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Characteristics Of Chronic Suppurative Otitis Media (Omsk) Patients At St. Madyang City Palopo

Tenri Aurelia Farid Putri[1], Andi Tenri Sanna[2], Sidrah Darma[3], Ahmad Ardhani Pratama[4], Andi Alamanda Irwan[5],

[1] Program Studi Kedokteran, Fakultas Kedokteran, Universitas Muslim Indonesia, Makassar, Sulawesi Selatan, Indonesia[1], Jl. Urip Sumoharjo No.KM. 5, Panaikang, Kec. Panakkukang, Kota Makassar, Sulawesi Selatan 90231

[2] Bagian Telinga Hidung Tenggorokan, Fakultas Kedokteran, Universitas Muslim Indonesia, Makassar, Sulawesi Selatan, Indonesia, Jl. Urip Sumoharjo No.KM. 5, Panaikang, Kec. Panakkukang, Kota Makassar, Sulawesi Selatan 90231

[3] Bagian Ilmu Kesehatan Anak, Fakultas Kedokteran, Universitas Muslim Indonesia, Makassar, Sulawesi Selatan, Indonesia, Jl. Urip Sumoharjo No.KM. 5, Panaikang, Kec. Panakkukang, Kota Makassar, Sulawesi Selatan 90231

[4] Bagian Farmakologi, Fakultas Kedokteran, Universitas Muslim Indonesia, Makassar, Sulawesi Selatan, Indonesia, Jl. Urip Sumoharjo No.KM. 5, Panaikang, Kec. Panakkukang, Kota Makassar, Sulawesi Selatan 90231

[5] Rumah Sakit Ibnu Sina YW-UMI, Makassar, Sulawesi Selatan, Indonesia[5,] Urip Sumoharjo No.264, Karampuang, Kecamatan Panakkukang, Kota Makassar, Sulawesi Selatan 90231 aureliatenri@gmail.com, anditenrisanna.arifuddin@umi.ac.id, sidrah.darma@umi.ac.id , ahmadardhani.pratama@umi.ac.id, andialamanda.irwan@umi.ac.id

*Corresponding author : anditenrisanna.arifuddin@umi.ac.id

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ABSTRACT

Chronic Suppurative Otitis Media (CSOM) is a middle ear infection characterized by perforation of the tympanic membrane and persistent otorrhea lasting for more than two months. Local epidemiological data on CSOM in Kota Palopo, particularly from hospital-based settings, remain limited. Therefore, this study aims to describe the epidemiological and clinical characteristics of CSOM patients in a regional hospital setting where local data are still limited, focusing on factors such as gender, age, main complaints, CSOM type, and perforation location. A descriptive quantitative method with a cross-sectional design was used, collecting data from medical records of patients diagnosed with CSOM from January to June 2023 (n = 40). The results showed that the majority of patients were aged 19–60 years, with otorrhea as the most common complaint and benign CSOM type. Most patients had perforation at the pars tensa, while perforations at the pars flaccida and marginal locations were less common but posed a higher risk of severe complications. This study provides preliminary descriptive data on the characteristics of CSOM patients at RSU St. Madyang Kota Palopo. These findings may serve as a baseline for future research and local prevention efforts.

Introduction

Chronic suppurative otitis media (CSOM) is an infectious disease of the middle ear characterized by perforation of the tympanic membrane and pus discharge from the ear for more than two months (Afriana et

al., 2023). This disease can cause significant hearing loss and potentially lead to serious complications such as mastoiditis, facial nerve paralysis, as well as extracranial and intracranial complications, which can lead to death (Holmes et al., 2021; Kalyva et al., 2022).

Prevalence of 2–4% in some Indonesian populations, equating to roughly 6.6 million people based on previous population estimates. However, national validation is lacking, and the actual data year and geographic scope remain unclear from the citations provided (Indrayani et al., 2023; Muh.Taqdir et al., 2022). Factors such as upper respiratory tract infections, nutritional status, and access to health services play a major role in increasing the risk of CSOs (Hamed et al., 2023; Islam et al., 2020). Therefore, the handling of CSOM requires more attention to avoid complications that can affect the quality of life of the sufferer.

Research conducted at St. Madyang General Hospital in Palopo City regarding the characteristics of CSOM patients has become very relevant to understand the clinical and demographic picture of patients suffering from this disease in the region. Previously, research on the characteristics of CSOs in the region was not available, even though comprehensive data is essential to design more effective prevention and treatment strategies. Therefore, this study aims to describe the characteristics of CSOM patients at St. Madyang Hospital Palopo City in 2023, focusing on factors such as gender, age, main complaints, type of CSOM, and location of tympanic membrane perforation.

Several previous studies have provided an overview of the factors that affect CSOs. Previous research has found that bacteria such as *Pseudomonas aeruginosa* and *Staphylococcus aureus* are often found as the cause of infection in SCOs (Abed et al., 2020; Adnan Hadi et al., 2020). This study also shows that the improper use of antibiotics can worsen patients' conditions and cause antibiotic resistance (Akhtar et al., 2020; Bhutta et al., 2021). However, research focusing on microbiological patterns and antibiotic resistance in Palopo City is still limited. Therefore, this study is expected to fill the gap and provide more in-depth information about the microbiological factors involved in CSOs in the region.

The urgency of this research lies in the importance of accurate data for the management of CSOM in Palopo City. By understanding the characteristics of CSOM patients more deeply, hospitals and health institutions can formulate more appropriate policies in handling this disease. This research also has high relevance in designing more effective prevention programs and evidence-based interventions. The purpose of this study is to describe the characteristics of CSOM patients at St. Madyang Hospital Palopo City in 2023, and to find out factors such as gender, age, main complaints, type of CSOM, and the location of tympanic membrane perforation. It is hoped that the results of this research can not only contribute to the development of science in the medical field, but also be useful for more effective public health policies.

This research addresses four key gaps: (1) the absence of accessible CSO-related references for Indonesian educational institutions, (2) the underdeveloped local knowledge base on CSOs, (3) low public awareness of CSD symptoms, and (4) delayed treatment due to poor symptom recognition. Accordingly, the objectives of this study are to produce a usable reference for educational institutions, document knowledge on CSOs, and generate insights to increase public awareness and promote timely medical intervention for ear problems. In addition, this research is expected to increase public awareness about the symptoms and how to prevent CSDs, so that people can more quickly recognize ear problems and get timely medical treatment.

Method

This study uses a quantitative descriptive method with a *cross sectional research design* (Hardani et al., 2020; Sugiyono, 2022). to find out the characteristics of patients with Chronic Suppurative Otitis Media (CSOM) at St. Madyang Hospital, Palopo City. The research subjects used were all medical records of CSOM patients diagnosed in the period January 1 to June 30, 2023, which were selected using *a total sampling* technique, where the entire population that met the

inclusion criteria would be the study respondents (Agnesia et al., 2023; Liberty, 2024). The inclusion criteria include all patients diagnosed with CSOM based on medical records and have complete data according to the category studied.

The exclusion criteria include patients with incomplete medical records. Additionally, patients over 60 years of age were excluded because this group has a higher burden of age-related comorbidities (e.g., diabetes, hypertension, immunodeficiency) that may independently influence CSOM progression and treatment outcomes. Excluding this population minimizes potential confounding, allowing the study to focus on CSOM characteristics in younger and middle-aged adults. The categories studied included gender, age, major complaints, type of CSOM, and location c

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records and analyzed descriptively using Microsoft Excel. For categorical variables, frequency counts and percentages were calculated. For continuous variables (e.g., age), mean and standard deviation (or median and range) were used. The results will be presented in the form of distribution tables, diagrams, and graphs supplemented by explanatory narratives.

The definitions of the categories include; gender, type of CSOM, and perforation site, as well as ordinal categories for age, grouped into several age categories (infants and toddlers, children, adolescents, adults). CSOM symptoms were also analyzed based on major complaints that included otorea, hearing loss, fullness in the ears, as well as more serious complications. This research has received approval from the Research Ethics Committee of the Muslim University of Indonesia with Number 043/A.1/KEP-UMI/I/2025 on January 21, 2025.

Result and Discussion

Distribution of Chronic Suppurative Otitis Media Patients by Age

Table 1. Results of Distribution of Proportion of Chronic Suppurative Otitis Media Patients by Age

Age (Years)	Frequency (n)	Percentage (%)
0 - 5	6	15,0
6 - 9	1	2,5
10 - 18	1	2,5
19 - 60	32	80,0
TOTAL	40	100

Table 1 shows the distribution of the proportion of patients with Chronic Suppurative Otitis Media (CSOM) by age group. From the available data, the majority of patients are in the age group of 19-60 years, with a total of 32 patients or 80%. This age group shows a high prevalence of CSOM in adults. Meanwhile, the age group of 0-5 years was recorded as many as 6 patients (15%), which indicates that CSOM can also affect infants and toddlers. The age group of 6-9 years and 10-18 years each recorded only 1 patient (2.5%), indicating that CSOM was less common in children and adolescents in this study.

The results of the study on the characteristics of Chronic Suppurative Otitis Media (CSOM) patients at St. Madyang Hospital in Palopo City showed that the majority of patients were in the age range of 19-60 years, which accounted for 80% of the total patients, while the age group of 0-5 years was recorded as much as 15%, which suggests that CSOM can also affect infants and toddlers. The 6-9 year old and 10-18 years age groups recorded only 2.5%, respectively, which suggests that CSOM is more commonly found in adults. Previous research has shown that most patients with chronic suppurative otitis media (CSOM) are between 11 and 30 years old, which supports that CSOM is more common in young adulthood (Islam et al., 2020). In addition, previous research has also made it clear that CSOs are often a global health concern, especially among children in sub-

Saharan Africa, although their prevalence is higher among adults than children (Pedersen et al., 2020). Other studies have shown that environmental and biological factors play a role in the development of CSOM, especially in children and adolescents who are at higher risk of complications if exposed to recurrent infections (Jamal et al., 2022). Previous research also explains that targeted counseling and prevention can reduce the incidence of CSOs, which shows the importance of health education so that people better understand the symptoms and risks related to this disease (Al-Ani, 2020).

Regarding gender factors, previous research has shed light on significant differences in the prevalence of CSOs, with men more often affected by the disease than women. Data from St. Madyang Hospital also opens up opportunities for further research on the factors that affect the prevalence of CSOM in different age groups. Previous research has shed light on the importance of comprehensive epidemiological data for more effective health care policy and planning (Sasmita et al., 2020). Therefore, a data-driven approach in the management of CSOs can improve the ability of health interventions in the community. In addition, the management of antibiotics in accordance with the pattern of bacterial resistance in the community is also very important to ensure maximum treatment results (Suryani et al., 2022). Effective management of CSOs must involve a multidisciplinary approach, including collaboration between medical personnel, health policy, and education to the community to improve prevention and early treatment (Suryani et al., 2022).

Distribution of Chronic Suppurative Otitis Media Patients by Sex

Table 2. Results of Distribution of Proportion of Chronic Supurative Otitis Media Patients by Gender

Gender	Frequency (n)	Percentage (%)
Male	21	52,5
Female	19	47,5
TOTAL	40	100

Table 2 illustrates the distribution of CSOM patients by sex, which shows that there is little difference between the number of male and female patients. Male patients were recorded as many as 21 people (52.5%), while female patients were 19 people (47.5%). Although the difference between these two sexes is not very significant, these results suggest that CSOM can affect both men and women almost equally, without dominance in either sex.

Research on the distribution of Chronic Suppurative Otitis Media (CSOM) patients at St. Madyang Hospital in Palopo City showed a slight difference between the number of male and female patients, with 21 male patients (52.5%) and 19 female patients (47.5%) out of a total of 40 patients. Although more men are diagnosed with OCD, this difference is not very significant, suggesting that OCDs can affect both men and women almost equally. Previous research explained that at the ENT-KL Polyclinic of Sanglah Denpasar Hospital, although it was found that there was a dominance of women in the characteristics of CSOM patients, the main symptom that was most commonly reported was still otorrhea, and the most age group was 21-30 years old (Wijaya et al., 2022). Differences in gender distribution between the studies in Denpasar and Palopo City may be influenced by differences in demographic and environmental characteristics, suggesting that the prevalence of CSOs may vary according to the local context. In addition, previous research also explained that among patients who underwent surgery due to CSOs, the prevalence of men was higher, with 56.1% of patients who underwent surgery being male (Suharni et al., 2023).

The causative characteristics of infection in CSOM also suggest that the causative bacteria may play a role in gender inequality in patients. Previous research has shown that *Staphylococcus sp.* are the main causative bacteria of CSOM, with varying sensitivities to various antibiotics (Sasmita et al., 2020).

Distribution of Chronic Suppurative Otitis Media Patients by Major Complaints

Table 3. Results of Distribution of Proportion of Chronic Suppurative Otitis Media Patients Based on Main Complaints

Complaints	Frequency (n)	Percentage (%)
Otorrhea	23	57,5
Otalgia	5	12,5
Full Feeling in the Ears	4	10,0
Tinnitus	2	5,0
Hearing Loss	6	15,0
TOTAL	40	100

Table 3 presents the distribution of the main complaints reported by CSOM patients. Complaints of otorrhea (secretions that come out of the ear) are the most common complaints, with a total of 23 patients (57.5%), indicating that this problem is the most common and prominent symptom in people with OCSK. Followed by complaints of hearing loss in 6 patients (15%), otalgia (pain in the ears) in 5 patients (12.5%), fullness in the ears in 4 patients (10%), and tinnitus (ringing in the ears) in 2 patients (5%). This suggests that otorrhea is the most directly related complaint to the diagnosis of CSOM.

The results of the study on the characteristics of patients with Chronic Suppurative Otitis Media (CSOM) at St. Madyang Hospital in Palopo City showed that the main complaint that was most often reported was otorrhea, or discharge from the ear, with a proportion of 57.5% of the total patients. This ratio indicates that otorrhea is the dominant symptom often associated with the diagnosis of CSOM, indicating the importance of monitoring and handling these symptoms in patient management. Previous research explained that at the ENT-KL Polyclinic of Sanglah Hospital, otorrhea complaints also dominated CSOM cases, which showed a consistent pattern in various research sites (Wijaya et al., 2022). In addition, after complaints of otorrhea, complaints of hearing loss of 15% are another significant symptom that is often experienced by CSOM patients. Hearing loss in CSOM patients is usually caused by exudate in the middle ear and mechanical abnormalities in the Eustachian tube, which connects the middle ear and nasopharynx. This creates difficulties in recognizing and dealing with audio complaints, which are also found in other otitis media. Previous research has made it clear that poorly treated otitis media can be at risk of leading serious complications, such as further ear infections or even brain abscesses (Kang et al., 2023).

In addition to otorrhea and hearing loss, complaints of otalgia, i.e. pain in the ears, are experienced by 12.5% of patients, which is usually associated with ongoing inflammation and infection in the acute or chronic stages of otitis media. Some patients also reported a fullness in the ear (10%) and tinnitus (5%), highlighting that complaints in CSOM are not limited to a single symptom, but rather a complex picture of the various impacts the patient experiences. Previous research has made it clear that otitis media can contribute to the further development of neurological syndromes if not treated appropriately (Shahid Bokhari & Asif Qureshi, 2021). Although complaints of otorrhea and hearing loss are quite dominant, the prevalence of other symptoms, such as the ears feeling full or tinnitus, is also worth considering. Previous research has shown that some types of otitis media, such as tuberculous otitis media, can exhibit similar symptoms, including discharge from the ear, which emphasizes the importance of proper diagnosis to distinguish the various causes of ear infections (Nguyen et al., 2025). The implication of these findings is the need for a multifaceted approach in the management of FMD, which involves a detailed clinical history, a thorough physical examination, as well as the use of additional investigations such as microbial culture or imaging if required. Previous research has shown that resistance to bacteria such as *Pseudomonas aeruginosa* and *Staphylococcus aureus* that are resistant to methylacillin is a major concern in the management of CSOM, and updating knowledge of antimicrobial

resistance trends is crucial in patient management (Kang et al., 2023).

Distribution of Chronic Suppurative Otitis Media Patients by CSOM Type

Table 4. Results of Distribution of Proportion of Chronic Suppurative Otitis Media Patients by Type of CSOM

CSOM Type	Frequency (n)	Percentage (%)
Benigna	27	67,5
Malignant	13	32,5
TOTAL	40	100

Table 4 illustrates the types of CSOM found in patients, with the majority of patients (27 people or 67.5%) developing benign CSOM, which is usually milder and does not cause serious complications. The remaining 13 patients (32.5%) developed malignant CSOM, which is often associated with more severe complications such as bone damage and cholesterolatoma. These data suggest that although benign type OCDs are more common, malignant types persist and require special attention regarding their potential for more serious complications.

In a study on the characteristics of Chronic Suppurative Otitis Media (CSOM) patients at St. Madyang Hospital, Palopo City, the results showed that the majority of patients, namely 67.5%, experienced benign type CSOM, while the other 32.5% experienced malignant type OSM. The benign type is generally milder and does not often cause serious complications, while the malignant type has the potential to cause more complex problems, such as bone damage and cholesteatoma. Previous research has shown that the prevalence *of Chronic Suppurative Otitis Media* (CSOM), which includes both benign and malignant types, is strongly related to sociodemographic factors and environmental conditions. For example, in Bangladesh, the majority of CSOM patients are in young adulthood, especially in the second and third decades of life (Islam et al., 2020). Determining the prevalence of CSOM types can contribute to the development of more effective prevention and treatment strategies. Although the benign type is more common, this does not mean that it can be ignored, because although it is milder, it can still cause significant hearing loss and affect the patient's quality of life. On the other hand, malignant type CSOM requires more intensive medical attention because it risks leading to more serious complications, such as deeper infections or even sepsis. Previous research has explained that ongoing infections in the form of CSOM can cause severe complications in patients, including structural damage to the middle and mastoid ears (Adnan Hadi et al., 2020).

It is important to consider the sensitivity of microbes to antibiotics used in the treatment of CSOM, especially in malignant types. Previous research has shown that CSOM infection exhibits a pattern of varying sensitivity to antibiotics, such as ciprofloxacin and amoxicillin, which can affect the choice of therapy used for each patient (Suryani et al., 2022). This emphasizes the importance of regular monitoring of infection as well as bacteriological evaluation of ear exudate to minimize the risk of further complications, especially in patients with malignant types. In addition, serious complications arising from CSOM, such as bone damage and cholesteatoma, require deeper medical attention. Previous research provides additional perspective by explaining that the prevalence of otitis media, despite being a global problem, varies greatly depending on local location and epidemiological conditions (Pedersen et al., 2020). In the management of more complex cases, such as *mastoidectomy* and *tympanoplasty*, previous research describes the application of *Enhanced Recovery After Surgery* (ERAS) protocols that can help reduce postoperative complications in patients with middle and mastoid ear problems (Tan et al., 2021).

Distribution of Chronic Suppurative Otitis Media Patients by Perforation Site

Table 5. Results of Distribution of Proportion of Chronic Supurative Otitis Media Patients by Perforation Location

Perforation Location	Frequency (n)	Percentage (%)
Sentral (*Pars Tensa*)	27	67,5%
Marginal	4	10,0%
Atik (*Pars Flaksida*)	9	22,5%
TOTAL	40	100

Table 5 shows the location of tympanic membrane perforation in CSOM patients. Most patients had perforations at the central location (pars tensa), with a total of 27 patients (67.5%), suggesting that perforations in this part were more common in CSOM cases. Meanwhile, 9 patients (22.5%) had perforations at the site of the atic (pars flaxside), which is usually at greater risk associated with more severe complications. 4 patients (10%) experienced perforations at marginal locations, which could be related to cholesteatoma and other structural damage.

Chronic Suppurative Otitis Media (CSOM) is a condition characterized by recurrent infections of the middle ear and otorrhea through perforation of the tympanic membrane. Table 5 in this study shows that the majority of patients, approximately 67.5%, had perforations at the central location (*pars tensa*), which is the most common location for perforation in the case of CSOM. Previous research has shown that perforations in pars tensa are more common and are associated with bacterial infections, such as *Staphylococcus aureus* and *Pseudomonas aeruginosa*, which are the main causes of CSOM (Parhusip et al., 2021). Meanwhile, 22.5% of patients experienced perforations of the pars of flakcide, which is usually more prone to serious complications. Previous research has shown that bacteria such as *Staphylococcus sp.* It is often found in ear swab specimens, and infections at these locations tend to be more resistant to common antibiotics, such as amoxicillin and erythromycin (Sasmita et al., 2020). This suggests that perforations in pars flakcide can lead to infections that are more difficult to treat and more at risk of developing long-term complications.

In addition, 10% of patients experience perforations at marginal locations, which could potentially be associated with cholesteatoma and other structural damage. Previous research has explained that patients with perforations at this location often face higher rates of complications, requiring further surgical interventions, such as tympanoplasty (Suharni et al., 2023). Other studies have also highlighted that hearing complications are more common in patients with larger perforations, suggesting a direct relationship between the location of the perforation and its impact on patients' quality of life (Amany et al., 2023). Perforations at the central location are usually more responsive to topical antibiotic treatment, although resistance to bacteria can complicate therapy (Oktavianita et al., 2021).

Research Implications

This study provides a deeper understanding of the characteristics of patients with Chronic Suppurative Otitis Media (CSOM) at St. Madyang Hospital Palopo City, by identifying risk factors, gender, age, main complaints, type of CSOM, and location of tympanic membrane perforation that are very important in designing more appropriate management and interventions. These findings can be used to improve clinical understanding and assist hospitals and local health institutions in formulating policies for the treatment and prevention of CSDs. In addition, information related to the microbiological patterns and antibiotic sensitivity in the region will provide insights for more effective antibiotic management, which in turn can reduce the incidence of complications, such as cholesteatoma and mastoiditis, and improve patients' quality of life.

Research Limitations

A major limitation in this study is the use of secondary data obtained from medical records, which may have limitations in the

accuracy or completeness of information, such as data regarding previous infection history or microbiological examinations that are not available to all patients. In addition, the study was descriptive and cross-sectional, meaning it could not determine cause-and-effect relationships or monitor patients' clinical changes in the long term. External factors, such as diet, nutritional status, and environmental conditions that may play a role in the occurrence of CSOM, were not analyzed in depth. Therefore, to obtain more comprehensive results, longitudinal or experimental research is needed that can delve deeper into the risk factors and effectiveness of treatment.

Conclusion

The conclusions of this study show that the majority of CSOM patients at St. Madyang Hospital in Palopo City are adults aged 19-60 years, with the main complaints of otorrhea and the dominance of benign CSOM types. However, malignant types are also found and require more attention due to the risk of more severe complications. The perforation site in the tensa pars is more common, but perforations in the pars of the flakcide and marginal locations are at risk of causing serious complications. Based on these findings, it is recommended that medical personnel improve monitoring of CSOM patients, with evidence-based approaches and antibiotic therapies tailored to local microbial resistance patterns. In addition, further research involving risk factor analysis, microbiology, and long-term management of CSOM is expected to enrich the clinical management of this disease and improve the quality of health care in Palopo City.

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