

Clinicoepidemiological Profile of Otorhinolaryngological Diseases among Patients Aged 5-15 Years- A Retrospective Study

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ABSTRACT

Introduction: Ear, nose and throat diseases are some of the common causes of absenteeism among the school going children and can contribute to various co-morbidities. The most common among the Ear, Nose, Throat (ENT) diseases in school going children is hearing impairment due to ear wax or different types of otitis media which can be prevented with early detection and intervention. Upper respiratory tract infections also predispose a child to complications such as tonsillitis, sinusitis along with otitis media that can lead to morbidities like hearing impairment and learning disability.

Aim: To determine the prevalence of ear, nose and throat diseases among the school going children and their clinico-epidemiological profile.

Materials and Methods: This retrospective study was carried out in a tertiary care centre, Assam Medical College and Hospital, Dibrugarh, Upper Assam, India during the period of January 2019 to December 2019. Study included all the 1525 children within age group of 5-15 years attending the ENT Outpatient Department (OPD). Data was obtained from the outdoor register and the history sheets. Data collected was age, sex, religion and

distribution of diseases according to site. Number of children having ear, nose, throat or neck diseases were calculated using Microsoft Excel software 2013, version 15.0.

Results: Majority of the cases studied were found to be in the age group of 5-10 years (54.1%). ENT diseases were more common in boys (54.2%) than in girls (45.8%). Diseases of the ear (55.9%) were most common, followed by oral cavity and throat (19.3%), nose and Paranasal Sinus (PNS) (18.2%) and neck (6.6%). The most common diseases in ear were Chronic Suppurative Otitis Media (CSOM) and presence of earwax, while sinusitis and allergic rhinitis were more prevalent in diseases of nose and PNS. Pharyngitis and tonsillitis were more commonly found among the diseases of oral cavity and throat.

Conclusion: These diseases are a major burden in the school going children resulting in their absence from school, low academic and extracurricular performance and other outdoor activities. Keeping an eye on this aspect, a structured and systematic school health program can be designed in collaboration with state health system, so that it can be properly followed-up and needed treatment can be initiated with the help of state government cost.

Keywords: Co-morbidities, Hearing impairment, School children

INTRODUCTION

India, being the second most populous country of the world, is home to more than 400 million children forming about 35% of its total population [1]. Respiratory tract infections are quite common in children and are common cause of absenteeism from school [2]. In a study conducted in Loni, Maharashtra, ENT diseases were more prevalent among the male (53.2%) children with diseases of auditory system (57.3%) being the most common group of ENT problems [3]. Morbidity associated with auditory system include hearing impairment which obstructs the overall development. Among the numerous studies carried out to find out the prevalence of hearing impairment in children, the prevalence among children with ear disease was 16.5% in a study carried out in rural population of South India by Rao RP et al., 2002 [4]. In a study conducted in Yemen, the prevalence of CSOM in this age group was 7.4%, which was significantly associated with disabling hearing impairment [5]. Allergic rhinitis has a profound impact on the daily lives of children, causing irritability, sadness, impairment of sleep, fatigue and impairment of cognition and memory in children [6]. These conditions may predispose a child to complications which further contribute to morbidity affecting the performance at school and thus their future. However, early detection and intervention of these diseases can reduce the burden of morbidities [7].

Hence, this present retrospective study was conducted with the aim to determine the prevalence of ear, nose and throat diseases among the school going children and their clinico-epidemiological profile.

MATERIALS AND METHODS

This retrospective study was carried out on all the patients in the age group of 5-15 years, attending the ENT and Head and Neck Surgery OPD of Assam Medical College and Hospital, Dibrugarh, Upper Assam, India, during the period of January 2019 to December 2019. The data was analysed during August 2020 to October 2020.

Inclusion criteria: All patients of school going age group (5-15 years) attending Department of ENT and Head and Neck Surgery during the study period were included in the study.

Exclusion criteria: Patients with incomplete data records were excluded.

All 1525 children attending the ENT OPD within the study period were included. Data was obtained from the outdoor register and the history sheets. Number of children having ear, nose, throat or neck diseases was calculated and was tabulated according to age, gender, religion and distribution of the diseases according to site (ear, nose and throat).

STATISTICAL ANALYSIS

Data were entered in Microsoft Excel Worksheet 2013, version 15.0 and computer based analysis was performed using Microsoft Excel 2013. The categorical variables were summarised as proportions and percentages.

RESULTS

There were a total of 1525 patients in this age group during this period. Maximum number of cases 825 (54.10%) were in the age group of 5-10 years and were Hindus 1194 (78.3%) with male to female ratio 1:18 [Table/Fig-1]. Maximum ENT diseases occur in the ear 853 (55.9%) followed by oral cavity 294 (19.3%), throat and nose and paranasal sinus 277 (18.2%) [Table/Fig-2].

Socio-demographic profile	No. of students	Percentage (%)
Age (years)		
5-10	825	54.1
>10-15	700	45.9
Total	1525	100
Gender		
Male	827	54.2
Female	698	45.8
Total	1525	100
Religion		
Hindu	1194	78.3
Muslim	287	18.8
Christian	44	2.9
Total	1525	100

[Table/Fig-1]: Socio-demographic profile of the study population.

Site involved in diseases	No. of students	Percentage (%)
Ear	853	55.9
Oral cavity and throat	294	19.3
Nose and paranasal sinus	277	18.2
Neck	101	6.6
Total	1525	100

[Table/Fig-2]: Distribution of patients according to site involved.

Earwax 243 (28.5%) was the most common among ear diseases, sinusitis 83 (30%) and allergic rhinitis 51 (18.4%) among diseases of nose and paranasal sinuses, pharyngitis 117 (39.8%) followed by tonsillitis 85 (28.9%) were the most common among oral cavity and reactive lymphadenitis 61 (60.4%) was the most common among diseases of neck [Table/Fig-3].

ENT diseases	No. of students	Percentage (%)
Ear diseases		
Earwax	243	28.5
Chronic suppurative otitis media	169	19.8
Acute otitis media	136	15.9
Otomycosis	71	8.3
Otitis externa	62	7.3
Hearing loss	42	4.9
Otitis media with effusion	37	4.3
Eustachian tube block	36	4.2
Foreign body ear	27	3.2
Deformity	9	1.1
Preauricular sinus	6	0.7
Keloid	6	0.7
Laceration following injury	4	0.5
Pseudocyst	3	0.4
Sebaceous cyst	2	0.2
Total	853	100
Nose and paranasal sinus		
Sinusitis	83	30
Allergic rhinitis	51	18.4

Adenoids	31	11.2
Deviated nasal septum	30	10.8
Upper respiratory tract infections	28	10.1
Epistaxis	23	8.3
Polyp	10	3.6
Inferior turbinate hypertrophy	8	2.9
Vestibulitis	6	2.2
Foreign body nose	5	1.8
Juvenile nasopharyngeal angiofibroma	2	0.7
Total	277	100

Oral cavity and throat		
Pharyngitis	117	39.8
Tonsillitis	85	28.9
Mucocele	34	11.6
Foreign body ingestion	18	6.1
Parotitis	14	4.8
Tongue bite following injury	13	4.4
Aphthous ulcer	9	3
Nasolabial cyst	3	1
Glossitis	1	0.4
Total	294	100

Neck		
Reactive lymphadenitis	61	60.4
Abscess	17	16.8
Submandibular sialadenitis	14	13.9
Tubercular lymphadenitis	6	5.9
Cystic hygroma	1	1
Supraclavicular schwannoma	1	1
Lipoma nape of neck	1	1
Total	101	100

[Table/Fig-3]: Distribution of the patients according to the types of ear, nose and throat diseases.

The patients diagnosed with earwax, acute otitis media, otomycosis, otitis externa, otitis media with effusion and eustachian tube block were treated conservatively. Cases of safe CSOM were relieved with conservative management, but the cases of unsafe CSOM were initially treated conservatively but later had to undergo mastoid exploration. Foreign body in the ear was removed either under general or local anaesthesia depending on the co-operation of the child. The lacerations were repaired and the sinus tract in preauricular sinus, keloid, pseudocyst and sebaceous cyst in the ear were excised.

Cases of allergic rhinitis, sinusitis, Upper Respiratory Tract Infection (URTI), Inferior Turbinate Hypertrophy (ITH) and vestibulitis were given conservative management. Adenoidectomy was done in children with adenoids. Septoplasty was done in five cases of Deviated Nasal Septum (DNS) and the rest cases of DNS showed symptomatic relief on conservative management. One case of nasal polyp showed reduction in size and relief of symptoms with topical and systemic steroids. Rest cases of polyp underwent Functional Endoscopic Sinus Surgery (FESS) with polypectomy. Foreign body in the nose was removed either under General Anaesthesia (GA) or Local Anaesthesia (LA). Excision of the nasopharyngeal angiofibroma was done in the two cases. Twenty patients presenting with epistaxis had history of nose pricking, trauma due to self fall and road traffic accidents. They were managed conservatively. Three children with epistaxis had bleeding disorders and were referred to paediatrics of better management.

Patients with pharyngitis, parotitis, aphthous ulcer and glossitis were given symptomatic treatment. Cases of acute tonsillitis were

managed conservatively and those with chronic tonsillitis underwent tonsillectomy. Mucocele and nasolabial cysts were excised. Only four of the tongue bite injury cases needed repair, while the rest cases were given topical antibiotic ointment and were healed as the lacerations were not more than 1-1.5 cm. Foreign bodies in oesophagus were removed via oesophagoscopy.

Reactive lymphadenitis and submandibular sialadenitis were given systemic antibiotics and were relieved. Neck abscesses were drained by Hilton's method. Those diagnosed to be tubercular lymphadenitis were advised to start anti-tubercular drugs under Directly Observed Treatment, Short-course (DOTS). Excision of schwannoma and lipoma was done under GA. Cystic hygroma was kept under observation.

DISCUSSION

In this study, overall ENT diseases were found to be more common in boys (52.2%) than in girls (45.8%), which is similar to various literature [1,8]. Diseases were more common in the age group of 5-10 years, which is contradictory to a study in Kishanganj, Bihar [2]. ENT diseases were found to be more prevalent in Hindu religion in this study.

Diseases of ear were found to be the major burden in this paediatric age group, followed by oral cavity and throat, and then nose and PNS, which complies with other studies [2,3]. Ear wax, followed by CSOM is the most common morbid conditions of the ear which if not treated accurately may lead to hearing impairment. This high prevalence in this study corresponds with that of another study [4,9]. A study also found that not only bacterial middle ear infection, but major factors such as hereditary and consanguinity also plays an important role in hearing impairment among school-going children [10].

Pharyngitis followed by tonsillitis were the most common diseases in patients complaining of sore throat in the study, which contradicts other studies [2,3]. Organisms responsible for tonsillitis include streptococcus pyogenes and beta haemolytic streptococci. If not treated in acute phase of tonsillitis it may lead to complications like peritonsillar abscess, other deep neck space infections, acute rheumatic fever, glomerulonephritis and septicaemia [8].

Nasal obstruction and rhinorrhoea are the most common complains in children with diseases of nose and PNS. The most common ones are allergic rhinitis and adenoids. Recurrence of adenoids can lead to chronic nasal obstruction and obstructive sleep apnea [8].

These diseases are a major burden in the school going children resulting in their absence from school, low academic and extracurricular performance and other outdoor activities [11]. School health programmes can help in creating awareness among the teachers and parents for early detection of the diseases and early treatment of the same to reduce the co-morbidities which require further treatment in tertiary care centres. Keeping an eye on this aspect, a structured and systematic school health program can be

designed in collaboration with state health system, so that they can be properly followed-up and if needed treatment can be initiated on state government cost.

Limitation(s)

The results of this study were applicable only in the population attending the ENT outdoor of the tertiary care centre as it was done without taking a control group. As it was a retrospective study, further follow-up of the patients also could not be done.

CONCLUSION(S)

In the present study, ear wax and CSOM were the most common ear diseases affecting this population which on early intervention can prevent the child from hearing impairment and its consequences which include impaired speech, language and cognitive skills. Nasal obstruction due to rhinitis and adenoids can lead to obstructive sleep apnea, which may lead to day time sleepiness, inactivity thus affecting performance in school. These diseases are a major burden in the school going children resulting in their absence from school. School health programmes can help in creating awareness among the parents for early detection and immediate treatment of the diseases to reduce the co-morbidities which require further treatment in higher centres.

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