



Comparison of Treatment Characteristics of Chronic Suppurative Otitis Media

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Abstract

To improve safe and quality health services, the Central Government has established the 2018 National Guidelines for Medical Services (PNPK) concerning the Management of Chronic Suppurative Otitis Media (CSOM), making it a reference, especially for Primary Health Care. To analyze the treatment characteristics of Chronic Suppurative Otitis Media (CSOM) in Mamajang Primary Health Care, Jongaya Primary Health Care, and Minasa Upa Primary Health Care, Makassar for January 2023-December 2023. This type of research is quantitative with a descriptive method through the cross-sectional study approach. The sampling technique used is total sampling. The data collection technique uses secondary data in the form of medical records of chronic suppurative media otitis (CSOM) patients at the Mamajang Primary Health Care, Jongaya Primary Health Care, and Minasa Upa Primary Health Care, Makassar for the 2023 visit year. Based on research conducted at the in Mamajang Primary Health Care, Jongaya Primary Health Care, and Minasa Upa Primary Health Care, Makassar City 72 people with Chronic Suppurative Media Otitis (CSOM) were found. There are differences in the treatment characteristics of the three Primary Health Care, namely the treatment at the Mamajang Primary Health Care is the most given combination of systemic antibiotics + systemic corticosteroids (46%). In contrast, in the Jongaya Primary Health Care, the most systemic antibiotic treatment (44%) was given. The Minasa Upa Primary Health Care has the most systemic antibiotic treatment (27%) and the combination of systemic antibiotics + systemic corticosteroids (27%) is given the most.

Introduction

Chronic Otitis Media Suppuration (OMSK) is a chronic inflammatory disease of the middle ear characterized by perforation of the tympanic membrane, with or without persistent otorrhea (secretions). Clinically, OMSK is divided into two types, namely tubotympanic type OMSK and aticoantral type OMSK. In tubotympanic type OMSK, the perforation of the tympanic membrane occurs in the central part. This type is also known as the safe type because it does not risk more serious complications. Perforation in aticoantral type OMSK occurs in the attic or marginal part. This type of OMSK is also referred to as the dangerous type of OMSK because it is often associated with the process of bone destruction due to cholesteatoma, granulation, or osteitis, increasing the complication rate (Hidayat, 2022; Nafi'ah et al., 2022; Verhoeff et al., 2006).

The prevalence of chronic suppurative otitis media (CSM) worldwide is approximately 65-330 million people, mainly in developing countries, where 39-200 million people (60%) suffer from significantly reduced hearing function. There are an estimated 31 million new cases of OMSK per year, with 22.6% in children aged <5 years. The prevalence of OMSK in developing countries with an incidence of 11% is higher compared to developed countries with a lower incidence of 2%, because in developing countries there is still high poverty, lack of knowledge about health, and limited health services. According to data from the National Health Survey on Sense of Sight and Hearing, the prevalence of OMSK in Indonesia is between 3.0-5.20%, or approximately 6.6 million Indonesians (Gupta et al., 2020; Government of Indonesia, 2018; Suryani & Widuri, 2022).

As an effort to improve safe and quality health services in accordance with Law No. 17 of 2023 and Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07 / MENKES / 350 / 2018 concerning Health where the Central Government establishes National Guidelines for Medical Services (PNPK) Management of Chronic Suppurative Otitis Media (OMSK). Management of OMSK based on the National Guidelines for Medical Services (PNPK) for the Management of Chronic Suppurative Otitis Media (OMSK) in 2018, namely surgical and non-surgical management or treatment. Non-surgical management with aural toilet, topical antibiotics and oral antibiotics. Topical antibiotics and aural toilet are the main principles in benign type OMSK therapy. Whereas in malignant type OMSK, surgical measures such as mastoidectomy, tympanoplasty, mastoid obliteration, and meatoplasty are required (Government of Indonesia, 2018; Sharma et al., 2018).

Inappropriate treatment or management such as irrational use of antibiotics can increase the occurrence of antibiotic resistance which makes OMSK therapy more difficult. The principle of OMSK management based on WHO guidelines is to eradicate infection and cholesteatoma, and close the tympanic membrane perforation. If management is delayed, extracranial complications and intracranial complications may occur. Based on a retrospective study in Nigeria, there is evidence of success in reducing the incidence after the recommendations of the WHO guidelines have been implemented. The results stated that the prevalence rate of OMSK decreased from 9% to 5.1% after receiving broad-spectrum antibiotic management and mastoid exploration surgery ($p < 0.001$) (Adellia et al., 2024; Government of Indonesia, 2018).

Based on the Decree of the Minister of Health of the Republic of Indonesia Number HK.02.02/MENKES/514/2015 concerning clinical guidelines for doctors in first-level health service facilities, it states that medical services in first-level health service facilities must be carried out according to standard operational procedures compiled in the form of Clinical Practice Guidelines (PPK) by health service facilities. Therefore, every doctor in primary health care facilities must comply with the standard guidelines set out in the Decree of the Minister of Health of the Republic of Indonesia Number HK.02.02 / MENKES / 514/2015 (Government of Indonesia, 2018).

Based on the description of the background of the study above, the researcher wants to know the characteristics of OMSK treatment in the first-level health service facility and compare the suitability of the treatment provided with the treatment reference in the National Guidelines for Medical Services (PNPK) for the Management of Chronic Suppurative Otitis Media (OMSK) in 2018.

Methods

This study used quantitative research and observational research design with descriptive methods through a cross sectional study design approach. This research was conducted at the Mamajang Health Center, Jongaya Health Center, and Minasa Upa Health Center in Makassar City using secondary data in the form of medical records for the period January 2023-December 2023. The sampling technique used in this study was a non-probability sampling

technique with a total sampling technique approach. The inclusion criteria in this study were patients who were diagnosed with OMSK and had been treated during the January 2023-December 2023 visit period at the Mamajang Health Center, Jongaya Health Center, and Minasa Upa Health Center in Makassar City.

Result and Discussion

This study was conducted at the Mamajang Health Center, Jongaya Health Center, and Minasa Upa Health Center in Makassar City regarding the characteristics of treatment of Chronic Suppurative Otitis Media (OMSK) in the period January 2023-December 2023. This study was conducted by taking secondary data from the medical records of patients with Chronic Suppurative Otitis Media (OMSK) registered at the Mamajang Health Center, Jongaya Health Center, and Minasa Upa Health Center in Makassar City in 2023. The results of this study are presented in tabular form below:

Table 1. Characteristics of Research Samples

| Sample characteristics | Total | |
|-------------------------|-----------|-------------|
| | n | % |
| Gender | 39 | 54% |
| Male | | |
| Female | 33 | 46% |
| Total | 72 | 100% |
| Age | | |
| Toddlers (0-5 Years) | 4 | 6% |
| Children (6-11 Years) | 2 | 3% |
| Teenagers (12-25 Years) | 14 | 19% |
| Mature (26-45 Years) | 34 | 47% |
| Elderly (46-65 Years) | 15 | 21% |
| Seniors (>66 Years) | 3 | 4% |
| Total | 72 | 100% |

Source: Secondary Data 2023

Based on Table 1, it was found that the prevalence of patients with Chronic Suppurative Otitis Media (OMSK) at the Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center in Makassar City in the period January 2023-December 2023 was 72 people. Based on the gender variable, the most in the male gender was 39 (54%) and in the age variable the most in the adult group (26-45 years) as many as 34 (47%) people.

Table 2. Prevalence of OMSK Patients at Mamajang Health Center, Jongaya Health Center and Minasa Upa Health Center for the Period January 2023-December 2023

| Sample characteristics | Research Location | | |
|-------------------------|-----------------------|----------------------|----------------------------|
| | PKM Mamajang n (%) | PKM Jongaya n (%) | PKM Minasa Upa n (%) |
| Gender | | | |
| Male | 8 (37%) | 19 (55%) | 12 (80%) |
| Female | 14 (63%) | 16 (45%) | 3 (20%) |
| Total | 22 (100%) | 35 (100%) | 15 (100%) |
| Age | | | |
| Toddlers (0-5 Years) | 3 (14%) | 1 (3%) | 0 (0%) |
| Children (6-11 Years) | 1 (5%) | 0 (0%) | 1 (7%) |
| Teenagers (12-25 Years) | 3 (14%) | 6 (17%) | 5 (33%) |

| | | | |
|-----------------------|------------------|------------------|------------------|
| Mature (26-45 Years) | 9 (41%) | 19 (54%) | 6 (40%) |
| Elderly (46-65 Years) | 4 (18%) | 9 (26%) | 2 (13%) |
| Seniors (>66 Years) | 2 (9%) | 0 (0%) | 1 (7%) |
| Total | 22 (100%) | 35 (100%) | 15 (100%) |

Source: Secondary Data 2023

Based on Table 2, the prevalence of patients with Chronic Suppurative Otitis Media (OMSK) at the Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center in Makassar City in the period January 2023 - December 2023 was 72 people. With a distribution of 22 people at Mamajang Health Center, 35 people at Jongaya Health Center and 15 people at Minasa Upa Health Center. The largest gender distribution at Mamajang Health Center was 14 women (63%), while Jongaya Health Center was 19 people (55%) male and as many as 12 people (80%) male at Minasa Upa Health Center.

Based on age group at Mamajang Health Center, the highest number was in the adult age group (26-45 years) as many as 9 people (41%), Jongaya Health Center had the highest number in the adult age group (26-45 years) as many as 19 people (54%), and Minasa Upa Health Center had the highest number in the adult age group (26-45 years).

Table 3. Characteristics of OMSK Treatment at Mamajang Health Center for the Period January 2023-December 2023

| Treatment characteristics | Total | |
|--|-----------|-------------|
| | n | % |
| Systemic Antibiotics | | |
| Cefadroxil | 2 | 9% |
| Ciprofloxacin | 1 | 5% |
| Amoxicillin | 1 | 5% |
| Total | 4 | 19% |
| Topical antibiotics + Systemic antibiotics | | |
| Chloramphenicol + Cefadroxil | 2 | 9% |
| Total | 2 | 9% |
| Systemic Antibiotics + Systemic Corticosteroids | | |
| Cefadroxil + Methylprednisolone | 8 | 36% |
| Amoxicillin + Dexamethasone | 1 | 5% |
| Amoxicillin + Methylprednisolone | 1 | 5% |
| Total | 10 | 46% |
| Ear Toilet + Systemic Antibiotics | | |
| Ear Toilet + Cefadroxil | 1 | 5% |
| Total | 1 | 5% |
| Ear Toilet + Systemic Antibiotics + Systemic Corticosteroids | | |
| Ear Toilet + Cefadroxil + Dexamethasone | 1 | 5% |
| Ear Toilet + Cefadroxil + Methylprednisolone | 3 | 14% |
| Ear Toilet + Amoxicillin + Methylprednisolone | 1 | 5% |
| Total | 5 | 24% |
| Grand Total | 22 | 100% |

Source: Secondary Data 2023

Table 3 shows the prevalence of patients with Chronic Suppurative Otitis Media (OMSK) at the Mamajang Makassar City Health Center in the period January 2023-December 2023 as many as 22 people. OMSK treatment distribution was obtained by giving treatment in the form of systemic antibiotics, namely 4 people (19%), giving systemic antibiotics + systemic corticosteroids as many as 10 people (46%). Management in the form of ear toilet + systemic antibiotics as many as 1 person (5%). Management in the form of ear toilets + systemic antibiotics + systemic corticosteroids as many as 5 people (24%).

Table 4. Characteristics of OMSK Treatment at Jongaya Health Center for the Period January 2023-December 2023

| Treatment characteristics | Total | |
|--|-----------|------------|
| | n | % |
| Systemic Antibiotics | | |
| Cefadroxil | 3 | 9% |
| Ciprofloxacin | 3 | 9% |
| Amoxicillin | 9 | 26% |
| Total | 15 | 44% |
| Topical Antibiotics | | |
| Chloramphenicol | 2 | 6% |
| Ofloxacin | 4 | 11% |
| Total | 6 | 17% |
| Topical antibiotics + Systemic antibiotics | | |
| Amoxicillin + Ofloxacin | 1 | 3% |
| Total | 1 | 3% |
| Systemic Antibiotics + Systemic Corticosteroids | | 0% |
| Cefadroxil + Dexamethasone | 2 | 6% |
| Amoxicillin + Dexamethasone | 1 | 3% |
| Total | 3 | 9% |
| Topical Antibiotics + Systemic Corticosteroids | | |
| Chloramphenicol + Dexamethasone | 1 | 3% |
| Total | 1 | 3% |
| Ear Toilet + Systemic Antibiotics | | |
| Ear Toilet + Ciprofloxacin | 1 | 3% |
| Ear Toilet + Cefadroxil | 3 | 9% |
| Total | 4 | 12% |
| Ear Toilet + Systemic Antibiotics + Systemic Corticosteroids | | |
| Ear Toilet + Cefadroxil + Methylprednisolone | 1 | 3% |
| Ear Toilet + Cefadroxil + Dexamethasone | 1 | 3% |
| Ear Toilet + Amoxicillin + Methylprednisolone | 1 | 3% |
| Ear Toilet + Amoxicillin + Dexamethasone | 1 | 3% |
| Total | 4 | 12% |
| Ear Toilet + Topical Antibiotics + Systemic Antibiotics | | |
| Ear Toilet + Chloramphenicol + Amoxicillin | 1 | 3% |
| Total | 1 | 3% |

| | | |
|--------------------|-----------|-------------|
| Grand Total | 35 | 100% |
|--------------------|-----------|-------------|

Source: Secondary Data 2023

Table 4 shows the prevalence of patients with Chronic Suppurative Otitis Media (OMSK) at Jongaya Health Center Makassar City in the period January 2023-December 2023 as many as 35 people. The distribution of OMSK treatment was obtained by giving treatment in the form of systemic antibiotics, namely 15 people (44%). Giving topical antibiotics as many as 6 people (17%). Giving topical antibiotics + systemic antibiotics in the form of ofloxacin + amoxicillin as many as 1 person (3%).

Systemic antibiotics + systemic corticosteroids were given to 3 people (9%). Topical antibiotics + systemic corticosteroids in the form of chloramphenicol + dexamethason for 1 person (3%). Management in the form of ear toilet + systemic antibiotics as many as 4 people (12%). Management in the form of ear toilets + systemic antibiotics + systemic corticosteroids as many as 4 people (12%). Management in the form of ear toilet + topical antibiotic + systemic antibiotic as many as 1 person (3%).

Table 5. Characteristics of OMSK Treatment at Minasa Upa Health Center January 2023-December 2023 Period

| Treatment characteristics | Total | |
|---|-----------|-------------|
| | n | % |
| Systemic Antibiotics | | |
| Cefadroxil | 1 | 7% |
| Amoxicillin | 3 | 20% |
| Total | 4 | 27% |
| Topical antibiotics + Systemic antibiotics | | |
| Chloramphenicol + Cefadroxil | 1 | 7% |
| Total | 1 | 7% |
| Systemic Antibiotics + Systemic Corticosteroids | | |
| Amoxicillin + Dexamethasone | 3 | 20% |
| Amoxicillin + Methylprednisolone | 1 | 7% |
| Total | 4 | 27% |
| Topical Antibiotics + Systemic Antibiotics + Systemic Corticosteroids | | |
| Chloramphenicol + Amoxicillin + Dexamethasone | 1 | 7% |
| Chloramphenicol + Amoxicillin + Methylprednisolone | 1 | 7% |
| Total | 2 | 14% |
| Ear Toilet + Systemic Antibiotics | | |
| Ear Toilet + Amoxicillin | 1 | 7% |
| Ear Toilet + Cefadroxil | 1 | 7% |
| Total | 2 | 14% |
| Ear Toilet + Systemic Antibiotics + Systemic Corticosteroids | | |
| Ear Toilet + Cefadroxil + Methylprednisolone | 1 | 7% |
| Ear Toilet + Amoxicillin + Methylprednisolone | 1 | 7% |
| Total | 2 | 14% |
| Grand Total | 15 | 100% |

Source: Secondary Data 2023

Table 5 shows the prevalence of patients with Chronic Suppurative Otitis Media (OMSK) at the Minasa Upa Makassar City Health Center in the period January 2023 - December 2023 as many as 15 people. OMSK treatment distribution was obtained by giving treatment in the form of systemic antibiotics, namely 4 people (27%), giving topical antibiotics + systemic antibiotics in the form of chloramphenicol + cefadroxil as many as 1 person (7%).

Systemic antibiotics + systemic corticosteroids were given to 4 people (27%). Giving topical antibiotics + systemic antibiotics + systemic corticosteroids as many as 2 people (14%). Management in the form of ear toilet + systemic antibiotics as many as 2 people (14%). Management in the form of ear toilet + systemic antibiotics + systemic corticosteroids as many as 2 people (14%).

Table 6. Comparison of OMSK Treatment in Mamajang Health Center, Jongaya Health Center and Minasa Upa Health Center in 2023

| Treatment characteristics | Mamajang Health Center | | Jongaya Health Center | | Minasa Upa Health Center | | Total | |
|--|------------------------|-----|-----------------------|-----|--------------------------|----|-------|-----|
| | n | % | n | % | n | % | n | % |
| Systemic Antibiotics | | | | | | | | |
| Cefadroxil | 2 | 3% | 3 | 4% | 1 | 1% | 6 | 8% |
| Ciprofloxacin | 1 | 1% | 3 | 4% | 0 | 0 | 4 | 6% |
| Amoxicillin | 1 | 1% | 9 | 13% | 3 | 4% | 13 | 18% |
| Topical Antibiotics | | | | | | | | |
| Chloramphenicol | 0 | 0 | 2 | 3% | 0 | 0 | 2 | 3% |
| Ofloxacin | 0 | 0 | 4 | 6% | 0 | 0 | 4 | 6% |
| Topical antibiotics + Systemic antibiotics | | | | | | | | |
| Chloramphenicol + Cefadroxil | 2 | 3% | 0 | 0 | 1 | 1% | 3 | 4% |
| Ofloxacin + Amoxicillin | 0 | 0 | 1 | 1% | 0 | 0 | 1 | 1% |
| Systemic Antibiotics + Systemic Corticosteroids | | | | | | | | |
| Cefadroxil + Methylprednisolone | 8 | 11% | 0 | 0 | 0 | 0 | 8 | 11% |
| Cefadroxil + Dexamethasone | 0 | 0 | 2 | 3% | 0 | 0 | 2 | 3% |
| Amoxicillin + Methylprednisolone | 1 | 1% | 0 | 0 | 1 | 1% | 2 | 3% |
| Amoxicillin + Dexamethasone | 1 | 1% | 1 | 1% | 3 | 4% | 5 | 7% |
| Topical Antibiotics + Systemic Corticosteroids | | | | | | | | |
| Chloramphenicol + Dexamethasone | 0 | 0 | 1 | 1% | 0 | 0 | 1 | 1% |
| Topical Antibiotics + Systemic Antibiotics + Systemic Corticosteroids | | | | | | | | |
| Chloramphenicol + Amoxicillin + Dexamethasone | 0 | 0 | 0 | 0 | 1 | 1% | 1 | 1% |
| Chloramphenicol + Amoxicillin + Methylprednisolone | 0 | 0 | 0 | 0 | 1 | 1% | 1 | 1% |
| Ear Toilet + Systemic Antibiotics | | | | | | | | |

| | | | | | | | | |
|---|---|----|---|----|---|----|---|----|
| Ear Toilet + Ciprofloxacin | 0 | 0 | 1 | 1% | 0 | 0 | 1 | 1% |
| Ear Toilet + Cefadroxil | 1 | 1% | 3 | 4% | 1 | 1% | 5 | 7% |
| Ear Toilet + Amoxicillin | 0 | 0 | 0 | 0 | 1 | 1% | 1 | 1% |
| Ear Toilet + Systemic Antibiotics + Systemic Corticosteroids | | | | | | | | |
| Ear Toilet + Cefadroxil + Methylprednisolone | 3 | 4% | 1 | 1% | 1 | 1% | 5 | 7% |
| Ear Toilet + Cefadroxil + Dexamethasone | 1 | 1% | 1 | 1% | 0 | 0 | 2 | 3% |
| Ear Toilet + Amoxicillin + Methylprednisolone | 1 | 1% | 1 | 1% | 1 | 1% | 3 | 4% |
| Ear Toilet + Amoxicillin + Dexamethasone | 0 | 0 | 1 | 1% | 0 | 0 | 1 | 1% |
| Ear Toilet + Topical Antibiotics + Systemic Antibiotics | | | | | | | | |
| Ear Toilet + Chloramphenicol + Amoxicillin | 0 | 0 | 1 | 1% | 0 | 0 | 1 | 1% |

Source: Secondary Data 2023

Based on table 6, it is obtained that the prevalence of chronic suppurative otitis media (OMSK) sufferers at the Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center in Makassar City in the period January 2023-December 2023 was 72 people. Treatment of patients with Chronic Suppurative Otitis Media (OMSK) at Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center has a number of different and varied treatment characteristics.

The provision of treatment for patients with Chronic Suppurative Otitis Media (OMSK) at Mamajang Health Center in 2023 was mostly given systemic antibiotics + systemic corticosteroids in the form of cefadroxil + methylprednisolone as many as 8 people (11%). At Jongaya Health Center, the most systemic antibiotics were given in the form of amoxicillin as many as 9 people (13%). And at the Minasa Upa Health Center, the most systemic antibiotics were given in the form of amoxicillin as many as 3 people (4%) and systemic antibiotics + systemic corticosteroids in the form of amoxicillin + dexamethason as many as 3 people (4%).

Table 7. Recapitulation of OMSK Treatment Characteristics at Mamajang Health Center, Jongaya Health Center and Minasa Upa Health Center in 2023

| Treatment characteristics | Total | |
|---------------------------|-------|-----|
| | n | % |
| Systemic Antibiotics | 23 | 32% |
| Cefadroxil | 6 | 8% |
| Ciprofloxacin | 4 | 6% |
| Amoxicillin | 13 | 18% |
| Topical Antibiotics | 6 | 9% |
| Chloramphenicol | 2 | 3% |

| | | |
|---|----|-----|
| Ofloxacin | 4 | 6% |
| Topical Antibiotics + Systemic Antibiotics | 4 | 5% |
| Chloramphenicol + Cefadroxil | 3 | 4% |
| Ofloxacin + Amoxicillin | 1 | 1% |
| Systemic Antibiotics + Systemic Corticosteroids | 17 | 24% |
| Cefadroxil + Methylprednisolone | 8 | 11% |
| Cefadroxil + Dexamethasone | 2 | 3% |
| Amoxicillin + Methylprednisolone | 2 | 3% |
| Amoxicillin + Dexamethasone | 5 | 7% |
| Topical Antibiotics + Systemic Corticosteroids | 1 | 1% |
| Chloramphenicol + Dexamethasone | 1 | 1% |
| Topical Antibiotics + Systemic Antibiotics + Systemic Corticosteroids | 2 | 2% |
| Chloramphenicol + Amoxicillin + Dexamethasone | 1 | 1% |
| Chloramphenicol + Amoxicillin + Methylprednisolone | 1 | 1% |
| Ear Toilet + Systemic Antibiotics | 7 | 10% |
| Ear Toilet + Ciprofloxacin | 1 | 1% |
| Ear Toilet + Cefadroxil | 5 | 7% |
| Ear Toilet + Amoxicillin | 1 | 1% |
| Ear Toilet + Systemic Antibiotics + Systemic Corticosteroids | 11 | 15% |
| Ear Toilet + Cefadroxil + Methylprednisolone | 5 | 7% |
| Ear Toilet + Cefadroxil + Dexamethasone | 2 | 3% |
| Ear Toilet + Amoxicillin + Methylprednisolone | 3 | 4% |
| Ear Toilet + Amoxicillin + Dexamethasone | 1 | 1% |
| Ear Toilet + Topical Antibiotics + Systemic Antibiotics | 1 | 1% |
| Ear Toilet + Chloramphenicol + Amoxicillin | 1 | 1% |

Source: Secondary Data 2023

In table 7, the recapitulation of treatment in patients with Chronic Suppurative Otitis Media (OMSK) from the three puskesmas, namely Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center in 2023, the most treatment was given in the form of systemic antibiotics as many as 23 people (32%). Then giving systemic antibiotics + systemic corticosteroids as many as 17 people (24%). Giving Ear Toilet + Systemic Antibiotics + Systemic Corticosteroids as many as 11 people (15%). Giving Ear Toilet + Systemic Antibiotics as many as 7 people (10%). Giving topical antibiotics as many as 6 people (9%).

Giving a combination of treatment in the form of Topical Antibiotics + Systemic Antibiotics as many as 4 people (5%). Then Topical Antibiotics + Systemic Antibiotics + Systemic Corticosteroids as many as 2 people (2%). Topical Antibiotics + Systemic Corticosteroids were given to 1 person (1%). And the administration of Topical Antibiotics + Systemic Corticosteroids was 1 person (1%).

Frequency Distribution of Chronic Suppurative Otitis Media Patients Based on Gender

Based on research that has been conducted on 72 patients with Chronic Suppurative Otitis Media Patients at Mamajang Health Center, Jongaya Health Center, and Minasa Upa Health Center Makassar City January 2023-December 2023 Period, the results show that the most

sufferers based on gender are men as many as 39 people (54%). In theory, it is found that men experience OMSK more often because they are exposed to environmental contaminants due to outside activities. This study is in line with research conducted by Seres et al. in 2024 on 110 samples and found that OMSK is more common in men as many as 60 people (54.5%) compared to women 50 people (45.5%).(Taoussi et al., 2023; Triola et al., 2023, 2024)

Another similar study was conducted by Novian G et al in 2020 which found the highest prevalence of OMSK incidence in men around 473 patients (56.68%) compared to women 334 patients (43.32%) (Head et al., 2020; Nasution et al., 2023; Novian et al., 2020).

Frequency Distribution of Chronic Suppurative Otitis Media Patients by Age Group

Based on research that has been conducted on 72 patients with Chronic Suppurative Otitis Media Patients at Mamajang Health Center, Jongaya Health Center, and Minasa Upa Health Center Makassar City January 2023-December 2023 Period, the results show that the most patients based on age groups are adult age groups (26-45 years) as many as 34 people (47%).

The high incidence of OMSK in adults aged >17 years is due to exposure to infection from the environment, poor hygiene and healthy habits and a history of chronic infections that are not adequately treated. OMSK experienced in adulthood can be caused by eustachian tube dysfunction, weak immune status, and both active and passive smoking. The large number of cases of OMSK in 16-25 years old is caused by many factors, one of which is due to ear infections that began in childhood, and also a history of discharge from the ear since childhood and coming back as an adult, OMSK that occurs is a continuation of complaints that occurred as a child (Bhutta et al., 2020; Chong et al., 2021; Farida & Oktaria, 2016; Narendra & Saputra, 2020; Novian et al., 2020).

This is in line with research conducted by Seres, et al in 2024 on 110 samples and it was found that OMSK was found more in the late adolescence, early adulthood and late adulthood age groups as many as 77 people (70%).²³ Another similar study was conducted by Puspa, et al in 2023 that the incidence of OMSK was found more in the adult age group (20-60 years) around 35 people (70%) compared to other age groups (Ganong, 2008; Khairkar et al., 2023; Mahdiani et al., 2021; Puspa et al., 2023; Zhang et al., 2014).

Frequency Distribution of Chronic Suppurative Otitis Media Patients Based on Treatment Characteristics

Based on research on treatment in patients with Chronic Suppurative Otitis Media (OMSK) from the three puskesmas, namely Puskesmas Mamajang, Puskesmas Minasa Upa, and Puskesmas Jongaya in 2023, the most treatment was given in the form of systemic antibiotics as many as 65 people (90%) with details of cefadroxil 31 people (43%), amoxicillin 29 people (40%) and ciprofloxacin 5 people (7%). Systemic corticosteroids were given to 31 people (43%) with details of dexamethason 12 people (17%), and methylprednisolone 19 people (26%). Topical antibiotics were given to 14 people (19%) in the form of chloramphenicol 9 people (13%) and ofloxacin people (7%). The aural toilet action in the research was carried out in 19 people (26%) (Bois et al., 2013; Khairkar et al., 2023).

This is in line with research conducted by Seres, et al in 2024 on 110 samples and it was found that the treatment of OMSK was more in the form of systemic antibiotics as many as 105 people (95.4%), topical antibiotics 94 people (85.4%) and ear toilets 54 people (49%).²³ Another study that is in line is research in the ENT-KL polyclinic of Buleleng Regency Hospital in 2022 giving the most frequent use of systemic antibiotics 53 people (71.86%) and the least aural toilet therapy and topical antibiotics as many as 6 people (18.75%) (Putra, 2023; Soepardi et al., 2012).

The administration of systemic antibiotics in patients aged 17-25 years with a safe type of subtotal tympanic membrane perforation aims to treat and prevent infection in the middle ear

area. Tympanic membrane perforations, especially subtotal ones, can create conditions that favor the growth of bacteria or other microorganisms. Systemic antibiotics are an option to reduce the burden of infection, prevent spread to surrounding tissues, and avoid serious complications such as bone damage or hearing loss. In the type involving bacterial infection, treatment that addresses the cause of infection and inflammation is required. In addition, the use of antibiotics can prevent the spread of infection to other areas of the ear or other organs of the body, reduce symptoms, and prevent more serious complications (Hall, 2016; Triola et al., 2024).

It is not yet known what type of oral antibiotic is most effective in managing OMSK. Based on 4 randomized, randomized trial studies comparing different types of oral antibiotics to treat otorrhea of OMSK, namely: 1) The first study with a total of 190 patients compared cefotiam with amoxicillin-clavulanic acid for 10 days. This study found no significant difference ($p=0.55$) between cefotiam and amoxicillin-clavulanic acid. Gastrointestinal adverse events were observed in 13 patients (14%) with cefotiam and 34 patients (36%) with amoxicillin-clavulanic acid ($p=0.001$); 2) The second study with a total of 22 patients compared levofloxacin (1x500 mg) with amoxicillin-clavulanic acid (3x500 mg) for 10 days. This study found a significant difference ($p=0.05$) where levofloxacin was better than amoxicillin-clavulanic acid. No side effects were reported; 3) The third study with a total of 76 patients compared ciprofloxacin (2x500 mg) with amoxicillin-clavulanic acid (3x500 mg) for 10 days. This study found a significant difference ($p=0.04$) where ciprofloxacin was better than amoxicillin-clavulanic acid. Gastrointestinal side effects were found to be 10% with ciprofloxacin and 14% with amoxicillin-clavulanic acid; 4) The fourth study with a total of 45 patients compared cefpodoxim (2x500 mg) with ciprofloxacin (2x500 mg) for 7 days in acute exacerbation of OMSK. There was no significant difference between groups ($p = 0.025$) where cefpodoxime was equivalent to ciprofloxacin. The side effect of diarrhea was found in 2 patients with cefpodoxime.

The principles of OMSK therapy are to eradicate infection, remove pathologic tissue, and restore hearing function. OMSK management is divided according to type, safe type or dangerous type with cholesteatoma. In the safe type, the first line of management is to administer topical antibiotics of the quinolone group accompanied by an aural toilet. Aminoglycoside antibiotics are not recommended as first line due to ototoxic potential. Antibiotic ear drops (often combined with dexamethasone) with aural toilet is an effective first-line conservative management in patients with OMSK. (Government of Indonesia, 2018).

Oral antibiotics are a second-line option in patients with OMSK, which are considered for persistent otorrhea after 3 weeks of first-line management and/or intracranial complications. Their efficacy is affected by bioavailability, bacterial resistance, presence of fibrosis in the middle ear, and mucosal vascularization. There are differences between the treatment of Chronic Suppurative Otitis Media (OMSK) in the 2018 National Guidelines for Medical Services (PNPK) for the Management of Chronic Suppurative Otitis Media (OMSK) and the results of the research conducted, namely in the study obtained the characteristics of the treatment of Chronic Suppurative Otitis Media (OMSK) by administering systemic antibiotics and a combination of systemic antibiotics + systemic corticosteroids (Government of Indonesia, 2018).

Based on the National Guidelines for Medical Services (PNPK) for the Management of Chronic Suppurative Otitis Media (OMSK) 2018, antibiotic ear drops (often combined with dexamethasone) accompanied by aural toilet is an effective first-line conservative management in OMSK patients. The discrepancy in the provision of treatment is influenced by the limited availability of medicines at Puskesmas that are in accordance with the standards set out in the National Guidelines for Medical Services (PNPK) (Government of Indonesia, 2018).

Research conducted by Asnawi (2019) states that drug shortages at Puskesmas occur due to the incompatibility of Puskesmas drug requests with the list of drugs distributed and determined by the Health Office. The availability of drugs at the Puskesmas can be fulfilled if drug planning is in accordance with the amount of drug use in the previous period and existing disease patterns and can be adjusted to the National Guidelines for Medical Services (PNPK) (Asnawi et al., 2019).

Conclusion

Based on the results of research that has been conducted on the comparison of treatment characteristics of Chronic Suppurative Otitis Media (OMSK) at Mamajang Health Center, Jongaya Health Center and Minasa Upa Health Center in Makassar City in the period January 2023-December 2023, it can be concluded that:

From the research conducted, it was found that the prevalence of patients with Chronic Suppurative Otitis Media (OMSK) based on gender and age at the Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center in Makassar City in the period January 2023-December 2023 was 72 people. The total prevalence of patients with Chronic Suppurative Otitis Media (OMSK) based on gender and age at the Mamajang Health Center in the period January 2023-December 2023 was 22 people. The most sex group in the female group was 14 people (63%). And the most age group in the adult group was 9 people (41%). The total prevalence of patients with Chronic Suppurative Otitis Media (OMSK) based on gender and age at Jongaya Health Center for the period January 2023-December 2023 was 35 people. The most sex group in the male group was 19 people (55%). And the most age group in the adult group was 19 people (54%). The total prevalence of patients with Chronic Suppurative Otitis Media (OMSK) based on gender and age at the Minasa Upa Health Center for the period January 2023-December 2023 was 15 people. The sex group was mostly in the male group as many as 12 people (80%). And the most age group in the adult group was 6 people (40%).

Treatment of Chronic Suppurative Otitis Media (OMSK) at Mamajang Health Center is mostly given in the form of a combination of systemic antibiotics + systemic corticosteroids as many as 10 people (46%). With the characteristics of treatment in the form of a combination of cefadroxil + methylprednisolone as many as 8 people (36%), amoxicillin + dexamethason as many as 1 person (5%), and amoxicillin + methylprednisolone as many as 1 person (5%).

Treatment of Chronic Suppurative Otitis Media (OMSK) at Jongaya Health Center is mostly given in the form of systemic antibiotics as many as 15 people (44%). With the characteristics of treatment in the form of amoxicillin as many as 9 people (26), cefadroxil as many as 3 people (9%), and ciprofloxacin as many as 3 people (9%).

Treatment of Chronic Suppurative Otitis Media (OMSK) at Minasa Upa Health Center is mostly given in the form of systemic antibiotics as many as 4 people (27%) and a combination of systemic antibiotics + systemic corticosteroids as many as 4 people (27%). With the characteristics of treatment administration in the form of amoxicillin as many as 3 people (20%), cefadroxil as many as 1 person (7%), a combination of amoxicillin + dexametahson as many as 3 people (20%) and amoxicillin + methylprednisolone as many as 1 person (7%).

There are differences in the provision of treatment for patients with Chronic Suppurative Otitis Media (OMSK) between Mamajang Health Center, Minasa Upa Health Center, and Jongaya Health Center in Makassar City in the period January 2023-December 2023 with the National Guidelines for Medical Services (PNPK) regarding the Management of Chronic Suppurative Otitis Media (OMSK) in 2018.

Future researchers can examine the analysis of factors that influence the incidence of chronic suppurative otitis media (OMSK), as well as factors that can affect the suitability of providing

chronic suppurative otitis media (OMSK) treatment based on the National Guidelines for Medical Services (PNPK) Management of Chronic Suppurative Otitis Media (OMSK) in 2018.

In addition, an electronic medical record system can be carried out at the puskesmas to facilitate the administrative process, and can provide instruments to support diagnosis and provide medicines for patients with chronic suppurative otitis media (OMSK) in accordance with the reference to the National Guidelines for Medical Services (PNPK) Management of Chronic Suppurative Otitis Media (OMSK) 2018.

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