



Characteristics of Chronic Suppurative Otitis Media Sufferers at ENT Polyclinic of Patuh Patuh Patju Hospital in the Period of July- December 2022

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<p>KEYWORDS</p> <p>COMS, otorrhea, sex, age, tympanic membrane perforation</p>	<p>ABSTRACT:</p> <p>Background : CSOM is chronic inflammation of the middle ear and mastoid which is characterized by the presence of fluid from the tympanic membrane perforation repeatedly. The incidence of CSOM is found more in developing countries.</p> <p>Research Methods : This research was a retrospective descriptive study where the data was primary data with simple random sampling method. The data obtained was processed univariately and the results was displayed in the frequency distribution table.</p> <p>Results : This study involved 85 patients. It was found that there were more female CSOM patients (52.95%) than men (47.05%). CSOM was most commonly found in the adult age group (35.3%) and the least in the 6-11 age years group (4.7%). Most of the patients came with complaints of discharge from the ear (60 %) and most complained of discharge from the right ear (47.1%). All patients (100%) in this study found a perforation in the central part of the tympanic membrane, and were diagnosed with the benign type of CSOM (96.7%).</p> <p>Conclusion : CSOM is one of the most common ear diseases in developing countries, one of which is Indonesia. The proportion of CSOM patients in the ENT polyclinic in July-December 2022 involved 85 patients. It was found that there were more female than men. the highest distribution of CSOM was in the age range of 26-46 years. CSOM is chronic inflammation of the middle ear and mastoid and tympanic membrane perforation and found secretions (otorrhea), intermittent or persists for 2 months or more.</p>
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INTRODUCTION

WHO defines Chronic Suppurative Otitis Media (CSOM) as chronic inflammation of the middle ear and mastoid caused by aerobic and non-aerobic gram negative and positive bacterial infections, characterized by recurring ear fluid (otorrhea) through tympanic membrane perforation for more than two months, either continuously or intermittently.^{1,2} According to WHO, the prevalence of CSOM in the world is 65–330 million people, with 60% of whom experiencing hearing loss. Meanwhile, the incidence rate is 9 cases out of 100,000 population.¹ The incidence of CSOM is estimated at more than 20 million people worldwide. Research

conducted in industrialized nations reveals that roughly 80% of preschoolers might have gone through at least a single before they turn three, and nearly 40%.

CSOM begins with otitis media, both acute otitis media (AOM) and otitis media effusion (OME), so risk factors that cause otitis media are also associated with CSOM such as viral or bacterial infections, eustachian tube dysfunction, young age and immature and compromised immune status, upper respiratory tract allergies, family predisposition, presence of older siblings, sex, bottle feeding, congenital anomalies, daycare, and smoking both active and passive.^{1,2}

CSOM is a frequent health issue in developing countries,



including Indonesia.^{1,2} According to a survey conducted in seven provinces in Indonesia in 1996, the incidence rate of Chronic Suppurative Otitis Media was 3% of the Indonesian population, and it grew to 5.4% in 2007. The number of CSOMs reaches 65–330 million people with otorrhea and 60% of them have hearing loss. In contrast, in wealthy countries such as the United Kingdom, the incidence rate is just about 0.9% of the population. The prevalence varies by country and can be impacted by a variety of factors such as socioeconomic status, ethnicity, crowded housing, hygiene, and poor nutrition.^{3,4}

Otitis media primarily affects toddlers and can even result in death; children and young people have the highest incidence of OMA, which has an impact on CSOM.⁵ Sex also has a role in the prevalence of CSOM in males versus women. The reason is men were more likely to suffer from CSOM due to their tendency to suffer upper respiratory infection from the working environment. Therefore, they are easily exposed to risk factors.⁵

Tympanic membrane perforation in CSOM might be found in the central, marginal, or attic areas, according to otoscopic ENT evaluation. The perforation is in pars tensa in central perforation, yet there is still tympanic membrane at all edges of the perforation. Some of the perforation edges in marginal perforations are directly related to the annulus or tympanic sulcus. Attic perforation is a type of perforation seen in the pars flaccida.⁶

Meanwhile, based on its type, CSOM is divided into 2 types; Benign type (mucosa type = benign) and Malignant type (bone type = malignant type). In benign type CSOM, inflammation is limited to the mucosa only and usually does not affect the bone so that the perforation is located centrally, generally in benign type CSOM rarely causes dangerous complications. Malignant type CSOM or bone type CSOM is CSOM accompanied by cholesteatoma so that the perforation in this type is located at the margins or attic, most of the dangerous complications in CSOM are caused by unbenign type CSOM.⁶

The principle of CSOM therapy is differentiated based on its type; for benign type CSOM, the therapy is conservative or with medication in the form of ear toilet, ear drops containing antibiotics and corticosteroids, and

oral antibiotics; if there is no improvement after 2 months more of supervision, surgery in the form of myringoplasty or tympanoplasty can be performed. The only therapeutic option for the serious variety of CSOM is surgery, specifically mastoidectomy with or without tympanoplasty.⁶ The objective of this study was to identify the features of Chronic Suppurative Otitis Media patients receiving therapy at the ENT Polyclinic of Patuh Patuh Patju Hospital.

METHOD

The objective of this retrospective descriptive study was to identify the features of CSOM patients receiving therapy at the ENT Polyclinic of Patuh Patuh Patju Hospital. From July to December 2022, researchers applied a simple random sample strategy to collect data from anamnesis and physical examination findings at the ENT Polyclinic of Patuh Patuh Patju Hospital. The collected data were recorded on the data collection sheet, and data analysis was performed. All patients who attended to the ENT polyclinic of Patuh Patuh Patju Hospital and were diagnosed with chronic suppurative otitis media (CSOM) on the first visit to meet the researchers were included in this study. Exclusion criteria in this study were patients with complaints of ear disorders who were not diagnosed with CSOM. The analysis in this study was univariate analysis which aims to describe the characteristics of subjects and other variables. Univariate analysis is displayed in the form of a frequency distribution table.

RESULTS

Sampling was conducted based on the number of patient visits diagnosed with CSOM at the ENT polyclinic of Patuh Patuh Patju Hospital for the period of July–December 2022. During this period, 85 patients were diagnosed with Chronic Suppurative Otitis Media (CSOM). Table 1 description of CSOM sufferers based on sex found that the incidence rate in men was 40 patients and the incidence rate in women was 45 patients. Table 2 shows that the age group 26–45 years has the most CSOM patients 30 patients (35.3%), followed by the age group 12–25 years with 20 patients (23.5%), the age group 46–65 years with 20 patients (23.5%), the age group 6–11 years with 4 patients (4.7%), the age group 0–6 years with 6 people (7.1%), and the age group > 65 years with 5 person (5.9%). In this investigation, the youngest patient was 7 months old and the oldest was 66 years old. Table 3 shows that the distribution of complaints of CSOM patients is mostly discharge from



the ear as many as 51 patients (60%), followed by complaints of discharge from the ear accompanied by ear pain as many as 10 patients (11.8%), then complaints of discharge accompanied by ringing in the ear as many as 8 patient (9.4%), complaints of ear pain 5 patient (5.9%), complaints of ringing in the ear are 5 patient (5.9%), and complaints of decreased hearing as many as 3 patient (3.5%). Table 4 shows that the right ear was complained

about the most by 40 patients (47.1%), followed by patient who complained about both left and right ears by 30 patients (35.3%), and the least complained about the left ear by 15 patients (17.6%). Table 5 shows that 83 patients (97.6%) in this study were diagnosed with benign type CSOM and 2 patients (2.4%) were diagnosed with malignant the perforation type is central type (100%).

Table 1. Frequency Distribution of CSOM patients based on Sex

Sex	Total	Percentage (%)
Female	45	52.95 %
Male	40	47.05 %
Total	85	100 %

Table 2. Frequency Distribution of CSOM patients based on Age

Age	Total	Percentage (%)
Toddler (0-5 years old)	6	7.1 %
Children (6-11 years old)	4	4.7 %
Teenagers (12-25 yearsold)	20	23.5 %
Adults (26-45 years old)	30	35.3 %
Elderly (46-65 years old)	20	23.5 %
Senior >65 years old	5	5.9 %
Total	85	100 %

Table 3. Frequency Distribution of Main Complaints of CSOM Patients

Complaints	Total	Percentage (%)
Ear discharge	51	60 %
Ringing in the ear	5	5.9 %
Ear pain	5	5.9 %
Hearing loss	3	3.5 %



Discharge accompanied by ear pain	10	11.8 %
Discharge accompanied by ringing in the ears	8	9.4 %
Discharge accompanied by ear pain and ringing in the ear	3	3.5 %
Total	85	100 %

Table 4. Frequency Distribution of Ears

Ears	Total	Percentage (%)
Left	15	17.6 %
Right	40	47.1 %
Left and Right	30	35.3%
Total	85	100 %

Table 5. Frequency Distribution and Perforation Type of CSOM Patients

Types of CSOM	Total	Percentage (%)
Benign	83	97.6 %
Malignant	2	2.4 %
Total	85	100 %
Central type	85	100 %
Others	0	0
Total	85	100 %

DISCUSSION

CSOM is a chronic inflammation of the middle ear and mastoid with a tympanic membrane that is perforated and found secretions (otoreas), purulent that disappear arising, said to be chronic if the disease disappears arising or persists for 2 months or more. This is a retrospective descriptive study that was undertaken at the ENT Polyclinic of Patuh Patuh Hospital from

July to December 2022. The total sample size for this study was 85 patients, with the majority of patients complaining of ear discharge from either the left or right ear or both, as shown in tables 3 and 4.

Table 1 shows that female patients had CSOM at a higher rate than male patients. This is in a line with research by Yoke *et al* in 2020, which found that



women (54%) had a higher prevalence of CSOM than males (46%). Yasan, H found the same result in a study in 2020, where the prevalence of CSOM patients was shown to be higher in women (55.8%) than in men (44.2%).⁸ According to another source, there is no gender difference; both men and women have the same likelihood of developing CSOM.⁷ Study by Shresta in Nepal found that CSOM patients were more likely to be women (55.2%) than men (44.8%). In general, there is no significant difference in the incidence of CSOM in both men and women, some studies found more men than women and some other studies found more women than men because men were more likely to suffer from CSOM due to their tendency to suffer upper respiratory infection from the working environment. Therefore, they are easily exposed to risk factors. However, no research has shown the relationship between CSOM and gender.^{5,6,7}

All age groups have the potential to experience CSOM.^{8,9} The age categorization in table 2 is based on the age classification issued by the Indonesian Ministry of Health in 2009, namely the presence of secret from 0 to 5 years, childhood from 5 to 11 years, adolescent from 12 to 25 years, adulthood from 26 to 45 years, elderly from 46 to 65 years, and seniors >65 years. According to Table 2, the incidence of CSOM is highest in the adult age group (26-45 years) and lowest in the age group 6-11 years. This is in a line with a study conducted in Makassar, South Sulawesi, in 2017 that identified the highest incidence of CSOM in the adult age range (25-44 years), namely 40 participants (37.4%).⁵ Similar findings were obtained from a study by Gina *et al* in 2018 at Al-Ihsan Hospital, which included 771 patients. It was found that the most CSOM cases were found in the adult age group (26-45 years), namely 244 patients (31.64%), and the least in the age group > 65 years, namely 33 people (4.28%).⁵ According to one of the studies conducted by Loy in Singapore, the most common age group that experienced CSOM as adult age (31-40 years) with an incidence of 23.3%. One of the influencing factors mentioned in the study was low economic status and a history of recurrent infections that were not adequately handled.⁹

The frequency distribution of complaints observed by CSOM patients in the RSUD Patut Patuh Patju ENT Polyclinic is shown in Table 3. From 85 patients, 51 (60

%) complained of ear discharge, with some also complaining of ear pain, ringing in the ears, or reduced hearing. Similar findings were obtained in a 2013 study at Sanglah General Hospital, where 91.5% of 117 CSOM patients complained of ear discharge.⁸ In a 2019 study at RSUD dr. H Chasan done by Nabila *et al*, 20 patients (60.6%) complained of ear discharge, 8 people (24.2%) complained of hearing loss, and 5 people (15.2%) complained of ear pain. Similar findings were found in a 2017 study conducted by Nurul at Dr Wahidin Sudirohusodo Hospital Makassar, where 54.2% of CSOM patients complained of ear discharge.¹⁰ Otorrhoea is a complaint that frequently occurs in CSOM patients when they see their doctor for the first time. This is in a line with the theory that CSOM is a chronic middle ear infection accompanied by perforation of the tympanic membrane and the presence of secretions coming out of the middle ear continuously or intermittently.^{9,10}

Table 4 shows the CSOM distribution depending on the most usually infected ear, which is the right ear, which has 40 patients (47.1%), the left ear, which has 15 patients (17.6%), and the left-right ear, which has 30 patients (35.3%). Similar findings were found in a study conducted by Putri *et al* at Sanglah Hospital in 2011-2012, where 21 patients (55.3%) had CSOM infection in the right ear. The same thing was found in a study conducted by Shresta in Nepal, where 114 of 230 patients had CSOM infection in the right ear. Previous research did not find the cause of the higher incidence of CSOM in the right ear.¹⁰

All patients in this study (100%) had perforations in the central region of the tympanic membrane. According to a study conducted at Wahidin Sudirohusodo Hospital, the most common type of perforation was central perforation, which accounted for 86.4% of cases, while the least common was marginal perforation, which accounted for 2.7% of instances.¹¹

According to Table 5, the patients in this study had benign type CSOM was 83 patients (97.6%) and 2 patients malignant type CSOM. These findings are in a line with study conducted at RSCM, where the number of benign type CSOM is more than the number of Malignant type, which is 57.9%.¹⁰ Another study conducted by Musthaque in Pakistan found the same thing, namely that tympanic tube type CSOM (clearna) was the most prevalent CSOM, with 345 individuals



(88.5%) identified with benign type CSOM out of a total of 390 CSOM cases.^{11,12}

CONCLUSION

A study was conducted at the ENT Polyclinic of Patuh Patuh Patju Hospital, West Lombok from July to December 2022 with a total of 85 CSOM patients. CSOM was shown to affect more female patients than males among the 85 cases studied. In this study, the incidence of CSOM was highest in the adult age group and lowest in the 6-11 age group. The most prevalent symptom of patients in this study was ear discharge, with the majority of complaints coming from the right ear. All of the patients in this study had central perforation and were diagnosed with benign type CSOM. It is intended that it can be used for further studies. Further research is expected to be conducted over a longer period of time in order to increase the number and diversity of patients, and it is expected that in the future, more exploration can be done regarding risk factors and things that can affect recovery and the incidence of recurrent infections in CSOM patients.

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REFERENCES

- World Health Organization. Chronic Suppurative Otitis Media Burden of Illness and Management Options. Child and Adolescent Health and Development Prevention of Blindness and Deafness; 2004. Available at: <https://apps.who.int/iris/handle/10665/42941>
- Khairkar M, Deshmukh P, Maity H, Deotale V. Chronic Suppurative Otitis Media: A Comprehensive Review of Epidemiology, Pathogenesis, Microbiology, and Complications. *Cureus*. 2023 Aug 18;15(8):e43729. doi: 10.7759/cureus.43729. PMID: 37727177; PMCID: PMC10505739.
- Mahdiani S, Lasminingrum L, Anugrah D. Management evaluation of patients with chronic suppurative otitis media: A retrospective study. *Ann Med Surg (Lond)*. 2021 Jun 11;67:102492. Doi: 10.1016/j.amsu.2021.102492. PMID: 34188909; PMCID: PMC8219642.
- Shaeen Md.M, Ahmad, S.M. Prevalence and associated socio-demographic factors of chronic suppurative otitis media among rural primary school children of Bangladesh. *International Journal of Pediatric Otorhinolaryngology*, vol 76, issue 8, August 2012 Pages 1201-1204
- Gina N, Endang S, Buti A. Hubungan Usiadan Jenis Kelamin dengan Prevalensi Otitis Media Supuratif Kronik di Rumah Sakit Umum Daerah Al Ihsan Tahun 2018. *Prodi Pendidikan Kedokteran Fakultas Kedokteran Universitas Islam Bandung*. ISSN: 2460-657x; 2018. Available at : <https://karyailmiah.unisba.ac.id/index.php/dokter/article/view/20984>
- Bagus R, Komang A. Karakteristik Pasien Otitis Media Supuratif Kronis di Poliklinik THT Rumah Sakit Umum Sanglah Periode Januari-Juni 2013. *E Jurnal Medika*, Vol. % No. 12. ISSN: 2302-1935; 2016. Available at <https://ojs.unud.ac.id/index.php/eum/article/view/26635>
- Harry A, Debi R, Askaroellah A. Profil Penderita Otitis Media Supuratif Kronis Asroel dkk Profil Penderita Otitis Media Supuratif Kronis. *Jurnal Kesehatan Masyarakat Nasional*. Vol. & No. 12; 2013. Available at: <https://media.neliti.com/media/publications/39602-ID-profil-penderita-otitis-media-supuratif-kronis.pdf>
- Efiaty A, Nurbaiti I, Jenny B, Ratna D. *Buku Ajar Ilmu Kesehatan Telinga Hidung Tenggorok Kepala dan Leher*. Jakarta: Universitas Indonesia Publishing; 2012.
- Yoke K, Pujo W, Zulfikar N, Willy Y. Faktor Risiko Air Bone Gap Pada Otitis Media Supuratif Kronik. *Medical Hospitalia; Journal of Clinical Medicine*; Vol. 7 (1) : 17- 22; 2020. Available at : <https://media.neliti.com/media/publications/353079-faktor-risiko-air-bone-gap-pada-otitis-m3aece5a6.pdf#:~:text=Latar%20belakang%20%3AKehilangan%20pendengaran%20merupakan%20komplikasi%20otitis%20media,hubungan%20faktor%20risiko%20dengan%20ABG%20pada%20penderita%20CSOM>.
- Putri C, Sari W, Wayan S. Karakteristik Penderita Otitis Media Supuratif Kronik di RSUP Sanglah Denpasar Periode 2011- 2012. *Bagian Ilmu Kesehatan Telinga Hidung dan Tenggorokan Fakultas Kedokteran Universitas Udayana*.



Available at:

<https://sinta.unud.ac.id/uploads/wisuda/1002006064-3JURNAL%20CSOM%20putri%20citra%20laksmi%20d.pdf#:~:text=Otitis%20Media%20Supuratif%20Kronik%20%28CSOM%29%20merupakan%20peradangan%20atau,yaitu%20CSOM%20tipe%20benigna%20sebanyak%2023%20orang%20%2860%2C5%25%29.>

11. Nabila S, Isa P, Soesanty. Karakteristik PsienOtitis Media Supuratif Kronik di Poliklinik Telinga Hidung Tenggorok Rumah SakitUmum Daerah Dr. H. Chasan Boesoirie Periode Januari-Juli 2019. Kieraha MedicalJournal; Volume 1. No 1, e-

ISSN: 2686- 5912; 2019.

Availableat:<https://www.semanticscholar.org/paper/KA-RAKTERISTIK-PASIE-OTITIS-MEDIA-SUPURATIF-KRONIK-UmaPary/c7f094afae1fac3db86779ede664de2ee2c657cf>

12. Gede E, Komang A. Karakteristik PenderitaOtitis Media Supuratif Kronis (CSOM0 yang Menjalani Operasi di RSUP Sanglah. Medicina, Volume 51, No. 1:46-49; 2020. Available at: https://www.researchgate.net/publication/352167575_Karakteristik_penderita_otitis_media_supuratif_kronis_CSOM_yang_menjalani_operasi_di_RSUP_Sanglah