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Incidence of Ear Disorders in a Semi-Urban Areas: A Hospital Based Study

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Abstract
Background: *In under developed and developing countries, hearing problems and ear issues are generally neglected. Therefore there is the need of the era for prompt diagnosis and management along with adequate awareness and knowledge amongst the subjects. The aim of the present study was to determine the most commonly seen ear disorders that can cause hearing impairment in semi urban areas.*
Materials and Methods: *The survey included all the subjects between 5-60 years of age. For right and left ear audiometric threshold were established. Pure tone average value was used to determine the threshold scores. For this purpose Amplivox audiometer was used. Complete examination of the ear was done to determine the cause of hearing impairment. All the data was arranged in a tabulated form and analysed using SPSS software. Frequency distribution of all the data was done.*
Results: *The present study enrolled 300 subjects, out of which 100 were between 5-15 years of age and 20 were between 16-60 years of age. There were 47% subjects between 5-15 years of age and 24% subjects between 16-60 years of with ear disease. There were 7% subjects between 5-15 years of age and 18% subjects between 16-60 years of with infectious disease. Ear disease were frequently seen in children and the most common cause of impairment was Chronic suppurative otitis, seen in 45% (n=135).*
Conclusion: *From the study it is clear that, ear diseases are very common amongst the subjects of the district. The most common cause of hearing impairment being chronic otitis media in our study.*
Keywords: *Disease, Impairment, Hearing, suppurative.*

Introduction

Due to lack of resources and will there are few studies on hearing impairment. Whereas very few people know that many of these hearing deficits can be prevented or avoided. In under developed and developing countries, hearing problems and ear issues are generally neglected. Congenital hearing loss is a concern as many children are born in high risk areas like with low birth weight, poor socioeconomic status, lacks of hygiene, respiratory tract infections etc[1]. Adult onset hearing loss contributes to the 2nd highest

percentage of disability years[2]. Therefore there is the need of the era for prompt diagnosis and management along with adequate awareness and knowledge amongst the subjects. The burden of disabled hearing loss amongst children and the elderly subjects is found to be greatest amongst the Asian Pacific area and southern Asia[3].According to WHO Global Burden of Disease There should be repeated studies on prevalence of hearing impairment to obtain more accurate estimation of trends in hearing loss[4].According to retrospective studies by Stephen and Abraham in a tertiary centre, prevalence of 5.8%were seen in North western region of Nigeria. As per Kodiya et al. It was 26.2% in the same region.[5,6]. But these regional studies do not show the complete picture but community based surveys like those conducted by Lagos show a clearer picture.[7, 8] More than 50% of the child onset deafness is hereditary in nature and out of them 75-80% are recessive traits and rest dominant.[9,10] Some of the common disease in which hearing loss can be seen are meningitis, ear infections, ototoxicity, measles, mumps and trauma. Hearing inadequacy varies in different regions of the world as per the age, gender, cause and availability of health care resources. The aim of the present study was to determine the most commonly seen ear disorders that can cause hearing impairment in semi urban areas.

Materials and Methods

The present cross sectional community based survey was conducted in department of ENT, Government D.B. General Hospital, Churu, Rajasthan, India. The study was approved by the institutional ethical committee and all the subjects were informed about the study. A written consent was obtained from all in their vernacular language. It was based on WHO's Ear and Hearing disorders survey. The survey included all the subjects between 5-60 years of age. For right and left ear audiometric threshold were established. Pure tone average value was used to determine the threshold scores.For this purpose Amplivox audiometer was used. Noise level for testing was kept at or below 40dB. Validation checks were done at random time and normal and abnormal audiometric values were compared. The study included a sample of 250 subjects. A study sample of 300 was enrolled in the study. Every subjects detailed demographic information, medical and family history were taken into consideration. Complete examination of the ear was done to determine the cause of hearing impairment. All the data was arranged in a tabulated form and analysed using SPSS software. Frequency distribution of all the data was done.

Results

The present study enrolled 300 subjects, out of which 100 were between 5-15 years of age and 20 were between 16-60 years of age. There were 210 males and 90 females. The mean age of the subjects was 37.98+/- 13.78 years.

Table 1 shows the causes of ear disease. There were 33% subjects between 5-15 years of age and 27% subjects between 16-60 years of with normal ear. There were 47% subjects between 5-15 years of age and 24% subjects between 16-60 years of with ear disease. There were 7% subjects between 5-15 years of age and 18% subjects between 16-60 years of with infectious disease. There were 2% subjects between 5-15 years of age and 6% subjects between 16-60 years of with genetic conditions. In 11% of the cases between 5-15 years of age and 25% of the subjects between 16-60 years of age the cause was undetermined.

Table 2 shows the prevalence of ear disease. Ear disease were frequently seen in children and the most common cause of impairment was Chronic suppurative otitis, seen in 45% (n=135). The next most common cause was in 21% of the cases. Foreign body was seen in 3% (n=9) cases. In 7%5(n=21) acute otitis media was seen. Otits externa was seen in 5% (n=15) cases.

Table 1: Causes of ear disease or hearing loss

CAUSE	5-15 YEARS	16-60 YEARS	TOTAL
Normal	33%/33	27%/54	87
Ear disease	47%/47	24%/48	95
Infectious disease	7%/7	18%/36	43
Genetic conditions	2%/2	6%/12	14
Not determined	11%/11	25%/50	61
Total	100%/100	100%/200	300

Table 2: Prevalence of ear disease

DISORDER	FREQUENCY	PERCENTAGE
Wax	63	21
Foreign body	9	3
Otitis externa	15	5
Acute otitis media	21	7
Chronic suppurative disorder	135	45
Serous otitis media	30	10
Normal	27	9

Discussion

Hearing impairment is the most common sensory disability around the globe and it is a condition of growing concern. In the year 2005, WHO found that 278 million people of the world had been living with debilating hearingimpairment.[7] In 2012, WHO found a new data based on 42 population based survey.[11] Worldwide, they found that there were 360 million persons with hearing loss and that contributes to 5.3% of the world's population. According to studies in South western Nigeria they found that childhood hearing loss was a significant health issue and it can be detected through screening amongst the target populations.[12] In a retrospective study conducted by Dunmade et al. study in Ilorin, a large proportion of hearing loss i.e. 28.7%, amongst children between 1-3yearsof age was seen and that contributes a huge burden amongst the subjects.[13] According to our study, there were 33% subjects between 5-15 years of age and 27% subjects between 16-60 years of with normal ear. There were 47% subjects between 5-15 years of age and 24% subjects between 16-60 years of with ear disease. There were 7% subjects between 5-15 years of age and 18% subjects between 16-60 years of with infectious disease. There were 2% subjects between 5-15 years of age and 6% subjects between 16-60 years of with genetic conditions. In 11% of the cases between 5-15 years of age and 25% of the subjects between 16-60 years of age the cause was undetermined.

In another study, undetermined causes contributed to the second most common cause of hearing loss (16.5%)and this value was less than the result given in the Middle East.[14]Chronic otitis media followed by cerumen auris accounted for the highest reasons for hearing impairment according to the study by Abdulazeez et al.[15] In other similar studies, cerumen was the most common cause of hearing loss.[16,17] According to our study, ear disease were frequently seen in children and the most common cause of impairment was Chronic suppurative otitis, seen in 45% (n=135). The next most common cause was in 21% of the cases. Foreign body was seen in 3% (n=9) cases. In 7%5(n=21) acute otitis media was seen. Otits externa was seen in 5% (n=15) cases. According to a disease by Abdel Hamid[18] middle ear disease was seen in 44% cases and they were responsible for hearing loss. In a study by Westerberg[19] amongst subjects in Uganda majority of the cases of hearing loss were undetermined. According to McPherson[20] in Gambia, infectious disease accounted for 56% cases of hearing loss. Our study was conducted for a short duration of time and no information was given about the management criteria and ways to prevent the occurrence of complications. These were the few complications associated with our study.

Conclusion

From the study it is clear that, ear diseases are very common amongst the subjects of the district. The most common cause of hearing impairment being chronic otitis media in our study. From the study it is clear that there is a need of survey at national level to determine the cause of hearing loss. Hearing disorders and ear disease are the most prevalent conditions in today's era and need urgent attention.

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