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ORIGINAL RESEARCH

Assessment of cases of hearing loss in children

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ABSTRACT:
Background:Hearing loss in children may be inherited, caused by maternal rubella or complications at birth, certain infectious diseases such as meningitis, measles, chronic ear infections. The present study was conducted to assess the cases of hearing loss in children.
Materials & Methods: 296 children with hearing loss of both genders were selected. Histories of risk factors, causes, and type of hearing loss were recorded.
Results: Out of 296, males were 176 and females were 120. Common risk factors were middle ear infection in 72, febrile illness and treatment in 144, sickle cell diseases in 56 and family history in 24 cases. The difference was significant (P< 0.05).
Conclusion: Common causes of hearing loss in children were middle ear infection, febrile illness and treatment, sickle cell diseases and family history.
Key words: hearing loss, middle ear infection, sickle cell diseases

Introduction

Hearing loss in children may be inherited, caused by maternal rubella or complications at birth, certain infectious diseases such as meningitis, measles, chronic ear infections, use of ototoxic drugs, and exposure to excessive noise, rubella, cytomegalovirus, tetanus, Lassa fever, hypothyroidism, hypoxemia at birth, foreign bodies, genetic factors, and the indiscriminate use of ototoxic drugs to treat ear infections in most of the peripheral hospitals in our region.[1,2] Most of the cases of hearing loss are avoidable through primary prevention. The World Health Organization reported that about 360 million (328 million adults and 32 million children) people worldwide have disabling hearing loss.[3]

In children, early detection of hearing impairment and prompt intervention are essential in order to take full advantage of the plasticity of the developing sensory system.[4] Missing such an opportunity in a child with a severe or profound hearing loss may hamper his or her ability to adapt to life in the hearing world or to prepare for life in a hearing-impaired community.[5]Primary prevention through immunization, genetic counseling, and improved antenatal and perinatal care may help to address some environmental causes, such as birth trauma, infection, and neonatal jaundice requiring exchange blood transfusion but has a

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limited impact on genetic or hereditary etiologies, such as connexin 26, Pendred, and Usher syndromes.[6]The present study was conducted to assess the cases of hearing loss in children.

Materials & Methods

The present study comprised of 296children with hearing loss of both genders. The consent was obtained from their parents.

Data such as name, age, gender etc. was recorded. Data on age, sex, histories of risk factors, causes, and type of hearing loss were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 296		
Gender	**Male**	**Female**
Number	176	120

Table I, graph I shows that out of 296, males were 176 and females were 120.

Graph I Pie chart showing Distribution of patients

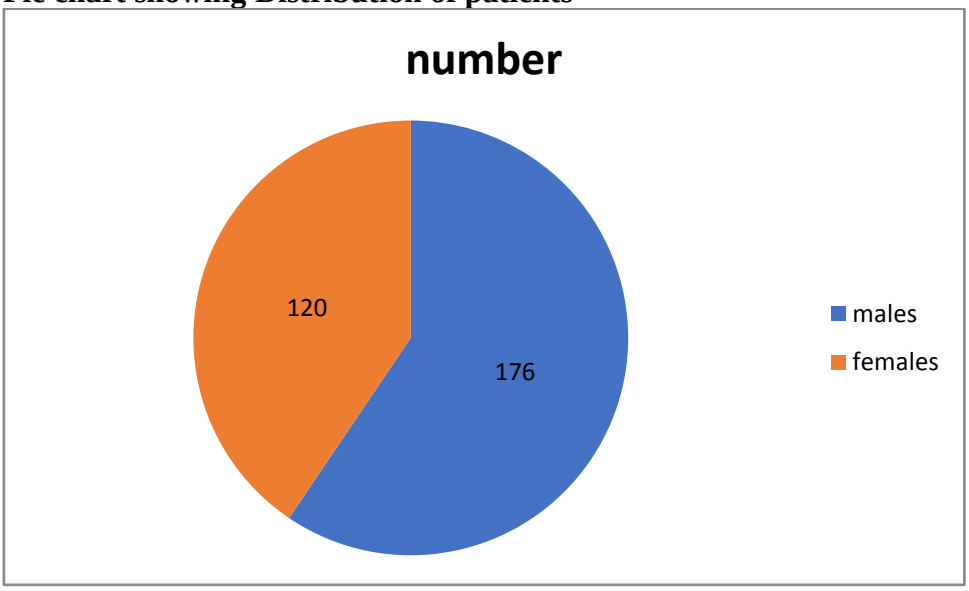

Table II Common risk factors

Risk factors	Number	P value
Middle ear infection	72	0.04
Febrile illness and treatment	144	
Sickle cell disease	56	
Family history	24	

Table II shows that common risk factors were middle ear infection in 72, febrile illness and treatment in 144, sickle cell diseases in 56 and family history in 24 cases. The difference was significant (P< 0.05).

Discussion

Failure to detect congenital or acquired hearing loss in children may result in lifelong deficits in speech and language acquisition, poor academic performance, personal-social maladjustments, and emotional difficulties.[7,8] Early identification of hearing loss and appropriate intervention within the first 6 months of life have been demonstrated to ameliorate many of these adverse consequences and facilitate language acquisition.[9,10] Supportive evidence is outlined in the Joint Committee on Infant Hearing's "Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs," which was endorsed by the American Academy of Pediatrics (AAP).[11,12]The present study was conducted to assess the cases of hearing loss in children.

In present study, out of 296, males were 176 and females were 120.Samdi et al[13] in their study three hundred and twenty-one (10.33%) children were diagnosed with hearing loss with a male to female ratio 1.8:1. Average age at diagnosis was 2.65 and 3.35 years for bilateral and unilateral hearing losses, respectively, bilateral hearing loss, 304 (94.70%), and unilateral hearing loss, 17 (5.29%). Furthermore, 235 (73.20%) children had predisposing risk factors while 86 (26.79%) had no identifiable risk factor. The most common risk factor was febrile illness and its treatment in 163 (50.7%), followed by middle ear infections in 29 (9.03%). A family history of hearing loss, prematurity, or complicated perinatal course was found in 17 (5.29%) patients. Seven (2.18%) cases had sickle cell disease. Sensorineural hearing loss was observed in 228 (71.0%) on the right ear and 222 (69.2%) on the left ear while conductive hearing loss accounted for 21 (6.54%) and 25 (7.78%), respectively, while mixed hearing loss was 9 (3.1%).

We found that common risk factors were middle ear infection in 72, febrile illness and treatment in 144, sickle cell diseases in 56 and family history in 24 cases. Kodiya et al[14]identified 1,435 patients-812 males and 623 females, aged 9 months to 90 years who had been diagnosed with hearing loss (26.2%). In addition to demographic data, we compiled information on each patient's type and degree of hearing loss, the affected side, and the predisposing factors. Sex and age cross-tabulations revealed that the greatest proportion of hearing loss according to sex occurred between the ages of 11 and 20 years for males and 21 and 30 years for females. The most common type of hearing loss was sensorineural, which was seen in 78.9% of patients; conductive hearing loss was seen in 17.7% and mixed in 3.4%. More than three-quarters of hearing losses were either moderate, moderately severe, or severe. Bilateral losses were far more common than unilateral losses; among the latter, the left side was affected slightly more often than the right. Predisposing factors were not documented in the vast majority of cases (87.6%), but when they were, the most common were chronic suppurative otitis media, meningitis, febrile convulsion, measles, and trauma.

Mgbor and Emodi[15] in Southeastern Nigeria reported almost twice the prevalence of sensorineural hearing loss, 13.4%, among sickle cell disease patients compared to control group was 6.2%. Yamamah et al[16] in their study of middle ear diseases in 456 school pupils found 162 to have middle ear disease and (18%) with hearing loss.

Conclusion

In our study we concluded that common causes of hearing loss in children were middle ear infection, febrile illness and treatment, sickle cell diseases and family history, and out of these most common cause is febrile illness and treatment

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