

Original Article

Aetiology and Hearing Status of Children under 12 years in a School for Hearing Impaired

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Abstract

Objective: To assess degree, type and cause of hearing loss in children under 12 years of age in preschool for hearing impaired children.

Methods: This cross sectional study was carried out in children of integrated preschool for hearing impaired children (IPSHIC) of SAHIC, Mohakhali, Dhaka, from September 2010 to March 2011. 50 deaf children were included with age 3-12 years and clinically detected hearing impairment. Data were collected by detailed history, clinical examination and audiometric findings and result were expressed in table form.

Results: Most of the children presented with bilateral profound hearing loss and majority of patients presented with sensorineural type of hearing loss. Family history positive in 36% cases and consanguineous marriage were found in 34%. Commonest causes of deafness was infection.

Conclusion: Early detection with universal neonatal screening should be practiced in our country and early rehabilitation reveals better out come.

Key Words: Hearing impaired children, Integrated preschool.

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Introduction

Childhood deafness is still a special problem in our country in terms of assessment and rehabilitation. A deaf child cannot speak or develop speech as he or she cannot hear. Speech and hearing are closely integrated. Children do not complain of impaired hearing and even parents and careers are known to be unaware of the deficit in at least 30% of affected children¹.

A partially hearing child may have defective speech and perform poor in school and be leveled as mentally retarded. So early identification of hearing loss is desirable to optimize rehabilitation.

In the developing world, the greater proportion of childhood hearing loss is caused by

infection. In the developed world, about half of children with permanent childhood hearing impairment have a genetic cause for their deafness².

Hearing loss in a child may be present at birth (congenital) or may develop after birth (acquired). The prevalence of permanent childhood hearing impairment (PCHI) increases with age, suggesting that a further one in 1000 children develop acquired or progressive hearing impairment⁴. Consanguinity contributes to the raised prevalence of deafness which was evident in a study among the British Bangladeshi population⁵.

In nearly half of children with permanent hearing impairment the cause is genetic⁶. Of the genetic causes of hearing loss, syndromic form of deafness accounts for 30% and non-syndromic hearing loss accounts for nearly 70% causes⁷.

About 60% of congenital bilateral permanent hearing loss is associated with one or more of the following risk factor: history of treatment in the neonatal ICU for more than 48 hours, family history of early childhood deafness and craniofacial anomaly (cleft palate)¹¹.

Earlier detection with universal neonatal screening is now practiced in developed countries. Advances in detection, genetics, imaging and treatment including amplification and cochlear implantation – for these children have meant that new guideline and way of working are needed for health care professionals.

Methods

This cross sectional study was carried out in hearing impaired children of integrated preschool for hearing impaired children (IPSHIC) of SAHIC, Mohakhali, Dhaka, from September 2010 to March 2011.

Inclusion Criteria: Age 3-12 years child having history of suggestive deafness and clinically detected hearing impairment.

Exclusion Criteria: Age <3 years and >12 years

Data were collected by detailed history, clinical examination and audiometric findings and result were expressed in table form.

Result

Table-I
Degree of hearing loss (n=50)

Degree of hearing loss	No of patient		Percent (%)
	Unilateral	bilateral	
Profound(>80 db)	00	46	92
Severe(61-80db)	00	04	08

Table-II
Type of hearing loss (n=50)

Type of deafness	No. of patients	Percentage (%)
Sensorineural	39	78
Mixed	11	22

Table-III
Family history of deafness (n= 50)

Family history	Number of patients	Percentage (%)
Positive	18	36
Negative	32	64

Table-IV
Type of marriage (n=50)

Marriage	Number of patients	Percentage (%)
Consanguineous	17	34
Out side relation	33	66

Table-V
Aetiology of deafness

Age group (years)	Number of patients	Percentage (%)
Infection	19	38
Low birth weight and prematurity	07	14
Birth asphyxia	07	14
Neonatal jaundice	03	6
Birth trauma	02	4
Ototoxic drugs	01	2
Down's syndrome	01	2
Cerebral palsy	05	10
Unknown	05	10

Discussion

In this study 50 deaf children aged below 12 years, were studied cross sectionally after taking relevant history, clinical examination and investigations.

In this study, 92% deaf children presented with bilateral profound hearing loss and 8% presented with bilateral severe hearing loss. 78% were bilateral sensorineural and 22% were bilateral mixed type hearing loss. The above results are consistent with findings of other series^{12,16}.

This study reflected positive family history of deafness in 36% and consanguinal marriage in 34%, which was supported by the study Bajaj Y et al⁵. who also found consanguinal marriage in 33%.

The identification of aetiological factors of deafness was mainly based on history from the patients. In this series, the aetiology of deafness were diverse. Main aetiological factor of deafness was infection (38%) which is supported by many other series^{5,13,14,15,16}. Other aetiological factors were birth asphyxia (14%), prematurity and low birth weight

(14%), cerebral palsy (10%), neonatal jaundice(6%), trauma (4%), ototoxic drugs (2%), Down's syndrome (2%) and undetermined (10%). More or less similar findings are noted in High care study.

The facts and figures mentioned here may very form series to series, still then, as the cases were collected from a deaf school with limited period of time, this study may be of some value in reflecting certain facts regarding degree, type and aetiological factors of deafness among the deaf children.

Conclusion

Early detection with universal neonatal screening should be practiced in our country and early rehabilitation reveals better outcome. Prevention is only means to reduce the prevalence of congenital hearing impairment.

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