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ORIGINAL RESEARCH

Incidence and clinical presentation of acute otitis media in children in a tertiary care centre

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Abstract

Background: The present study was conducted for assessing the incidence and clinical presentation of acute otitis media in children in a tertiary care centre.

Materials & methods: A total of 200 children were enrolled. Complete demographic details of all the subjects were obtained. Information on basic demographics, medical history, and pneumococcal vaccination history was collected. Data on the frequency of suspected, probable and confirmed AOM, severity and complications of any AOM episodes, and AOM symptoms were collected through retrospective review of medical charts and prospective follow-up using physician and parental reports. Clinical profile was recorded separately. All the results were recorded and analysed using SPSS software.

Results: Out of these 200 children, acute otitis media was present in 19 percent of the patients. Out of 38 patients with presence of otitis media, 16 patients belonged to the age group of 13 to 15 years. There were 23 girls and 15 boys. Passive smoking exposure was seen in 12 patients. History of allergies was present in 11 patients. Pain, malaise, fever, otalgia, erythema of the tympanic membrane and middle ear effusion was present in 65.79 percent, 68.42 percent, 55.26 percent, 60.53 percent, 57.89 percent and 52.63 percent of the patients respectively.

Conclusion: Otitis media is a global problem. Also, there is lack of reporting and different incidences across many different geographical regions.

Key words: Otitis Medica, Children

Introduction

Acute otitis media is defined as an infection of the middle ear space. It is a spectrum of diseases that includes acute otitis media (AOM), chronic suppurative otitis media (CSOM), and otitis media with effusion (OME). Acute otitis media is the second most common pediatric diagnosis in the emergency department, following upper respiratory infections. Although otitis media can occur at any age, it is most commonly seen between the ages of 6 to 24 months. The introduction of antibiotics in the first half of the 20th century was followed by a dramatic decrease in occurrence of the previously severe complications of this disease.

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Up to the 1980s no-one doubted the necessity of immediate antibiotic treatment as soon as AOM was diagnosed.[1-3]

AOM is the most common diagnosis worldwide. The Centers for Disease Control and Prevention (CDC) surveillance data showed that the prevalence of AOM in the United States is increasing (150%). Before the age of two years, 70% of children will have encountered at least one AOM episode. Studies have shown that AOM is the main cause of empiric antibiotic prescription in the United States. Various types of otitis media have been identified depending on the presentation of symptoms and complications.[4-6] Hence; the present study was conducted for assessing the incidence and clinical presentation of acute otitis media in children in a tertiary care centre.

Materials & methods

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Results

A total of 200 children were analysed in the present study. Out of these 200 children, acute otitis media was present in 19 percent of the patients. Out of 38 patients with presence of otitis media, 16 patients belonged to the age group of 13 to 15 years. There were 23 girls and 15 boys. Passive smoking exposure was seen in 12 patients. History of allergies was present in 11 patients. Pain, malaise, fever, otalgia, erythema of the tympanic membrane and middle ear effusion was present in 65.79 percent, 68.42 percent, 55.26 percent, 60.53 percent, 57.89 percent and 52.63 percent of the patients respectively.

Table 1: Incidence of acute otitis media in children

Acute otitis media	Number	Percentage
Present	38	19
Absent	162	81
Total	200	100

Table 2: Profile of patients with acute otitis media

Variable		Number	Percentage
Age group (years)	Less than 10 years	12	31.58
	10 to 12	10	26.32
	13 to 15	16	42.11
Gender	Boys	15	39.47
	Girls	23	60.53
Parent education	Illiterate	10	26.32
	Literate	28	73.68
Passive smoking exposure	Yes	12	31.58
	No	26	68.42
History of allergies	Yes	11	28.95
	No	27	71.05

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Table 3: Clinical profile

Clinical profile	Number	Percentage
Pain	25	65.79
Malaise	26	68.42
Fever	21	55.26
Otalgia	23	60.53
Erythema of the tympanic membrane	22	57.89
Middle ear effusion	20	52.63

Discussion

Acute otitis media (AOM) is an acute inflammation of the middle ear caused by viral (such as respiratory syncytial virus, rhinovirus, influenza viruses, and adenoviruses) or bacterial (such as Streptococcus pneumoniae, nontypeable Haemophilus influenzae, and Moraxella catarrhalis) infections. Preceding viral upper respiratory tract infection leads to eustachian tube obstruction; fluid stasis and colonization of pathogens then occurs within the middle ear. Young children are susceptible to AOM owing to their shorter and more horizontal eustachian tubes, through which pathogens ascend from the nasopharynx to the middle ear.[7, 8] AOM is one of the most common childhood infections and an important reason for primary care visits in the UK. In the UK, antibiotics are prescribed for 87% of these episodes. The most common bacterial causes of AOM are Streptococcus pneumoniae, non-typeable Haemophilus influenzae, and Moraxella catarrhalis. There is increasing evidence that the predominant causative pathogen in AOM is changing from Streptococcus pneumoniae to non-typeable Haemophilus influenzae since the introduction of pneumococcal conjugate vaccines. Group childcare outside the home and passive smoking are thought to be the most important risk factors for AOM. Other risk factors include pacifier use and positive family history of AOM. Breastfeeding for 3 months or longer has a protective effect.[9] Hence; the present study was conducted for assessing the incidence and clinical presentation of acute otitis media in children in a tertiary care centre.

A total of 200 children were analysed in the present study. Out of these 200 children, acute otitis media was present in 19 percent of the patients. Out of 38 patients with presence of otitis media, 16 patients belonged to the age group of 13 to 15 years. There were 23 girls and 15 boys. Passive smoking exposure was seen in 12 patients. History of allergies was present in 11 patients. Pain, malaise, fever, otalgia, erythema of the tympanic membrane and middle ear effusion was present in 65.79 percent, 68.42 percent, 55.26 percent, 60.53 percent, 57.89 percent and 52.63 percent of the patients respectively. The previous study stated that 38 children from Surabaya, Indonesia, who suffered from chronic suppurative otitis media (CSOM) were studied using the strict microbiological methodology. Information on risk factors related to AOM in children is also very limited, therefore, this study focuses on the AOM case in the community. A previous study identifying risk factors for chronic otitis media (COM) and recurrent otitis media (ROM) and reveal that snoring, previous history of AOM/ROM, second-hand smoke, and low social status are important risk factors for COM/ROM. Another study also found that low parental educational attainment, exposure to smoke, indoor exposure to mold, laryngopharyngeal reflux disease, and the lack of breastfeeding; an increased risk of otitis media recurrences were observed in the presence of an allergy, persistent cough, and runny nose.[10- 12] Leung AKC et al reviewed in depth the epidemiology, pathophysiology, clinical manifestations, diagnosis, complications and particularly treatment of acute otitis media in children. Acute otitis media affects over 80% of children before their third birthday and 30 to 45% of these children have suffered two or more episodes. Streptococcus pneumoniae, nontypable Haemophilus influenzae, and Moraxella catarrhalis are the most frequently isolated middle-ear pathogens. The diagnosis is

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based on acute onset of symptoms such as otalgia and fever, middle ear inflammation such as erythema of the tympanic membrane, and middle ear effusion. The choice of treatment method depends on the age of the child, laterality, and the severity of the disease. Antimicrobial treatment is recommended for all children less than two years of age, as well as in children ≥ two years of age who have a temperature ≥ 39oC; are toxic looking; have otalgia > 48 hours; have bilateral otitis media or otorrhea; have craniofacial abnormalities; are immunocompromised; or have uncertain access to follow-up.[13]

Conclusion

Otitis media is a global problem. Also, there is lack of reporting and different incidences across many different geographical regions.

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