 1 have mild sensorineural hearing loss, 3 have moderate sensorineural hearing loss, 18 patients have severe sensorineural hearing loss. 27 patients have profound sensorineural hearing loss.

Mixed hearing loss: 26 (18 Male & 8 Female) patients had mixed hearing loss. Among 18 male patients 1 had moderate mixed hearing loss, 8 patients have severe mixed hearing loss. 9 patients have profound mixed hearing loss. In female category, among 2 patients had severe Mixed hearing loss. 6 patients have profound mixed hearing loss.

Age group-II (6-14yrs): In this age 427 (226 Male & 201 Female) patients were there. The conductive components affect more in male than that of female. Sensorineural hearing loss is found more in female patient. Mix component are dominant in male category.

Conductive hearing loss: Total 203 (119 Male & 84 Female) patients reported of middle ear pathology in age group –II. Among 119 male patients 56 have mild conductive hearing loss, 55 have moderate conductive hearing loss and 8 had severe conductive hearing loss. In female category, out of 84 patients, 47 patients have mild conductive hearing loss, 34 patients have moderate conductive hearing loss and 3 patients had severe conductive hearing loss.

Sensorineural hearing loss: 201 (94 Male & 107 Female) patients had sensorineural hearing loss. Among 94 male patients 29 have mild sensorineural hearing loss, 23 have moderate sensorineural hearing loss, 21 patients have severe sensorineural hearing loss. 21 patients have profound sensorineural hearing loss. In female category, among 107 patients 24 have mild sensorineural hearing loss, 29 have moderate sensorineural hearing loss, 27 patients have severe sensorineural hearing loss. 27 patients have profound sensorineural hearing loss.

Mixed hearing loss: 23 (13 Male & 10 Female) patients had mixed hearing loss. Among 13 male patients 2 had moderate mixed hearing loss, 2 patients have severe mixed hearing loss. 9 patients have profound mixed hearing loss. In female category, among 1 patient had moderate Mixed hearing loss, 3 patients had severe Mixed hearing loss. 6 patients have profound mixed hearing loss.

Age group-III (16-50yrs): In this age 1666 (959 Male & 707 Female) patients were there. The conductive components affect more in male than that of female. Sensorineural hearing loss is found more in male patient. Mix component are dominant in male category.

Conductive hearing loss: Total 972 (577 Male & 395 Female) patients reported of middle ear pathology in age group –III. Among 577 male patients 343 have mild conductive hearing loss, 231 have moderate conductive hearing loss and 3 had severe conductive hearing loss. In female category, out of 395 patients, 194 patients have mild conductive hearing loss, 199 patients have moderate conductive hearing loss and 2 patients had severe conductive hearing loss.

Sensorineural hearing loss: 616 (339 Male & 277 Female) patients had sensorineural hearing loss. Among 339 male patients 90 have mild sensorineural hearing loss, 82 have moderate sensorineural hearing loss, 98 patients have severe sensorineural hearing loss. 69 patients have profound sensorineural hearing loss. In female category, among 277 patients 82 have mild sensorineural hearing loss, 47 have moderate sensorineural hearing loss, 76 patients have severe sensorineural hearing loss. 72 patients have profound sensorineural hearing loss.

Mixed hearing loss: 78 (43 Male & 35 Female) patients had mixed hearing loss. Among 43 male patients, 17 have severe mixed hearing loss. 26 patients have profound mixed hearing loss. In female category, 4 patients had moderate Mixed hearing loss, 18 patients had severe Mixed hearing loss. 13 patients have profound mixed hearing loss.

Age group-IV (>50yrs): In this age 442 (250 Male & 192 Female) patients were there. The conductive components affect more in male than that of female. Sensorineural hearing loss is found more in male patient. Mix component are dominant in male category.

Conductive hearing loss: Total 238 (128 Male & 110 Female) patients reported of middle ear pathology in age group –IV. Among 128 male patients 61 have mild conductive hearing loss, 67 have moderate conductive hearing loss. In female category, out of 110 patients, 59 patients have mild conductive hearing loss, 51 patients have moderate conductive hearing loss.

Sensorineural hearing loss: 164 (101 Male & 63Female) patients had sensorineural hearing loss. Among 101 male patients 25 have mild sensorineural hearing loss, 31 have moderate sensorineural hearing loss, 26 patients have severe sensorineural hearing loss. 19 patients have profound sensorineural hearing loss. In female category, among 110 patients 17 have mild sensorineural hearing loss, 15 have moderate sensorineural hearing loss, 14 patients have severe sensorineural hearing loss. 17 patients have profound sensorineural hearing loss.

Mixed hearing loss: 40 (21 Male & 19 Female) patients had mixed hearing loss. Among 21 male patients, 2 patients had moderate mixed hearing loss, 13 have severe mixed hearing loss. 6 patients have profound mixed hearing loss. In female category, 1 patients had moderate Mixed hearing loss, 11 patients had severe Mixed hearing loss. 7 patients have profound mixed hearing loss.

The prevalence of hearing loss increased with age among all demographic groups [3]. The age of onset of hearing loss is usually on the higher side, probably because of higher life expectancy in developed countries [4,5,6,7].

V. Conclusion

It is very much essential to continuously monitor the prevalence of hearing loss, early identification of hearing loss , early intervention and proper rehabilitation in the community so that steps can be taken to reduce the. can reduce the burden of this disability in our community.

VI. Tables

Table – 1: Distribution of types of hearing loss in various age group and sex

Age →	0-5 years		6-15 years		16-50 years		>50 years		Total	
	M	F	M	F	M	F	M	F	M	F
Types of hearing loss ↓										
Conductive hearing loss	15	17	119	84	577	395	128	110	839	606
Sensori-neural hearing loss	50	49	94	107	339	227	101	63	584	446
Mixed hearing loss	18	8	13	10	43	35	21	19	95	72

Table – 2: Distribution of various degree of hearing loss in different age group and sex

Degree of hearing loss	0 to 5		6 to 15		16 to 50		>50		TOTAL	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Mild hearing loss	8	7	85	71	433	276	86	76	612	430
Moderate hearing loss	12	12	80	64	313	250	100	67	505	393
Severe hearing loss	30	22	31	33	118	96	39	25	218	176
Profound hearing loss	33	33	30	33	95	85	25	24	183	175
Normal Hearing	1318	1257	29	32	36	39	41	34	1424	1362

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Ritam Ray. "An Audit on Hearing Loss in a Rural Tertiary Care Hospital." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 18, no. 4, 2019, pp 11-14.