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RESEARCH

Characteristics of Sudden Deafness Patient at Prof I.G.N.G Ngoerah Hospital, Denpasar 2021-2025

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ABSTRACT

Background: Sudden sensorineural hearing loss (SSNHL) is an ORL-HNS (Otorhinolaryngology - Head and Neck Surgery) emergency requiring immediate treatment. The global incidence of sudden deafness is relatively low, with an incidence of 5-30 cases per 100,000 people per year. **Purpose:** The purpose of this study was to determine the characteristics of sudden deafness patients at Prof. Dr. I.G.N.G Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022**. Method:** This study used a retrospective descriptive research design by taking secondary data from the medical records of patients with sudden deafness who were treated at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022. **Result :** A total of 28 patients with sudden deafness at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, were involved in this study between January 1, 2021, and December 2022. Consistent with existing literature, this study shows that the incidence of sudden deafness peaks in the 45-64 age group, and the majority of sudden deafness patients are idiopathic, unilateral, and have severe to profound hearing loss. Most sudden deafness patients seek treatment four to seven days after the onset of hearing loss.

Keywords: *Sudden Sensorineural Hearing Loss* (SSNHL), Deafness, Characteristics, Audiogram, Treatment.

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INTRODUCTION

Sudden sensorineural hearing loss (SSNHL) is an ORL-HNS emergency requiring immediate treatment. The global incidence of sudden deafness is relatively low, with an incidence of 5-30 cases per 100,000 people per year. [1,2] However, the incidence of sudden deafness can vary depending on geographic region and population age, with a higher incidence reported in populations aged 50 to 60 years. [3] The rate of spontaneous hearing recovery from sudden deafness has also been reported to vary widely, ranging from 32% to 65%. This recovery rate is thought to depend on population characteristics, the duration and degree of deafness experienced, and the time from symptom onset to treatment. Therefore, appropriate and prompt treatment is crucial for the outcome of sudden deafness. [4,5,6,7]

The exact etiology and pathophysiology of sudden deafness are currently unknown. Several etiologies are suspected to be the underlying cause of sudden deafness, such as viral infections, changes in inner ear microcirculation, and autoimmune diseases. However, detailed examinations can only elucidate the cause of sudden deafness in 10% of cases, resulting in the vast majority of sudden deafness cases being classified as idiopathic.[8,9,10] Because the causes of sudden deafness vary widely, and the cause of most cases remains uncertain, managing sudden deafness remains a challenge. Several different therapeutic approaches are currently used for sudden deafness, such as high-dose systemic steroids, intratympanic steroid injections, hyperbaric oxygen therapy, antiviral medications, and vasodilatory or vasoactive agents.[11,12,13,14]

Patient characteristics and the severity of sudden deafness significantly influence the therapeutic approach, particularly in cases of idiopathic sudden deafness. However, research on sudden deafness in Indonesia is still very limited. Therefore, this study aims to determine the characteristics of sudden deafness patients at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, between January 1, 2021, and December 31, 2022.

The purpose of this study was to determine the characteristics of patients with sudden deafness at Prof. Dr. I.G.N.G Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022.

To provide information regarding the characteristics of patients with sudden deafness at Prof. Dr. I.G.N.G Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022.

METHOD

This study used a retrospective descriptive research design, collecting secondary data from the medical records of patients with sudden deafness who were treated at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022.

The study sample consisted of patients with sudden deafness who were treated at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022.

Sampling was conducted using the total sampling method. In this sampling technique, each subject's data obtained from the medical records met the research criteria and was included in the data analysis.

Inclusion criteria: patients diagnosed with sudden deafness and treated at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, between January 1, 2021 and December 31, 2022, who received standard therapy and underwent repeat audiometry after 2 weeks of therapy.

Exclusion criteria: patients with incomplete medical records and who did not undergo repeat audiometry after therapy.

This study used secondary data, specifically medical records, to obtain the research data. Data were taken from the medical records of patients with sudden deafness who underwent examinations at the outpatient clinic and wards of Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, from January 1, 2021, to December 31, 2022. The examination

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results were recorded on a data collection sheet for subsequent analysis.

RESULT

Table 1. Characteristics of the research sample based on gender

Gender	Number	(%)
Male	25	89.28
Female	3	10.72
Total	28	100

Based on gender (Table 1), of the 28 sudden deafness patients who were treated at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, from January 1, 2021 to December 31, 2022, 25 (89.28%) were male and 3 (10.72%) were female.

Table 2. Characteristics of the research sample based on age

Age (yr)	Number	(%)
0 – 14	2	7.14
15 – 24	3	10.72
25 – 44	7	25.00
45 – 64	14	50.00
>65	2	7.14
Total	28	100

Based on age (Table 2) it can be explained that sudden deafness occurs most frequently in the 45-64 year age group, namely 14 people (50%), followed by the 25-44 year age group, namely 7 people (25%), and the least frequent occurrence occurs in the 1-14 year age group and > 65 year age group, namely only 2 people (7.14%).

Table 3. Characteristics of the research sample based on the ear that experienced sudden deafness

Ear	Number	(%)
Single side	18	64.28
Both	10	35.72
Total	28	100

Based on the ears that experienced sudden deafness (Table 3), it was found that 18 people (64.28%) experienced sudden deafness on one side of the ear or unilateral and 10 people (35.72%) experienced sudden deafness in both ears or bilateral.

Table 4. Characteristics of research samples based on causes

Etiology	Number	(%)
Dyslipidemia	5	17.85
Diabetes mellitus	3	10.71
Meningitis	9	32.14
Non-hemorrhagic stroke	1	3.58
Not found	10	35.72
Total	28	100

Based on the cause (Table 4), it was found that in 10 (35.72%) patients, no cause was found and the most common cause was meningitis, namely in 9 patients (32.14%).

Table 5. Characteristics of the research sample based on accompanying complaints

Etiology	Yes	No	Total
Vertigo	9 (32.15%)	19 (67.85%)	28 (100%)
Tinnitus	21 (75%)	7 (25%)	28 (100%)

Based on accompanying complaints (Table 5), 9 samples (32.15%) complained of vertigo, while 9 people (67.85%) did not complain of vertigo. A total of 21 people (75%) complained of tinnitus, and 7 people (25%) did not complain of tinnitus.

Table 6. Characteristics of the study sample based on onset of therapy

Onset of therapy (days)	Number	(%)
0 – 3	4	14.28
4 – 7	11	39.28
8 – 14	10	35.72
15 - 30	3	10.72
Total	28	100

Based on the onset of therapy (Table 6), it was found that the majority of patients came for treatment on days 4-7 after the sudden deafness symptoms appeared, namely 11 people (39.28%),

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and only 4 patients (14.28%) came on days 0-3 after the sudden deafness symptoms appeared.

Table 7. Characteristics of the research sample based on the therapy given

Etiology	Yes	No	Total
Hyperbaric oxygen	7 (25%)	21 (75%)	28 (100%)
Corticosteroids	28 (100%)	0 (0%)	28 (100%)
Pentoxifylline	18 (64.28%)	10 (35.72%)	28 (100%)
Vitamin	16 (57.15%)	12 (42.85%)	28 (100%)

Based on Table 7, 7 patients (25%) received hyperbaric oxygen therapy, while 21 patients (75%) did not. All patients with sudden deafness received corticosteroid therapy (100%). Eighteen patients (64.28%) received pentoxifylline therapy, and 16 patients (57.15%) received vitamin therapy.

Table 8. Characteristics of the study sample based on hearing improvement

Improve	Unilateral		Bilateral	
	Right	Left	Right	Left
>30 dB	1 (10%)	0 (28.57%)	0 (0%)	0 (0%)
<30 dB	2 (20%)	0 (0%)	0 (0%)	0 (0%)
10-30 dB	5 (50%)	5 (62.5%)	4 (40%)	5 (50%)
<10db	2 (20%)	3 (37.5%)	6 (60%)	5 (50%)
Total	10 (100%)	8 (100%)	2810 (100%)	10 (100%)

Table 8 shows that 1 patient (10%) with right unilateral deafness experienced very good recovery, while 2 patients (20%) showed no improvement in hearing. For left unilateral deafness, 5 patients (62.5%) had good hearing improvement, and 3 patients (37.5%) had no improvement. For bilateral deafness, 4 patients (40%) experienced good hearing. improvement in the right ear and 5 patients (50%) in the left ear. 6 patients (60%) had no hearing improvement in the right ear, and 5 patients (50%) in the left ear.

DISCUSSION

Sudden deafness (SSNHL) is an emergency in the field of ORL-HNS. Although rare, cases of sudden deafness require rapid and accurate diagnosis and management to achieve the best possible hearing recovery outcomes. A total of 28 sudden deafness patients at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, were included in this study between January 1, 2021 and December 2022. Consistent with existing literature, this study shows that the incidence of sudden deafness peaks in the 45-64 year old population, and the majority of sudden deafness patients are idiopathic, unilateral, and have severe to profound hearing loss.[15,16,17,18] Most sudden deafness patients seek treatment on days 4-7 after the onset of hearing loss.[19,20] To date, corticosteroid therapy remains the mainstay of treatment for sudden deafness, including at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar. Various adjuvant therapies are also provided to patients with sudden deafness at Prof. Dr. I.G.N.G. Ngoerah General Hospital, Denpasar, including hyperbaric oxygen therapy, pentoxifylline, and vitamins.[21,22,23,24] This study demonstrated that patients with bilateral sudden deafness have a worse prognosis, with patients who did not experience hearing improvement after therapy being more common in the bilateral deafness group.[25,26]

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