Sudden sensorineural hearing loss: importance of early diagnosis and factors associated with treatment outcome

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Introduction: Sudden sensorineural hearing loss (SSNHL) is defined as a rapid hearing loss of ≥30 dB HL across at least three consecutive frequencies, occurring within a 72-hour period. In most cases, the etiology is idiopathic, although viral infections, microcirculatory disorders, and autoimmune diseases have been proposed as potential contributing factors. Standard treatment involves the administration of corticosteroids with the optional use of hyperbaric oxygen therapy (HBOT). The aim of this study was to examine the impact of various factors on treatment outcomes in SSNHL, with particular emphasis on patient age and the time elapsed before the initiation of therapy. Methods: A retrospective analysis was conducted on 106 patients treated for unilateral idiopathic SSNHL between 2016 and 2022. The patients were divided in two age groups (<65 and ≥65 years). Various factors were analyzed in relation to age and treatment outcomes of SSNHL, including hearing improvement, sex, absolute improvement in the hearing threshold, time interval between symptom onset and the beginning of treatment, effect of hyperbaric oxygen therapy, audiogram configuration, and hearing threshold in the contralateral ear. Results: Overall, 59% of patients showed hearing improvement. The recovery was more frequent in younger patients (68.3%) than older ones (47.8%), though this difference was not statistically significant ($p = 0.053$). Age was a significant negative predictor of hearing gain in univariate analysis ($p < 0.001$), but not in multivariate analysis ($p = 0.054$). Treatment delay was a consistent predictor of poorer outcomes (OR = 0.993, $p = 0.007$), particularly in younger patients. Intratympanic therapy was associated with reduced recovery, likely reflecting its use in refractory cases. Contralateral ear hearing status also correlated with outcome. Conclusion: Early recognition and timely initiation of treatment for sudden sensorineural hearing loss are crucial for optimal recovery, especially in older individuals. Delayed treatment significantly reduces the likelihood of hearing improvement. Public health awareness should be increased regarding the importance of prompt treatment initiation in order to improve outcomes and preserve the quality of life, particularly in older adults.

Key words: aging, hearing outcome, treatment delay, sudden sensorineural hearing loss