

Pattern of Hearing Loss as seen at the Federal Medical Centre Lokoja, Nigeria: A Five Year Retrospective Study

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ABSTRACT--- *Background - Hearing Loss is a common cause of hospital visitation all over the world. In Nigeria alone it is estimated that one in seven children has hearing loss and this is quite worrisome due to the burden of the disease.*

The aim of this study was to determine the pattern of hearing loss amongst patients seen in an urban tertiary O.R.L clinic in Lokoja, Nigeria.

Methods – A five-year retrospective review of patients seen between January 2009 and December 2013 in O.R.L outpatient clinic of the Federal Medical Centre, Lokoja. Out of 9,712 patients seen, 564 (5.8%) had hearing loss of whom only slightly more than half ever had a hearing test. They include 164 males (49%) and 172 females (51%) whose ages range from 6 to 85years. Unilateral hearing loss was seen in 126 patients while 210 had bilateral loss, giving a total of 546 ears that were studied and analyzed.

Result- A male to female ratio 1:1.05 was found. There was normal hearing in 5.0% of cases while the remaining 95% of cases had sensorineural or conductive or mixed hearing loss. Ototoxicity (31%) was found to be the commonest cause of hearing loss, followed by wax impaction (28.9%). Sensorineural hearing loss was found to be the commonest type of hearing loss in this study (47.0%), followed by conductive 31.0% and lastly mixed 17.0%. Most (42.5%) had moderately severe type of hearing loss and the modal age group was 20-29years.

Conclusion – Ototoxicity, moderately severe sensorineural hearing loss were found commonest in this study. Hence, we advised the government and non-governmental agencies to help put facilities in place for screening, early diagnosis and proper management.

Keywords--- Pattern, Sensorineural, Conductive, Mixed, Hearing Loss, Ototoxicity

1. INTRODUCTION

Otological diseases are common in the practice of Otolaryngology, and hearing loss is one of such diseases. In Nigeria, a study carried out among school children in Lagos shows that 13.9 per cent of the school pupils had hearing loss. [1] The elderly patients are however not exempted as a study by Aremu et al found that 21% of otological diseases in the elderly is hearing loss [2]. There are three types of peripheral hearing loss, conductive, sensorineural and mixed. A conductive hearing loss occurs in a situation in which there is a decrease in the transmitted sound through the canal and middle ear into the inner ear. This may be caused by a problem in either the outer or middle ear. In this case there is usually no problem with the inner ear. Possible causes include wax in the ear canal, a wide perforation in the tympanic membrane, infection in the ear, fluid accumulation in the middle ear, superior canal dehiscence arguable, tympanosclerosis, foreign body in the canal etc. This type of loss responds well to either medical or surgical treatment depending on the case. For instance, myringotomy and grommets insertion is the most common surgery performed in children [3]. In sensorineural hearing loss the problem is in the inner ear or along the nerve pathway between the inner ear and the brain. This type of loss may be caused by aging, infections such as labyrinthitis, noise exposure, genetic disorder, trauma etc. The etiology of this type of hearing loss in children sometimes may not be known (probably congenital), but a good number of them may be caused by febrile illnesses such as meningitis according to Dunmade et al [4]. Such hearing loss is usually difficult to treat and may require a hearing device or implant as part of an extensive aural rehabilitation programme.

2. MATERIALS AND METHOD

This is a five-year retrospective study that was carried out at the ENT Division of the Department of Surgery, Federal Medical Centre, Lokoja, Nigeria. Patients seen between January 2009 and December 2013 above the age of five years and had diagnostic Pure Tone Audiometric tests (PTA) done were selected for the study. The Patients case files were identified and retrieved from the Central Medical Records. The information obtained includes age, gender, cause of hearing loss, records of ear examination and Pure Tone Audiometric tests. Hearing thresholds were thus categorized into within normal limits (0 to 25 dB), mild hearing loss (26–40 dB), moderate hearing loss (41–70 dB), severe hearing loss (71–90 dB), and profound hearing loss (>90 dB). Types of hearing loss were then classified as conductive, sensorineural or mixed. From the 9,712 patients seen in the ENT clinic during the five-year period of study, 564 (5.8%) had hearing loss, but only 336 patients (3.5%) met the inclusion criteria for hearing loss diagnosis. Out of this 336 patients, 126 had unilateral hearing loss while 210 had bilateral involvement, giving a total of 546 ears that were studied and analyzed.

3. RESULTS

Male to female ratio was 1:1.04, mean age 37.28 ± 1.71 and the modal age was 20-29 years as shown in table I. Ototoxicity was found to be the commonest cause of hearing loss in this study with a frequency of 47.0%, followed by conductive 31.0% and mixed 17% as shown in table II. Normal hearing was found in 5% of the population but most had moderately severe hearing loss 40.2 %, followed by severe 25.1% and mild 18.7% respectively (table III). Ototoxicity was found to be the commonest cause of hearing loss (31.0%), followed by wax impaction (28.9%), while neoplasm is the least common (0.5%) as shown in table IV.

Table I: Age Distribution.

Age group (yr)	Frequency	%
0-9	24	7.1
10-19	52	15.5
20-29	58	17.2
30-39	46	13.7
40-49	47	14.0
50-59	42	12.5
60-69	43	12.8
70-79	18	5.4
80-89	6	1.8
Total	336	100

Table II: Hearing loss Classification.

Pattern	Frequency	Male	Female
NH	27 (5.0%)	11 (2.0%)	16 (3.0%)
SNHL	257 (47.0%)	131 (24.0%)	126 (23.0%)
CHL	169 (31.0%)	93 (17.0%)	76 (14.0%)
MHL	93 (17.0%)	27 (5.0%)	66 (12.0%)
Total	546 (100%)	262 (48.0%)	284 (52.0%)

KEY: NH=Normal Hearing, CHL=Conductive Hearing Loss, SNHL= Sensorineural Hearing Loss and MHL= Mixed Hearing Loss

Table III: Categorization of hearing loss severity

Severity	Decibel (dB)	Frequency	%
Normal	0-25	27	5.0
Mild	26-40	102	18.7
Moderate	41-70	219	40.2
Severe	71-95	137	25.1
Profound	>95	61	11.0
Total		546	100

Table IV: Etiology of hearing Loss.

Causes	Number	%
Ototoxicity	169	31.0
Ear wax	158	28.9
Otitis media	104	19.1
Congenital	87	15.9
Trauma	5	0.9
Neoplasm	3	0.5
Unspecified	20	3.7
Total	546	100

4. DISCUSSION

Out of 546 patients that were reviewed for hearing loss, 210 (38.5%) of them could not carry out the Pure Tone Audiometric (PTA) test required to determine the type of hearing loss and its severity. This may either be due to patient's ignorance or lack of fund to carry out such investigation in our environment. Only 336 patients (61.5%) who were able to carry out the PTA test were included in the study. The male to female ratio of 1:1.04 shows a slight female preponderance of which we are not surprised. The prevalence of hearing loss vary widely from one region to another [5-7] however, in our study, we found a prevalent rate of 3.5%. Stevens et al found a hearing impairment prevalence of 1.4% after analyzing 42 studies in 29 countries. They also found that hearing impairment is higher in middle and low income countries [7]. Nash et al found a much higher prevalence of hearing impairment of 14.1% in their study [8].

In this study most of the patients with hearing loss were in their third decade (age group 20-29 years), of life. This is similar to what was reported by Researchers at Obafemi Awolowo University Teaching Hospital Complex Ile - Ife, Nigeria; who found out that hearing loss was commonest in the third decade and that sensorineural hearing loss was the commonest type of hearing loss found in their study [9]. However, findings in this study were different slightly from findings of a similar research done in Kaduna which found a lower age group for males but their female had similar age group [10]. This may be due to the geographical region in which the studies were carried out.

5. REFERENCES

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