DOI: https://doi.org/10.53350/pjmhs20221612315

ORIGINAL ARTICLE

Analyzing the Efficacy of Topical Ciprofloxacin Ear Drops vs. Oral Tablets and Topical Ciprofloxacin Ear Drops Together for the Treatment of Patients with Chronic Suppurative Otitis Media (CSOM-Tubotympanic Type)

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ABSTRACT

Background: A suppurative Middle ear infection is the most frequent kind of otitis externa in low-income regions of the world (CSOM). Suppurative otitis media (CSOM-tubo tympanic type) affects both young and old alike. The condition has been treated using a wide range of approaches.

Objectives: The purpose of this study was to evaluate the efficacy of oral and topical ciprofloxacin against topical ciprofloxacin drops alone in the treatment of CSOM-tubo tympanic ear discharge.

Methods: Randomization was used in our study Patients with chronic suppurative otitis media were seen between September 2020 and September 2021 at tertiary care hospital in Peshawar. SPSS version 24 was used to evaluate hospital and pathology lab data.

Results: Overall, 75 patients were included in the study's findings. They split themselves into two categories. There were 38 people [group A] and 37 people [group B]. each Group was classified into two age groups, the younger [ages 01–12] and the older (ages 13–60). (age 13-16 years). Patients' ages ranged from 1 to 12 years old, with 28 [group-A] at 72% and 25 [group-B] at 65%. Ten people 27% in [group-A] and thirteen patients (35%) in [group B], were between the ages of thirteen and sixteen (group B).

Conclusions: As a result, we found that the combination of oral and topical ciprofloxacin was superior to topical ciprofloxacin alone in resolving ear discharge in patients with middle ear CSOM (tubo-tympanic type).

Keywords: Topical and oral ciprofloxacin, treat chronic suppurative, otitis media

INTRODUCTION

Chronic suppurative otitis media is common in poor people (CSOM). Middle ear inflammation causes a persistent rupture in the tympanic membrane and chronic ear discharge lasting six weeks or longer**[01]**. Mastoiditis, petrositis, facial paralysis, and labyrinthitis are complications of this disease, as are meningitis, otogenic brain abscess, and lateral sinus thrombosis1. Chronic otitis media (CSOM) may be harmless (tubotympanic) or dangerous (atticoantral) **[02]**. The tubotympanic type is benign and does not cause major difficulties. The atticoantral type has life-threatening implications. Bone erosion and necrosis brought on by granulation tissue and cholesteatoma may be harmful to the facial nerve, the inner ear, and the brain due to cholesteatomaossicular disruption and bone osteitis-caused hearing loss2. Chronic otitis media (CSOM) often begins at 02 years Most ear discharge in tubo tympanic CSOM contains pseudomonas aeroginosa. Staphylococcus aureus, proteus, and klebsiella follow. 4. Pseudomonas is the most prevalent cause of disease for the fifth year5. Hunger, HIV infection, and contaminated water enhance the risk of CSOM and complications6. Early treatment of CSOM (tubo tympanic type) may lead to a favorable prognosis due to deadly complications. CSOM requires bacterial knowledge and effective treatment (tube tympanic). Due to their broad-spectrum activity against pseudomonas aeruginosa, klebsiella, and proteus8, quinolone antibiotics have become increasingly important in treating tubo tympanic CSOM. Pseudomonas aeruginosa was the ciprofloxacin-sensitive strain**[04]**.

METHODS

The study was a scientific study in which individuals were assigned at random. The total number of culture-positive cases was 75. As a result, they split up into two groups (37.50 each). Ciprofloxacin was applied topically to one Group and taken orally by another. The 24th edition of SPSS was used for data entry and analysis. Quantitative variables were reported as percentages and frequencies, including gender and CSOM resolution (tubo tympanic type). Chi-square analysis was used to compare (group-A and group-B) CSOM resolution. Our study has a significant P-value of [0.05].

RESULTS

The study found 75 cases. They're divided. Group A had 38 members, and B had 37. (group B). Both groups included child (1-12) and adult (13+) patients (aged 13-16 years). Group-A included 28 patients (72% of the sample), while Group B had 50 (67%). (01-12 years). Only 10 (12-16) patients were in group A (27%) and 13 in group B (34%) (group B). Group A included 25 males (65%) and 14 females (35%), whereas group B had 25 males (66%) and 13 females (34%).

Table 1: Group Age Percentages (N=75)

[Age years]	[Group A]	[Group B]
01-12	28(75%)	25(65%)
13-16	10(25%)	12(35%)
[Total]	38(100%)	37(100%)
[mean±sd]	07.38±04.75	09.02±06.24

Table 2: Gender wise Distribution N=75)

[Gender]	[Group A]	[Group B]
[Male]	24(65%)	26(65.33%)
[Female]	13(35%)	12(34.67%)
[Total]	37(100%)	38(100%)

Table 3: A/B Group Discharge Resolution Comparison (n=75)

[Reslution]	[Group A]	[Group B]
[Yes]	28(75%)	17(45%)
[No]	09(25%)	21(55%)
[Total]	37(100%)	38(100%)

P value=0.000

Using oral and topical ciprofloxacin (group-A), 14 (75%)

patients experienced improved ear discharge, whereas 10 (25%) did not. 17 patients (45%) reported relief from taking the drops topically alone, however (group B) demonstrated a larger index of unresolved ear discharge (20 patients, or 55%). Groups A and B were compared for ear discharge drying. Statistics showed a divide. P=0.000 indicates a noticeable variation.

Table 4: Age-based comparisons of the success rates of treatments for ear discharge in both groups = 01-12

[Group]	[Treatment of Ear Leakage]		[P value]
	Yes	No	
[A]	20	07	[0.000]
[B]	18	16	

Age: 13-16

[Group]	[Treatment of Ear Leakage]		[P value]
	[Yes]	[No]	
[A]	08	01	[0.05]
[B]	07	05	

Table 5: Gender-based categorization and comparison of the causes of ear discharge in both groups Characteristics: Male

[Group]	[Treatment of Ear Leakage]		P value
	[Yes]	[No]	
[A]	19	05	[0.000]
[B]	09	15	

Identity: Female

[Group]	[Treatment of Ear Leakage]		P value
	[Yes]	[No]	
[A]	18	04	[0.48]
[B]	08	05	

DISCUSSION

CSOM (tubo tympanic) is globally the most common middle ear disorder (25%). [65 million to 330 million] [people have ear discharge] according to estimates[05]. Hearing loss is a frequent and serious complication of CSOM, affecting 61% of patients. Our results matched previous research'. 28 patients (75%) were allocated to Group-A and 25 to Group B. (01-12 years) [06]. Ten group-A patients (25%) and 14 group-B patients (32%) were 13 to 16 years old (group-B). Group A included 24 male (65%) and 13 female (35%) patients, whereas group B had 28 male (65%) and 13 female (35%) patients. Group-A individuals given oral and topical ciprofloxacin had a 75% reduction in ear discharge, whereas group-B participants reported a 25% improvement[07]. While 17 people (45%) benefitted from taking the drops topically alone, (group B) exhibited a higher index of unresolved ear discharge (55.9%). Groups A and B were compared for ear discharge drying. Statistics showed a difference. P=0.000 indicates a statistically significant difference. Our sample patients' results matched Masum S.'s findings closely[08]. Using topical and oral ciprofloxacin, CSOM patients' ear discharge cleaned up 70% by week 2 and 90% by week 3. Masum S showed that only topical ciprofloxacin resulted in mediocre resolution rates (51% by week 2 and 85% by week 3). Renukananda GS10's research confirmed our findings. Oral and topical ciprofloxacin is effective in treating tubo-tympanic CSOM. A careful investigation of the disease's bacteriology helps with therapy. Oral and topical ciprofloxacin is a breakthrough in preventing facial paralysis, brain abscesses, and permanent hearing loss[09].

CONCLUSION

Overall, we found that the combination of oral and topical ciprofloxacin was more effective than topical ciprofloxacin alone in clearing up ear discharge. Combination ciprofloxacin is an important and necessary medical therapy for CSOM (tubo-tympanic). Therefore, providing therapy promptly results in improved overall management.

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