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ORIGINAL ARTICLE

Simultaneous idiopathic bilateral sudden hearing loss – characteristics and response to treatment[☆]

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KEYWORDS

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Abstract

Introduction: The aetiology of sudden hearing loss is poorly defined; however, infectious, vascular and neoplastic aetiologies are presumed to be responsible. In addition, the aetiology of bilateral sudden hearing loss is also unknown.

Objective: The objective of this study is identify the characteristics and treatment response of simultaneous bilateral sudden hearing loss.

Methods: This is a case-control study that practised in tertiary care academic centre. 132 patients with sudden hearing loss who were treated with systemic steroid and hyperbaric oxygen together were included. 26 patients had bilateral sudden hearing loss and 106 patients had unilateral sudden hearing loss. Patients were evaluated with clinical, audiological and radiological examinations and laboratory tests were done. Findings and response to treatment of the patients were compared.

Results: The mean ages of patients with unilateral and bilateral sudden hearing loss were 42.0 years and 24.5 years respectively with a statistically significant difference ($p < 0.001$). Immune response markers were more prevalent in bilateral sudden hearing loss. Pre-treatment audiologic thresholds were 69.1 dB for unilateral sudden hearing loss and 63.3 dB for the left ears and 67.6 dB for the right ears for bilateral sudden hearing loss without significant difference. Post-treatment average hearing threshold in unilateral sudden hearing loss was 47.0 dB and 55.4 dB for the left ears and 59.0 for the right ears in bilateral sudden hearing loss. Average hearing improvement in unilateral sudden hearing loss group was significant ($p < 0.001$) in spite of it was not significant in bilateral sudden hearing loss group for both ears. Between the groups; there was a significant difference for hearing improvement favouring unilateral sudden hearing loss

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($p < 0.001$). Tinnitus scores decreased significantly in both groups of patients ($p < 0.001$) in spite of there was no significant difference between the groups of patients.

Conclusion: Patients with bilateral sudden hearing loss showed lower age, worse prognosis and higher rate of positive immune response markers. Cardiovascular risk factors seem to have an important role in the aetiology of unilateral cases whereas this importance was not present in bilateral ones.

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PALAVRAS-CHAVE

Perda auditiva;
Súbita;
Doenças autoimunes;
Zumbido;
Tratamento;
Prognóstico

Perda auditiva súbita bilateral idiopática simultânea - características e resposta ao tratamento

Resumo

Introdução: A etiologia da perda auditiva súbita ainda não está bem definida; contudo, presume-se que as etiologias infecciosas, vasculares e neoplásicas sejam as responsáveis. Além disso, a etiologia da perda auditiva súbita bilateral também é desconhecida.

Objetivo: O objetivo desse estudo foi identificar as características e a resposta ao tratamento de perda auditiva súbita bilateral simultânea.

Método: Este é um estudo de caso-controle realizado em um centro de atenção terciária. Foram incluídos 132 pacientes com Perda Auditiva Neurosensorial Súbita (PANS) que foram tratados com esteroides sistêmicos e oxigênio hiperbárico. 26 pacientes tiveram PANS bilateral e 106 pacientes tiveram PANS unilateral. Os pacientes foram avaliados com exames clínicos, audiológicos, radiológicos e exames laboratoriais. Os achados e a resposta ao tratamento dos pacientes foram comparados.

Resultados: As idades médias dos pacientes com PANS unilateral e bilateral foram 42,0 anos e 24,5 anos, respectivamente, com diferença estatisticamente significante ($p < 0,001$). Os marcadores de resposta imune foram mais prevalentes na PANS bilateral. Os limiares audiológicos pré-tratamento foram 69,1 dB para PANS unilateral e 63,3 dB para a orelha esquerda e 67,6 dB para a orelha direita para PANS bilateral, sem diferença significativa. O limiar médio de audição pós-tratamento em PANS unilateral foi de 47,0 dB e 55,4 dB para a orelha esquerda e 59,0 para a orelha direita em PANS bilateral. A melhora auditiva média no grupo com PANS unilateral foi significativa ($p < 0,001$), apesar de não ser significativa no grupo com PANS bilateral para ambas as orelhas. Houve diferença significativa entre os grupos na melhora auditiva favorecendo a PANS unilateral ($p < 0,001$). Os escores de zumbido diminuíram significativamente em ambos os grupos de pacientes ($p < 0,001$), apesar de não ter havido diferença significativa entre os grupos de pacientes.

Conclusão: Os pacientes com PANS bilateral eram mais jovens, tinham pior prognóstico e maior taxa de marcadores de resposta imunológica positiva. Os fatores de risco cardiovasculares parecem ter um papel importante na etiologia dos casos unilaterais, ao passo que essa importância não estava presente nos casos bilaterais.

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Introduction

Sudden hearing loss (SHL) is defined as a sensorineural type of hearing loss that develops over a period of 72 h, with 30 dB or more of hearing reduction in at least 3 contiguous frequencies. The severity of the hearing loss varies from patient to patient. SHL can affect any age group, but usually peaks at 60 years of age, without a gender difference.¹ Ear fullness and tinnitus are common complaints in the affected ear, while varying degrees of vertigo can be detected in 40% of SHL patients.² The estimated incidence of SHL in

the United States per year ranges from 5 to 20 cases per 100,000 individuals.³ Most cases of SHL develop unilaterally, with bilateral involvement comprising only 0.44–4.9% of the patients,^{1–5} which makes the incidence of bilateral SHL extremely low.⁵ Although rare, this condition is more dramatic due to the bilateral loss of hearing.

The aetiology of sudden hearing loss is poorly defined; however, infectious, vascular and neoplastic aetiologies are presumed to be responsible.^{2,3} In addition, the aetiology of bilateral SHL is also unknown. The presumed factors, such as viral infection, circulatory insufficiency or

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