

POST - COVID 19 : SUDDEN SENSORINEURAL HEARING LOSS

ENT

Dr. Akriti Mahajan MBBS, MS ENT, Senior Resident Government medical college, Kathua (J&K).

ABSTRACT

Background: Sudden onset of sensorineural hearing loss without a known cause, with at least three consecutive frequency losses ≥ 30 dB within 72 h is called Sudden Sensorineural Hearing Loss (SSNHL). The possible causes of SSNHL are autoimmune diseases, circulatory abnormalities, labyrinthine membrane rupture, CNS abnormalities and viral infection. The aim of this prospective observational study was to evaluate the sudden sensorineural hearing loss after COVID-19. **Methodology:** A total of 25 post-COVID-19 patients attending the OPD in the Department of ENT, Head & Neck Surgery, Government Medical college Kathua (J&K) and during the period April 2021 to April 2022; were involved and examined clinically. A detailed history was collected and clinical examination (ear examination) was done to confirm and rule out the SSNHL. **Results:** The mean age of the study participants was 35.90 ± 19.88 years and majority of the cases were males (64%) and the female to male ratio was 1.77:1. The majority (34%) of the study participants had matric education level, most of the study subjects were miscellaneous workers (36%). The majority (58%) of the patients were from middle class and reside in rural area (58%). **Conclusion:** It was concluded that COVID-19 infection has significantly affected the hearing of the patients. After treatment there was improvement in the patients hearing.

KEYWORDS

Hearing loss, COVID-19, SSNHL, Treatment and Recovery.

INTRODUCTION

COVID-19 results in million deaths across the globe and in late December 2019, it became a global public health emergency. The prevailing global pandemic COVID-19 is being faced the unprecedented challenge in the world and it distorted every aspect of human life.¹

COVID-19 was a crisis because there was lack of known effective strategies to control its spread. It was observed that the longer duration of lockdown measures has physical and psychological impact on each group of society, include deterioration in physical health, unapproachable health care facilities, psychological upset, stress, anxiety, depression, etc.²

Numerous available evidences suggested that COVID-19 has affected all the organs of the body and also invaded into central and peripheral nervous system and resulted in various physiological impairments.^{3,4}

The term hearing loss is an extreme common condition which generally advances with aging process. The literature suggests that some pathological conditions can lead to sudden hearing loss at any age. The problematic transmission of sound wave due to any underlying cause into ear results in hearing loss.⁵

The sudden onset of sensorineural hearing loss without a known cause, with at least three consecutive frequency losses ≥ 30 dB within 72 h is called Sudden Sensorineural Hearing Loss (SSNHL). It was reported that the incidence of SSNHL is 5 & 27 per 100000 persons. Various researches suggested that the possible causes of SSNHL are autoimmune diseases, circulatory abnormalities, labyrinthine membrane rupture, CNS abnormalities and viral infection.^{6,7,8}

Thus, the present study was undertaken to evaluate the sudden sensorineural hearing loss after COVID-19.

MATERIAL AND METHODS

This prospective observational study was done in the Department of ENT, Head & Neck Surgery, Government Medical College Kathua (J&K) during the period April 2021 to April 2022 after obtaining approval from the institute ethical committee.

Total 25 post-COVID 19 patients attending the ENT out patient department during this period were included in the study after obtaining the informed consent.

Inclusion Criteria:

1. >18 years of age.
2. Patients with Sudden Sensorineural Hearing Loss (SSNHL).
3. Post COVID-19 patients attending the ENT- OPD.

Exclusion Criteria:

1. Patients refused to participate.
2. Patients with systemic diseases / co-morbidities.

3. Patients with history of head and ocular trauma.

4. Patients with history of cochlear implant.

5. Patients with history of previous hearing impairment.

A detailed history was collected and clinical examination (ear examination) was done to confirm and rule out the SSNHL.

The data was recorded in Microsoft Excel sheet and analysed and interpreted in both descriptive and inferential statistics i.e. frequency and percentage distribution, mean by using statistical package for social science software (SPSS), version 22. Categorical variables were expressed as number and percentage.

OBSERVATIONS AND RESULTS

In the present study, 25 post-COVID patients attending the ENT out patient department during this period were included in the study.

The mean age of the study participants was 35.90 ± 19.88 years and majority of the cases were males (64%) and the female to male ratio was 1.77:1.

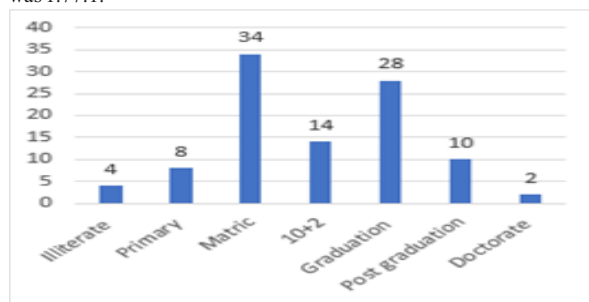


Figure 1- Educational status

Figure 1 Depicted That The Majority (34%) Of The Study Participants Had Matric Education Level.

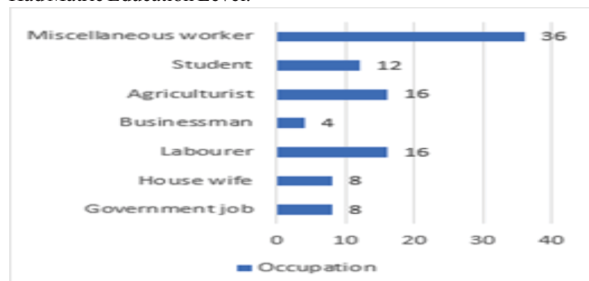


Figure 2 - Occupation

Figure 2 Presented That Majority Of The Study Subjects Were Miscellaneous Workers (36%).

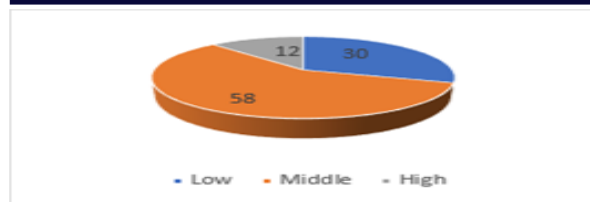


Figure 3. Socio-economic status (SES)

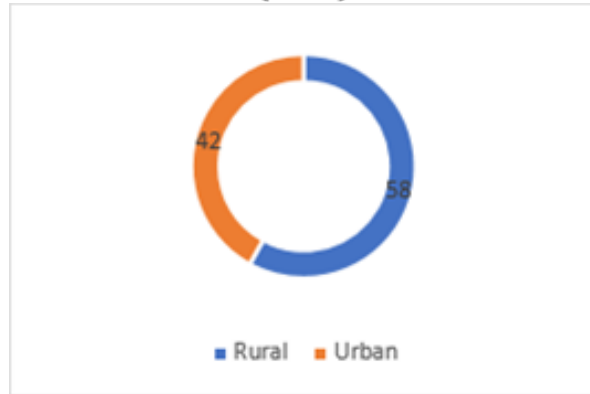


Figure 4. Area of living

Figure 3 and 4, showed that most (58%) of the patients were from middle class and reside in rural area (58%).

Table 1 Side Involved

Side involved	No. of cases	Percentage
Right	13	52%
Left	8	32%
Bilateral	4	16%

Table 1, depicted that the majority (52%) of the patients have right side involvement, followed by left side (32%) and bilateral (16%).

Table 2 Clinical Manifestation

Clinical manifestation	No. of cases	Percentage
Tinnitus	6	24
Vertigo	9	36
Otalgia	7	28
Dizziness	10	40
Facial nerve palsy	2	8
Hearing impairment	21	84
Feeling of ear fullness	5	20

It was observed that majority (84%) of the patients had hearing impairment, followed by dizziness (40%), vertigo (36%), otalgia (28%), tinnitus (24%), feeling of ear fullness (20%) and facial nerve palsy (8%).

Table 3 Treatment Outcomes

Outcomes	No. of cases	Percentage
Complete recovery	4	16
Partial recovery	14	56
Slight improvement	4	16
No improvement	3	12

The present study reported that most (56%) of the patients had partial recovery after treatment, 16% patients had complete and slight improvement respectively and 12% had no improvement.

DISCUSSION

In this study a total of 25 Post COVID-19 patients attended ENT-OPD were included the study. Data was analysed and discussed with previous literature.

The mean age of the study participants was 35.90 ± 19.88 years and majority of the cases were males (64%) and the female to male ratio was 1.77:1. The majority (34%) of the study participants had matric education level, most of the study subjects were miscellaneous

workers (36%). The majority (58%) of the patients were from middle class and reside in rural area (58%). The findings are comparable to the study conducted by Meng X *et al.*, (2022) observed that the mean age of the study participants was 43.1 years, female: male ratio was 1:0.92.⁹ In similar study conducted by Wilson H *et al.*, (2021), analysed that median age of the study participants was 70 years, most of the patients were females (53.1%), majority of the patients reside in rural area and most of the patients were unemployed / retired.¹⁰

In our study the majority (52%) of the patients have right side involvement, followed by left side (32%) and bilateral (16%). The findings are similar to the study conducted by Kilic O *et al.*, (2020), reported that 60% patients had right side involvement and 40 % had left side involvement.¹¹

The present study found that majority (84%) of the patients had hearing impairment, followed by dizziness (40%), vertigo (36%), otalgia (28%), tinnitus (24%), feeling of ear fullness (20%) and facial nerve palsy (8%). The findings are in accordance with the study conducted by Meng X *et al.*, (2022) found that the majority of the patients were accompanied by one or more other symptoms. 60.9% patients had tinnitus, followed by vertigo reported (13.0%), dizziness (8.7%), ear pain (4.0%), and peripheral facial nerve palsy (4.0%).⁹ In another study conducted by Kilic O *et al.*, (2020), observed that all the patients had hearing impairment.¹¹ Similarly, found that patients presented with tinnitus and vertigo (MKM *et al.*, 2020).¹²

In the present study it was reported that most (56%) of the patients had partial recovery after treatment, 16% patients had complete and slight improvement respectively and 12% had no improvement. Findings are correlated with the study conducted by Yaseen NK *et al.*, (2021), observed that 50% patients had improved the hearing loss after treatment.¹² In another study conducted by Schreiber BE *et al.*, (2010) found the significant improvement in more than half patient.¹³ Similarly, Meng X *et al.*, (2022) observed Meng X *et al.*, (2022) found that that most of the patients had partial recovery.⁹

CONCLUSION

It was concluded that COVID-19 infection has significantly affected the hearing of the patients. After treatment there was improvement in the patients hearing.

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