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Complications and management of otitis media in children

Parameshwar Keshangari[1], Pampapathi Goud Katakam[1]*, Nagababu Pyadala[2,3]

[1]Department of ENT, [2]Department of Biochemistry, MNR Medical College and Hospital, Sangareddy, Telangana, India
[3] Research Associate, MNR Foundation for Research and Innovation, Sangareddy, Telangana, India

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***Correspondence:**
Dr. Pampapathi Goud Katakam,
E-mail: kpgoud1917@gmail.com

ABSTRACT

Background: Otitis media is a main cause of hearing difficulty in children. The aim of this study was to determine the efficacy of medical treatment in the management of otitis media.
Methods: This cross sectional study was conducted at the department of ENT, MNR Medical College and Hospital, during the period of February 2015 to March 2017. A total of 62 patients were included in this study and standard medical treatment of otitis media was given. All the data were recorded and analyzed.
Results: Among 62 patients, 42 (67.7%) completely recovered from the disease while 20 patients (32.25%) did not improve.
Conclusions: Conservative treatment is effective in the management of otitis media.

Keywords: Otitis media, Conservative treatment, Hearing difficulty, Effectiveness

INTRODUCTION

Otitis media is the presence of fluid in the middle ear cleft behind an intact tympanic membrane.[1,2] It is also called Otitis media with effusion, serous otitis media, glue ear or non suppurative otitis media. Otitis media with effusion is the most important cause of deafness in children the world over.[1,3,4] An accurate diagnosis of otitis media can be made by proper clinical history, otoscopic examination and hearing tests like tuning fork tests, audiogram and tympanogram.[1,5] Otitis media in children is often delayed for months or years resulting in poor development of speech, language, cognition and behaviour and poor performance at school.[2,4,6] It also results in chronic non-specific pain or discomfort in the ear. So the early diagnosis and treatment of otitis media is very important. If untreated; it can progress in to chronic infective stage.[7] Once the diagnosis of Otitis media is done then the patients is given treatment for at least 3 months including antibiotics, anti-histamines, mucolytics and nasal decongestants.[4,5,8] After the medical treatment if there is need then surgical options should be considered like myringotomy and ventilation tube insertion. Complications of ventilation tube insertion include tympanosclerosis, atelectasis, residual perforations and rarely cholesteatoma formation.[4,7] The present study was aimed to assess the effectiveness of medical treatment in Otitis media.

METHODS

This cross-sectional study was conducted at the ENT Department, MNR Medical College and Hospital, Sangareddy, during the period from February 2015 to March 2017. The diagnosis of Otitis media was made on the basis of proper history, otoscopic examination, tuning fork tests supported by audiological investigations like pure tone audiogram and tympanogram. All the patients

were provided consent form. Only children age group infected with otitis media were included in this study. The purpose and benefit of the study was explained to all patients. After diagnosis all patients were treated conservatively using oral antibiotics (amoxicillin), nasal decongestants (xylometazoline) and mucolytics (Acetyl cystine), antihistamine (clemastine). After 2 weeks treatment patient were assessed for any improvement in the symptoms, otoscopic findings supported by tympanogram. Those patients still having some symptoms were given antihistamine for another 2 weeks and then were reassessed. Data was collected and analysed in SPSS 20.0 statistical software.

RESULTS

A total of 62 patients were included in the study over a period of 2 years from February 2015 to March 2017. A total of 62 patients, 38.7% patients were below 5 years age, 45.16% patients were 5-10 years age group while 4.83% patients were 10- 15 years and 11.29% patients were belongs to above 15 years age (Table 1). There were 59.67% males and 40.32% females (Figure 1). The most common presenting complaint at the time of diagnosis was decrease hearing/ear blockage, followed by irritation, otalgia and delayed speech development (Table 2). During examination air fluid level was the commonest finding (60%) followed by increased vasculature, dullness and retraction of tympanic membrane. Bilateral ear involvement was common than unilateral (Table 3). Tympanogram was done in all 62 patients. Among all patients 95.16% had flat type-B curve while only 3 patients (4.83%) had type-C curve (Table 4). At the end of 2nd week the efficacy of conservative treatment was observed in 80.64% while 12 (19.35%) had no improvement. Out of 50 patients, 35 were fully recovered with no residual disease on otoscopy while the remaining 15 patients still had the residual disease with no otoscopic improvement, so they were again given the treatment for further 2 weeks (Table 5). Among these 15 patients, 12 patients (80%) were found to have recovered fully but 3 patients (20%) had residual disease on Otoscopy.

Table 1: Age distribution (n=62).

Age (year)	Total	Percentage (%)
<5	24	38.70
5-10	28	45.16
10-15	03	4.83
>15	07	11.29

Table 2: Clinical symptoms.

Symptoms	Total	Percentage (%)
Ear blockage	28	45.16
Irritation	17	27.4
Otalgia	09	14.5
Delayed speech	08	12.9

Table 3: Otoscopic findings (n=62).

Findings	Total	Percentage (%)
Air fluid level	42	67.74
Increased vascularity	11	17.74
Dullness of tympanic membrane	09	14.5

Table 4: Tympanogram.

Tympanogram	Total.	Percentage (%)
Type B	57	91.9
Type C	05	8.06

Table 5: Treatment outcome (n=62).

Improvement	Yes	No
Improvement	50	12
Otoscopic improvement with no disease at 2nd week	35	15
Otoscopic improvement with no disease at 4th week	12	03

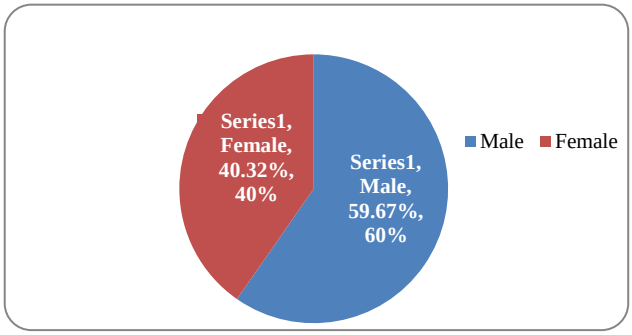

Figure 1: Gender distribution (n=62).

DISCUSSION

The otitis media is the presence of inflammation with accumulation of fluid in middle ear causes hearing loss in children. The surgical procedure requires general anaesthesia and is distressing both for children and parents.[2,9] So conservative treatment option should be tried to minimize these problems. Out of 62 patients, 38.7% patients were below 5 years age, 45.16% patients were 5-10 years age group while 4.83% patients were 10-15 years and 11.29% patients were belongs to above 15 years age. Similar results were reported by Kouwen et al and Williamson et al.[6,10] The symptoms differ with the age of the most frequent presentation is hearing loss which fluctuates in severity particularly in relation to seasonal change and the presence or absence of infection.[6,11] In our study 45.16% of the patients presented with blockage of ears, 27.4% with irritation in ears, otalgia was observed in 14.5% patients. In young children otitis media may present as impaired language and school performance.[5,6,12] In our study 12.9% patients presented with poor or delayed speech development and

this was the main reason for which they were being brought for opinion and otitis media was diagnosed incidentally. It is important to mention here that all these patients had severe Otitis media, indicated by fluid level, air bubbles on car examination and confirmed by flat type B tympanogram. The main factors for the development of Otitis media are a combination of Eustachian tube dysfunction and infection.[6,13] The most confirmatory sign of Otitis media is fluid level or air bubble as seen on otoscope and this was found in 67.74% of our patients. Increased vascularization and increased malleolar vasculature also indicates the possibility of otitis media.[5,7,13,14] In our study 9 patients (14.5%) had loss of normal colour of the tympanic membrane. In our study the tuning fork tests could be done in 12 patients (19.35%) and in the rest it could not be done, because the response in very young children was very confusing. Tympanogram has a vital role in the diagnosis of otitis media. Type-B cure (91.9%) is highly sensitive in detecting otitis media. Similar findings were reported by other authors.[15-18] In our study we did tympanograms in all 62 patients. It was seen that some improvement was due to the treatment with anti-microbial agents.

CONCLUSION

The conclusion drawn from our study is that conservative treatment has very good results in the treatment of Otitis media and can successfully reduce the rate of surgical interventions.

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