Normal Hearing by Air Conduction as a Function of Age and Sex in Indians*

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The present investigation was undertaken to study the age and sex variation, if any, in hearing by air conduction, among a group of subjects of Indian nationality. A sample of 180 subjects of age ranging from 10 years 6 months to 87 years were selected randomly from the general population. The sample was categorized into six age groups : 10 years 6 months to 20 years 6 months ; 20 years 6 months to 30 years 6 months ; 30 years 6 months to 40 years 6 months ; 40 years 6 months to 50 years 6 months ; 50 years 6 months to 60 years 6 months and 60 years 6 months and above.

The number of subjects and the sex representation was maintained constant in each age group.

Background information to rule out the history of middle ear pathology, ototoxicity, noise exposure was obtained for each subject. Air conduction pure tone audiometric testing and impedance audiometric testing was done for each subject in a sound treated room. The data were analyzed graphically and statistically.

The results obtained were as follows : The hearing thresholds increased as a function of age. The sex differences in the hearing acuity was not significant across most age groups and frequencies. In the age group of 50 years 6 months to 60 years 6 months, a significant sex difference was obtained at 500 Hz, only in the left ear. The dependency of hearing acuity on frequency was most marked in the older age groups compared to the younger age groups. The ear difference was not found to be statistically significant. The variability was found to be more at high frequencies and in older age groups.

Conclusions

1. Significant changes in hearing acuity occurs with age.
2. The prevalence of high frequency loss is greater in the geriatric population.
3. The age related changes in hearing seems to be common for males and females.
4. The hearing acuity changes related to age do not seem to be different for the right and left ears.

Suggestions for Further Research

1. Variations in hearing acuity with age at 125 Hz may be studied.
2. Similar study may be carried out in noise exposed population and compare the findings with the present study.
3. The rate of progression of hearing loss as a function of age and sex may be studied.
4. For age groups beyond 60 years, the progression of loss per decade may be studied.
5. Similar study may be carried out on a larger population.

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