

ANTIBIOTIC PRESCRIPTION PROFILE IN CHRONIC SUPPURATIVE OTITIS MEDIA PATIENTS AT IBNU SINA HOSPITAL: A CROSS-SECTIONAL STUDY

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ABSTRAK

Otitis media supuratif kronis (OMSK) merupakan infeksi kronis telinga tengah dengan perforasi membran timpani dan sekret yang keluar terus-menerus. Penggunaan antibiotik yang tepat sangat krusial untuk mencegah resistensi dan komplikasi. Mengetahui profil penggunaan antibiotik pada pasien OMSK di RS Ibnu Sina Makassar periode Januari 2023–Desember 2025. Penelitian observasional deskriptif dengan desain *cross-sectional* menggunakan data rekam medis pasien OMSK yang memenuhi kriteria inklusi. Pengambilan sampel dilakukan dengan teknik *total sampling*. Dari 50 pasien (61 persepsan), kasus terbanyak pada usia dewasa (48%) dengan distribusi jenis kelamin yang seimbang (50% laki-laki, 50% perempuan). Golongan antibiotik terbanyak adalah β -laktam (67%), dengan jenis *cefixime* (48%). Sediaan kapsul paling dominan (44,3%) dengan dosis terbanyak *cefixime* 200 mg (31%). Frekuensi pemberian mayoritas 2 kali sehari (96,7%) dan lama pemberian tersering adalah 5 hari (36,1%). Penggunaan antibiotik pada pasien OMSK di RS Ibnu Sina didominasi oleh golongan β -laktam (*cefixime*) secara empiris dengan regimen dosis dan frekuensi yang sesuai standar, namun terdapat variasi durasi terapi yang memerlukan evaluasi lebih lanjut.

ABSTRACT

Antibiotic Prescription Profile in Chronic Suppurative Otitis Media Patients at Ibnu Sina Hospital: A Cross-Sectional Study. Chronic suppurative otitis media (CSOM) is a chronic middle ear infection characterized by tympanic membrane perforation and persistent discharge. Proper antibiotic use is crucial to prevent resistance and complications. To determine the antibiotic profile in CSOM patients at Ibnu Sina Hospital, Makassar, from January 2023 to December 2025. This descriptive observational study used a cross-sectional design with medical record data. Samples were collected using total sampling. From 50 patients (61 prescriptions), the majority were adults (48%) with an equal gender distribution (50% male, 50% female). The most common antibiotic class was β -lactams (67%), specifically *cefixime* (48%). Capsules were the most dominant dosage form (44.3%), with *cefixime* 200 mg as the most prescribed dose (31%). The frequency of administration was mostly twice daily (96.7%), and the most frequent duration was 5 days (36.1%). Conclusion: Antibiotic use for CSOM at Ibnu Sina Hospital is dominated by β -lactams (*cefixime*) administered empirically. While dosage and frequency align with standards, variations in treatment duration require further evaluation.

INTRODUCTION

Chronic Suppurative Otitis Media (CSOM) is a chronic inflammation of the middle ear and mastoid cavity characterized by a persistent or recurrent discharge (otorrhea) through a perforated tympanic membrane for more than two months.^{1,7} According to the World Health Organization (WHO), the global prevalence of CSOM ranges from 65 to 330 million people, predominantly in developing countries, where 60% of sufferers experience significant hearing loss.^{8,27} It is estimated that there are 31 million new cases of CSOM annually, with 22.6% occurring in children under five years of age.²⁷ In developing countries, the incidence is significantly higher compared to developed nations due to high poverty rates, limited health knowledge, and restricted access to healthcare services.^{7,27}

Previous studies have shown that CSOM often involves mixed infections of Gram-negative, Gram-positive, aerobic, and anaerobic bacteria.^{7,20} *Pseudomonas aeruginosa* and *Staphylococcus aureus* are identified as the most frequently encountered microorganisms, followed by other Gram-negative bacteria such as *Proteus spp.*, *Klebsiella spp.*, and *Escherichia coli*.^{20,28} Antibiotics are the primary component of CSOM management, administered either systemically or topically, based on identified pathogens and their sensitivity patterns.^{19,27}

The issue of antibiotic resistance in CSOM has become a growing global concern, particularly in treating chronic infections involving resistant bacteria.^{5,19} While many studies have evaluated antibiotic use and effectiveness in CSOM patients, specific evaluations regarding antibiotic usage trends at Ibnu Sina Hospital remain limited. Ibnu Sina Hospital Makassar possesses adequate facilities and medical record data to conduct research on antibiotic profiles in CSOM patients.²³

Few studies have specifically evaluated the trends and rationality of antibiotic prescribing for CSOM in this particular clinical setting. Hence, this research aims to evaluate the antibiotic profile used for the treatment of CSOM at Ibnu Sina Hospital, providing an overview of treatment trends, effectiveness, and potential future resistance issues. Based on this background, the researcher conducted a study entitled “Antibiotic Profile in Chronic Suppurative Otitis Media Treatment at Ibnu Sina Hospital 2023–2025.”

METHOD

This research is a descriptive observational study with a retrospective cross-sectional design. It aims to provide an objective description of the variables studied, specifically to obtain an overview of the antibiotic profile in the treatment of Chronic Suppurative Otitis Media (CSOM) at Ibnu Sina Hospital. The specific objectives include determining the distribution of antibiotics based on drug class, type, dosage, formulation, frequency, and duration of administration. The study was conducted at Ibnu Sina Hospital, Makassar, in 2025. The population consisted of all patients diagnosed with CSOM and treated at Ibnu Sina Hospital from January 2023 to December 2025.

Data collection was conducted using secondary data obtained from the patients' medical records. The sampling technique used was total sampling, with 50 patients meeting the inclusion and exclusion criteria, yielding 61 antibiotic prescription data points. Inclusion criteria included patients diagnosed with CSOM who received antibiotic treatment, whether inpatient or outpatient. Exclusion criteria were patients with incomplete medical data, those

not receiving antibiotics, or CSOM patients with specific comorbidities such as diabetes mellitus and intracranial complications.

This study obtained ethical approval from the Research Ethics Committee of the Faculty of Medicine, Universitas Muslim Indonesia, to access the medical records at Ibnu Sina Hospital. The confidentiality of the respondents' identities and medical information was fully maintained throughout the research process.

RESULT

The research conducted at Ibnu Sina Hospital YW UMI Makassar for the period of January 2023–December 2025 involved 50 patients who met the inclusion and exclusion criteria. From these patients, a total of 61 antibiotic prescription data points were identified, as some patients received more than one type of antibiotic during the study period.

I. Characteristics of Chronic Suppurative Otitis Media Patients Based on Age and Gender

Table 1. Frequency Distribution of Chronic Suppurative Otitis Media Patients Based on Age (n=50)

Characteristics	Category	Frequency (f)	Percentages (%)
Age (year)	Babies & Dooddlers	6	12
	Children	8	16
	Teenager	7	14
	Adult	24	48
	Elderly	5	10
Gender	Male	25	25
	Female	25	25

Table 1 shows that the highest frequency of CSOM patients was in the adult group (19–59 years), consisting of 24 individuals (48%). The gender distribution was perfectly balanced, with 25 male and 25 female patients (50% each).

II. Distribution of Antibiotic Classes and Types

Table 2. Frequency Distribution of Antibiotics Classes and Types (n=61)

Classes	Types	Frequency (f)	Percentages (%)
β-laktam	Cefixime (Third-generation cephalosporin)	29	48
	Cefadroxyl β-laktam (Second-generation cephalosporin)	8	13
	Amoxicilin (Penicilin)	3	5
	Amoxiclap (Penicilin + Inhibitor β-laktamase)	1	2
Fluoroquinolone	Ciprofloxacin	17	28
Lincosamide	Clindamicyin	3	4

Table 2 shows that β -lactams were the most frequently used antibiotic class, accounting for 41 prescriptions (67%). Cefixime was the most common specific antibiotic type prescribed (48%)

III. Distribution of Antibiotic Dose

Table 3. Frequency Distribution of Antibiotics Dose (n=61)

Types	Frequency (f)	Percentages (%)
Cefadroxyl 125 mg	5	8
Cefadroxyl 500 mg	3	5
Cefixime 100 mg	10	16
Cefixime 200 mg	19	31
Ciprofloxacin 500 mg	17	28
Amoxicilin 500 mg	3	5
Clindamycin 150 mg	1	2
Clindamycin 300 mg	2	3
Amoxiclap 125 mg	1	2

Table 3 shows The most frequently prescribed dose was Cefixime 200 mg, used in 19 prescriptions (31%).

IV. Distribution of Antibiotic Preparations

Table 4. Frequency Distribution of Antibiotics Preparations (n=61)

Types	Frequency (f)	Percentages (%)
Capsule	27	44
Tablet	20	33
Syrup	14	23

Table 4 shows the most frequently used antibiotic formulation was capsules, with 27 prescriptions (44%). In terms of formulation, capsules were the most common dosage form used in the treatment of CSOM.

V. Distribution of Antibiotic Frequency

Table 5. Frequency Distribution of Antibiotics Frequency (n=61)

Types	Frequency (f)	Percentages (%)
2x1 p.c	59	97
3x1 p.c	2	3

Table 5 shows The majority of antibiotic prescriptions followed a twice-daily (2x1 p.c) frequency, accounting for 59 prescriptions (96.7%).

VI. Distribution of Duration of Antibiotic Administration

Table 6. Frequency Distribution of Duration of Antibiotic Administration (n=61)

Types	Frequency (f)	Percentages (%)
2 days	2	3
3 days	5	8
5 days	22	36
6 days	15	24
7 days	6	10
8 days	1	2
10 days	5	8
14 days	3	5
15 days	2	3

Table 6 indicates that the most common treatment duration was 5 days, used in 22 prescriptions (36.1%).

DISCUSSION

Based on the research results, CSOM patients were most commonly found in the adult age group (19–59 years), accounting for 48% of cases. This finding aligns with the theory that CSOM in adults often represents a continuation of middle ear infections from childhood that were inadequately treated.^{2,23} Adults also engage in more social and work activities, increasing exposure to dust, pollution, and humid environments, which can exacerbate middle ear infections.^{9,10} Furthermore, the gender distribution in this study was equal (50:50), reinforcing the theory that CSOM is a multifactorial disease that can affect both males and females without significant risk differences.^{11,23}

The study showed that β -lactam antibiotics, specifically third-generation cephalosporins, were the most frequently used class (67%). Cefixime was the most commonly prescribed type (47.5%). This high use of cefixime is attributed to its broad-spectrum activity against Gram-negative bacteria, such as *Klebsiella* spp. and *Haemophilus influenzae*, and to its availability in oral formulations that improve patient compliance.³⁰ However, according to clinical guidelines, the primary therapy for active CSOM without complications should ideally involve topical quinolones to achieve high local concentrations and minimize systemic side effects.^{15,27}

Ciprofloxacin was the second most common antibiotic used (27.9%), particularly in cases with persistent purulent discharge or suspected *Pseudomonas aeruginosa* infection.²⁰ This is consistent with literature stating that ciprofloxacin remains effective against Gram-negative pathogens commonly found in CSOM.^{19,28} The most frequent dosage for cefixime was 200 mg, and for ciprofloxacin was 500 mg, both typically administered twice daily. These regimens align with standard pharmacological profiles to maintain therapeutic levels in the middle ear tissue.³⁰

Regarding the duration of therapy, most patients received antibiotics for 5–6 days. While this may be sufficient for mild cases, literature suggests that active CSOM may require 7 to 10 days, or even weeks, for persistent cases, to ensure complete bacterial eradication.^{27,29} The finding of very short durations in a small percentage of cases is a concern, as it potentially increases the risk of recurrence and antibiotic resistance.^{5,19}

Finally, antibiotic selection in this study was largely empirical, as routine culture and sensitivity testing were not always performed. This highlights the need for strengthening microbiological diagnostic systems to ensure more precise and rational antibiotic therapy in the future.^{27,28}

CONCLUSION

Based on the research conducted at RS Ibnu Sina YW UMI Makassar from January 2023 to December 2025, it can be concluded that Chronic Suppurative Otitis Media (CSOM) predominantly affects the adult age group (19–59 years), with a balanced distribution between male and female patients. The pharmacological profile of the treatment is dominated by β -lactam antibiotics, specifically third-generation cephalosporins, with Cefixime being the most frequently prescribed. These antibiotics are primarily administered in capsule form, with Cefixime 200 mg being the most common dosage. Treatment regimens typically follow a twice-daily schedule for 5 days. However, the selection of these antibiotics remains largely empirical due to a lack of routine culture and sensitivity testing, and the observed treatment durations—some of which are less than 5 days—may be inadequate to effectively manage a chronic infection like CSOM. Overall, while the dosage and frequency generally align with standard therapeutic guidelines, variations in drug choice and duration highlight a need for further evaluation to ensure rational antibiotic use and support antimicrobial resistance control.

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