



CHARACTERISTICS OF MICROTIA PATIENTS AT Dr. HASAN SADIKIN BANDUNG GENERAL HOSPITAL PERIOD 2017 – 2022

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Abstract

Background. Microtia is a congenital disorder in which the ears are smaller than normal. The incidence of microtia varies from every 1200 births, up to 5000-7000 births, unfortunately the number in Indonesia is not known because there is no collection of data specifically on microtia. Purpose. Determine the prevalence of microtia case in Dr. Hasan Sadikin general hospital, Bandung in from 2017 to 2022. Methods. This is a descriptive study with a retrospective method to understood at the characteristics of microtia patients at Dr. Hasan Sadikin General Hospital Bandung from 2017 to 2022. Results. There were 71 cases treated at Dr. Hasan Sadikin General Hospital for the January 2017-April 2022 period with a percentage of 45 male patients (64.29%) and 25 female patients (35.71%). Most types of microtia in this study occurred unilaterally are 61 people (87.14%). The most common degree of microtia is grade III in 54 patients (77.14%). Craniofacial microsomia is a comorbid congenital abnormality that often occurs in microtia patients in 8 patients (11.42%). The degree of hearing loss in microtia patients is the majority experiencing severe hearing loss in 35 patients (50%) and the type of hearing loss that occurs in the majority is conductive type in 47 patients (67,14%). Conclusion. Patients were dominated by men with the most age group when treated being 5-18 years. Most types of microtia in this study occurred unilaterally. Microtia is often accompanied by hearing loss, the type of hearing loss that often occurs is the conductive type and often occurs in a severe degree

Keyword : microtia, conductive hearing loss, craniofacial microsomia

INTRODUCTION

Congenital abnormalities in newborns have become a very serious problem in recent decades. Apart from being one of the main causes of newborn death, congenital abnormalities also cause disability and decrease the quality of life of a child. According to WHO, more than 8 million babies are born with congenital abnormalities worldwide each year.¹

One of the congenital abnormalities that cause disability and decreased quality of life for a child is microtia. Microtia is a congenital disorder in which the ears are smaller than normal. Microtia not only causes deformities in the shape of the outer ear, middle ear and does not involve the inner ear but can also interfere with hearing function, where if hearing loss in children is allowed to continue, it can cause speech disorders and decreased cognitive function.²

The incidence of microtia varies from every 1200 births up to 5000–7000 births. The number in Indonesia is not known with certainty because there is no specific data collection on microtia. Therefore, taking into account the relatively high incidence rate and the problems that will arise in the future, as well as the consideration that Dr. Hasan Sadikin General Hospital is a hospital that implements congenital difference surveillance, it is very necessary to conduct research on the characteristics of microtia patients in order to increase awareness and prevent the occurrence of an increased incidence of microtia.²

And because the collection of data regarding microtia is not yet optimal, and because the basis of all research that refers to preventable, detectable, and correctable issues begins with basic research, the researcher is interested in conducting research on "Characteristics of Microtia Patients Treated at Dr. Hasan Sadikin General Hospital Period 2017-2022."

METHODS

This study used a descriptive research design. Retrospective data collection from secondary data from medical records of patients with a diagnosis of microtia who were treated at Dr. Hasan Sadikin General Hospital in the period 2017–2022. All patients with a diagnosis of microtia were included in this study. The research subjects were all patients with a diagnosis of microtia who were treated at Dr. Hasan Sadikin General Hospital. The secondary data was taken from medical records from April 17, 2017, to April 17, 2022. Selection criteria include inclusion criteria and exclusion criteria. It aims to reduce errors. The inclusion criteria were medical record data of patients with a diagnosis of microtia who sought treatment at Dr. Hasan Sadikin General Hospital from April 17, 2017, to April 17, 2022. Meanwhile, the exclusion criteria were incomplete or missing patient medical record data and inaccessible patient medical record data. The technique of taking research subjects was carried out by means of total sampling. That is, all patients who met the inclusion criteria during data collection were included in the analysis. The variables used in this study were age, sex, degree of microtia, affected ear (bilateral or unilateral), co-morbidities (syndromes), degree of hearing loss, type of hearing loss, and operative management. The instrument used in this study was the medical records of patients with a diagnosis of microtia who were treated at Dr. Hasan Sadikin General Hospital in 2017 - 2021. The data that has been collected will be analyzed using descriptive statistics. These data will be processed using software (Microsoft® Excel 2019) and displayed in tabular form.

RESULTS

This research was conducted at Dr. Hasan Sadikin General Hospital in the month of April to July 2022. Data were obtained at Dr. Hasan Sadikin General Hospital in Bandung for 80 cases. Secondary data were obtained from medical records of patients with a diagnosis of microtia at Dr. Hasan Sadikin General Hospital from January 1 to April 22, 2022. There were a total of 81 outpatient and inpatient medical records with a diagnosis of microtia. A total of 11 incomplete patient medical records were included in the exclusion criteria. An overview of the general characteristics of research subjects can be seen in table 4.1.

Table 4.1 General Characteristics of Research Subjects

Variable	N	%
Age (years)		
0-3 months	13	19,57
3 months - 1 year	2	2,86
1 year - 2 years	3	4,29
2 years - 5 years	2	2,86
5 years - 18 years	32	45,71
>18 years	18	25,71
Gender		
Male	45	64,29
Female	25	35,71
Degree of Microtia		
Degree I	5	7,14
Degree II	9	12,86
Degree III	54	77,14
Degree IV	2	2,86
Types of Microtia		
Bilateral	9	12,86
Unilateral	61	87,14
Accompanying congenital abnormalities		
Normal	53	77,14
Atrial Septal Defect	1	1,43
Parese N.VII	2	2,85
Craniofacial microsomia	8	11,42
Goldenhar syndrome	2	2,86
Treacher-Collins syndrome	2	2,86
Poland syndrome	2	2,86
Degree of hearing loss		
Normal	21	30
Mild	4	5,71
Moderate	5	7,14
Moderate-Severe	0	0
Severe	35	50
Very Severe	5	7,14
Types of hearing loss		
Normal	20	28,57
conductive deafness	47	67,14
Sensorineural deafness	2	2,86
Mixed deafness	1	1,43
Operative Management		
None	34	48,57
Stage I	15	21,42
Stage II	21	30

Based on the table above, it was found that the study subjects were mostly found in 45 male patients (64.29%) compared to 25 female patients (35.71%). The majority of patients were in

the 5–18 year age group, namely 32 people (45.71%), followed by 18 people (25.71%) in the >18 year age group, then 3 people in the 1-2 year age group (4.29%), the age group 3 months–1 year, and the age group 2–5 years each with 2 people (2.86%).

The most common degree of microtia reported was grade III in 54 people (77.14%), grade 2 in 9 people (12.86%), grade 1 in 5 people (2.86%), and grade 4 in 2 people (2.86%). The majority of types of microtia in this study occurred unilateral in as many as 61 people (87.14%), while bilateral microtia only occurred in 9 people (12.86%). Congenital abnormalities accompanying microtia in this study included craniofacial microsomia in as many as 8 people (11.42%), N.VII parese, Goldenhar syndrome, Treacher Collins syndrome, and Poland syndrome, each of which occurred in 2 people (2.86%), and an atrial septal defect, which occurred in 1 person (1.43%).

Microtia is often accompanied by hearing loss. In this study, the highest degree of hearing loss was severe in 35 people (50%), followed by moderate and very severe in 5 people each (7.14%), and mild in 4 people (5.71%). The majority of types of hearing loss were conductive in 47 people (67.14%), sensorineural in 2 people (2.86%), and mixed in 1 person (1.43%).

Based on data table 4.1, it was found that microtia patients who went to Dr. Hasan Sadikin General Hospital had stage II of operative management in 21 people (30%), 15 people (21.42%) had stage I of operative management, and 34 people (48,57%) didn't have operative management.

DISCUSSION

In this study, 70 microtia patients were treated at Dr. Hasan Sadikin General Hospital for the period April 1, 2017, to April 22, 2022, and met the inclusion and exclusion criteria. The average age of the subjects in this study was 11.5 years, with the largest age distribution in the 5–18 year age group of 32 people (45.71%). The number of male sufferers was 45 (64.29%), which was higher compared to 25 women (35.71%). These results are similar to those of a study conducted by Jovic et al. in 2021, which was conducted in Wales on 101 patients who experienced microtia from 2000 to 2018. In this study, it was found that the average age of patients with microtia who were treated was 12 years old and was dominated by men at 64.4%.³

From the results of the study, it was found that the largest degree of microtia that occurred was a third degree, amounting to 77.14%. Microtia third degree, often also called classic microtia. Most patient experience this type of microtia. In addition, the number of patients who go to the hospital increases at third degree, because at third degree there is usually appear with severe hearing loss due to atresia of the external acoustic canal, so the patient is immediately taken for treatment.^{4,5} About 90% of cases of microtia only occur unilateral, and 10% occur bilateral.⁶ In this study, more cases of microtia occurred unilateral, which was 87.14% compared to the bilateral rate of 12.86%. This is similar to the research conducted by Suutarla et al. in 2007 in the microtia population in Finland, which occurred from 1980–2005. The study found that 88.4% occurred unilateral.⁷

In this study, it was found that 11.42% of patients could be accompanied by microsomia-related craniofacial abnormalities. In fact, research conducted by Melnik and

Myranthopolus showed that almost half of the microtia patients had craniofacial microsomia.⁸ Furthermore, accompanying abnormalities that can occur are Goldenhar syndrome, Treacher Collins syndrome, Poland syndrome, parasegment N. VII (2.86% each), and atrial septal defects (1.43%). These accompanying disorders are rare, but if they do occur, they can, in fact, often be accompanied by microtia.
9-13

The degree of hearing loss that often occurs in patients with microtia is severe grade impairment, and the type of hearing loss that generally occurs is conductive hearing loss. In the study, it was found that 35% of patients with microtia experienced severe hearing loss, and around 67.14% of patients experienced conductive deafness. Patients with external auditory canal microtia and atresia are expected to have moderate to severe conductive hearing loss. The sensorineural hearing loss that occurs in microtia patients is usually a separate disease.

In this study, 34 patients (48.57%) had microtia and had not been treated. This can be caused by two factors: first, the child is not old enough to have the operative management, and second, the patient has economic limitations to have the operative management.⁷ Steps I and II are comprehensive measures, but in some patients, they are quite satisfied with stage I, so some patients do not return for treatment to continue stage II. In this case, 21.42% of cases only perform stage I, and 30% of cases have completed stage II.

CONCLUSION

Based on testing the results of research and discussion, it can be concluded that the number of microtia patients seeking treatment in the period January 2017–April 2022 at Dr. Hasan Sadikin General Hospital as many as 71 patients, the average age of microtia patients treated is 5-18 years, with the majority being between the ages of 5 and 18, males are the most common microtia patients, the most common degree of microtia is degree III, craniofacial microsoma is a comorbid congenital abnormality that often occurs in microtia patients, the majority of patients with microtia have a degree of hearing loss, with some having severe hearing loss, the most common type of hearing loss is conductive deafness and there were 15% and 21% of patients who had stages I and II performed.

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