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MENIERE'S DISEASE MANAGEMENT & DIAGNOSTIC APPROACH, LITERATURE REVIEW

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ABSTRACT

Meniere's disease is a problem of the inner ear, people with this condition may present with hearing loss or ringing ears, and dizziness. This condition often affects people from young adults up to sixty years of age. There may be a previous episodic history of untreated Meniere's disease. In this review, we discuss Meniere's disease regarding pathophysiology, clinical features, medical and surgical management, and prevention. PubMed database was used for articles selection, papers were obtained and reviewed. PubMed database was used for articles selection, and the following keys terms: Meniere's disease, pathophysiology, clinical features, diagnosis, management. While Meniere's disease is an issue relating to a disturbance in pressures of the inner ear, the specific cause of this pathology remains understudied. Patients presenting with ear problems should be asked in their consultation about dizziness, spinning feeling, nausea or vomiting, ringing, or loss of hearing. Meningitis and hearing loss should be ruled out promptly. Medical treatment is focused on reducing symptoms' severity and preventing future episodes. While medical therapy may be needed in Meniere's disease, steroidal injection and surgical intervention are rising options in the management of refractory cases. Follow-up remains important in this condition as prevention is necessary for patients to sustain normal lives.

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Introduction

Meniere's disease is a problem of the inner ear, people with this condition may present with hearing loss or ringing ears, and dizziness. This condition often affects people from young adults up to sixty years of age. There may be a previous episodic history of untreated Meniere's disease. In this review, we discuss Meniere's disease regarding pathophysiology, clinical features, medical and surgical management, and prevention.

Materials and Methods

PubMed database was used for articles selection, papers were obtained and reviewed. PubMed database was used for articles selection, and the following keys terms: Meniere's disease, pathophysiology, clinical features, diagnosis, management. Regarding the inclusion criteria, the articles were selected based on the inclusion of one of the following topics: Meniere's

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disease, its diagnosis, medical and surgical management, and prevention. Exclusion criteria were all other articles that did not have one of these topics as their primary endpoint.

Pathophysiology

While Meniere's disease is an issue relating to a disturbance in pressures of the inner ear, the specific cause of this pathology remains understudied. Theoretically, this condition might be caused by an autoimmune disturbance. Magnetic resonance imaging studies have recognized endolymphatic hydrops as a histopathological mark of the disease [1, 2]. There are, however, several risk factors that could lead to the problem occurring. The most obvious factor would be an anatomical problem leading to poor drainage of the inner ear.

People with immune system problems and allergies could also suffer from an increased risk of Meniere's [3]. Other risk factors include head trauma, meningitis, and other viral infections, or a positive family history of Meniere's disease. While no single risk factor is guaranteed to cause Meniere's disease, it is a combination of two or more of these factors that could cause the disease.

Clinical Features

Patients presenting with ear problems should be asked in their consultation about dizziness, spinning feeling, nausea or vomiting, ringing, or loss of hearing. The onset of symptoms in this condition is often acute and lasting a few hours, with most symptoms occurring in one ear. Sensorineural hearing loss may occur and often affects one ear [4].

Ruling out emergency signs of meningitis are important if the onset was acute, signs to look for include aversion to light, neck rigidness, headache, and fever. In patients with recurring episodes, an investigation for bilateral vestibulopathy should be sought [5]. The progression and severity of Meniere's disease could be divided into three groups **(Table 1)**.

Table 1. Meniere's Disease Stages

	Salient Features	Duration
Mild	Acute vertigo, nausea, vomiting, tinnitus, hearing returns to normal between attacks	Hours, intermittent throughout a year
Moderate	Continuous attacks of vertigo but less in severity increased vomiting and tinnitus severity	Remission for months
Severe	Worsened tinnitus, balance problems, and sensorineural hearing loss	Lifelong

Diagnosis

While cases of ear problems are often reviewed by the general practitioner or family doctor, the management is often a referral to an ear-nose-throat specialist. The history of the complaint combined with clinical examination should identify the diagnosis. For instance, the patient may inform the surgeon about a ringing sensation or a feeling of pressure in the ear. In any hearing problem, the surgeon should aim to exclude emergency symptoms such as photophobia, fever, neck rigidity. After excluding meningitis signs, the specialist should check for any dizziness and vertigo attacks. Furthermore, a differential should be made for ear infection, vestibular neuronitis, and labyrinthitis. A hearing test would identify any fluctuating loss in hearing ability.

Management

Meniere's disease is a self-limiting condition, and no treatment is currently specific. Management mainly focuses on symptomatic treatment of associated problems. In patients who are dizzy, nauseous, or vomiting should receive antiemetics and antihistamines. Vestibular rehabilitation should be offered to those who complain of loss of balance. Cognitive-behavioral therapy is standard support in counseling these patients along with breathing techniques and yoga, as the condition is chronic, and patients would need to know how to deal with the condition throughout their life [6, 7].

The patient should be educated on what to do during an acute episode of Meniere's disease. If they are on medical treatment for dizziness, then they should take it immediately. Thereafter, they can sit down or lie down in a safe area. Closing their eyes while seated or lying down would help with reducing the dizziness. The patient should be instructed to perform any sudden movements during an acute episode as it could exacerbate the illness. Patients on anti-psychotics such as prochlorperazine may be required to have injections instead of pills if their attacks are severe [8].

Current research is investigating the role of surgical intervention in patients with severe symptoms. Intratympanic steroidal and gentamicin injections show favorable outcomes in refractory Meniere's disease, as it controlled vertigo and preserved hearing from further damage [9]. Intratympanic steroidal injection could be combined with early grommet insertion, and vestibular physiotherapy to adequately improve the success of remission and reduce future episodes [10]. When preservation of hearing is not a major issue, there is an option of labyrinthectomy through transmastoidal approach, as it will effectively relieve patients of severe vertigo [11].

Prevention

Medications given to patients include ones meant to prevent recurrence of the disease as well as to decrement the severity of an episode. Betahistine is the standard medication, as it works by decreasing the pressure within the ear and, hence, relieves the symptoms that accompany the disease. Moreover, studies have shown non-inferiority of modified-release betahistine and

betaserc in the management of Meniere's disease [12]. Vestibular rehabilitation and betahistine improve the quality of life of these patients, as they reduce the risk of falls [13].

There is not much evidence for dietary and lifestyle changes in the treatment of Meniere's disease, but a healthy lifestyle is always beneficial to the overall condition of people. The attention to helping the patient cope with the disease is important as most affected people have a severely reduced quality of life [14]. Current recommendations include a low salt diet and reduction of intake of both alcohol and caffeine [15]. Of course, the condition affects driving, as patients should not be driving until they have their dizziness and hearing problems under control.

Conclusion

The condition of a patient with Meniere's disease is assessed by severity, and treatment is given accordingly to control symptoms. Care should be given to these patients since diagnosis, as the disease is detrimental to the quality of life. The options range from lifestyle changes, medications for treatment and prevention, and surgical intervention.

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