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Review Article

Concept and Management of Meniere's Disease in Unani Medicine-A Review

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Abstract

Meniere's disease, also called endolymphatic hydrops, is a disorder of the inner ear where the endolymphatic system is distended due to endolymph. It is characterized by vertigo, Tinnitus, sensorineural hearing loss and aural fullness. The main pathology in Meniere's disease is distention of endolymphatic system due to increased volume of endolymph. This can result either from increased production of endolymph or its faulty absorption or both. The description of hypothyroidism as a disease is not directly found in Unani texts. However, the signs and symptoms of meniere's disease such as *Dawar* (vertigo), *Taneen* (tinnitus), *Hissi Asabi Bahrapan* (sensorineural hearing loss), *Seqal-e-Uzn* (aural fullness) mentioned in unani medicine associated with clinical manifestation in the context of *Su-e-Mizaj Barid Maddi* (derangement in cold temperament) as a result of an excess production endolymph (*Kasrate Ifraz-e-Androon lymph*) or defective absorption of endolymph (*Nuqse Jazb-e- Androon lymph*) in abnormal phlegm in the internal ear. On the basis of this fact, an attempt has been herewith made to understand the disease and its management through Unani Medicine.

Keywords: Meniere's disease, Vertigo, Tinnitus, *Taneen*, Deafness

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INTRODUCTION

Meniere's disease is a disorder of the inner ear where endolymphatic system is distended with endolymph. It is also called endolymphatic hydrops and characterized by Spontaneous episodic attacks of vertigo, tinnitus, sensorineural hearing loss which usually fluctuates and often a sensation of aural fullness.^{1,2} Despite this well-known symptom complex, it remains a controversial and often difficult condition to diagnose and treat.

Prosper Meniere was the first who identified Meniere's disease in the early 1800s. It affects between 0.3 and 1.9 per 1,000 people that is 2 persons per 1,000 people approximately.³ The worldwide incidence of Meniere's disease is approximately 12 out of every 1,000 people.⁴ Perhaps 100,000 patients develop Meniere's disease every year.⁵ Meniere's disease has a prevalence of approximately 200 cases/100,000 persons in the United States, or in other words, less than 0.2 % of the population has Meniere's disease.⁶ It is commonly seen in the age group of 35-60 years

and male are more affected than females.¹ Inner ear consists of 2 parts: bony labyrinth & membranous labyrinth. Membranous labyrinth is filled with endolymph while space between membranous & bony labyrinths is filled with perilymph. It consists of the cochlear duct, the utricle & saccule, the 3 semi-circular ducts and the endolymphatic duct & sac. Cochlear duct is subdivided by two longitudinally running membranes that separate three chambers, the scala tympani, scala media and scala vestibuli. The scala media is triangular in section, the other boundaries represented by Reissner's membrane which runs obliquely with respect to the basilar membrane from a ridge of tissue, the spiral limbus near the modiolus to the lateral wall that runs along the inside of the bony wall. The organ of Corti runs in a spiral along the floor of the scala media, situated on its lower boundary, an acellular layer called the basilar membrane.^{1,7,8} The purpose of this study is an overview of Meniere's disease and its understanding through Unani medicine and management of Meniere's disease.

CONCEPT OF MENIERE'S DISEASE IN UNANI MEDICINE

Amraz-e- Uzn Anaf wa Halaq is a branch of Unani Medicine where diseases related with Eyes, Ears, Nose and Oral cavity has been explained. As per the unani text, Uzn is an important sense organ when the patient complained of post nasal discharge and its exacerbation in winter, called *Nazlah* and abnormal accumulation of (*Balgham*) phlegm and causative pathologic substances in the brain. These phlegm (*Balgham*) or pathogenic substances of brain poured down to ear causing *Dawar* (vertigo), *Taneen* (tinnitus), *Sumam* (deafness) and other features.

The etiological factors are: exposure to cold breeze, diving or swimming, probing the external auditory canal, sound pollution, untreated chronic systemic disease. According to Unani physicians the treatment is based on lifestyle modification, warming up the body, strengthening the brain and the nervous system, enhancing the digestive system, modifying the condition of defecation, as well as the removal of waste materials and accumulated abnormal humors from the body, especially from the head.⁹⁻¹²

AETIOLOGY^{1,7,8,13}

The exact cause of Meniere's disease is not known but various theories have been postulated as:

- Defective absorption by endolymphatic sac
- Vasomotor disturbance
- Allergy
- Sodium and water retention
- Hypothyroidism
- Autoimmune and viral aetiologies

PATHOLOGY

The main pathology of distended endolymphatic system affects the cochlear duct (scala media), the saccule and lesser extant to utricle and semicircular canals. The dilated cochlear duct may fill completely the Scala Vestibule which interferes with hearing leading to diminished hearing and tinnitus. The distended Utricle, Saccule and Semicircular canals may show disturbance in maintaining the body

balance leading to Vertigo. Thus the triad symptoms are experienced by the patients is very prominent ^{1,5,7,8,14}.

CLINICAL FEATURES OF MENIERE'S DISEASE

a) Sudden and recurrent episodes of vertigo^{1,7,8}

A typical vertigo attack has 3 phases:

- Initial irritative phase due to increased potassium concentration–nystagmus usually horizontal or horizontal-torsional & beats towards the affected ear and lasts less than an hour.
- Second parietic phase nystagmus beats away from affected ear because of peripheral hypofunction and reduced spontaneous neural activity and lasts usually several hours or sometimes 1 or 2 days.
- Third recovery phase in which nystagmus again beats towards affected site; brainstem compensation lasts for several hours or sometimes 1 or 2 days

b) Deafness/Hearing loss^{1,7,8}

- Diplacusis or double hearing is altered sound perception, which differs from that of a presented sound. Diplacusis could be manifested as binaural or monaural. In binaural diplacusis, the same tone is perceived differently in each ear. It is most frequently reported in Meniere's disease. Patient typically complains of 'distorted' sounds.
- Intolerance to loud sounds.

c) Tinnitus with episodes of headache

- It is low pitched roaring type or may be hissing type and is aggravated during acute attacks. Change in intensity and pitch of tinnitus may be warning symptom of attack.⁸

d) Feeling of fullness in the ears (Aural fullness)⁷

e) Emotional stress

- Patients of Meniere's disease** often show emotional upset due to apprehension of the repetition of the attack.¹

STAGES OF MENIERE'S DISEASE

It can be seen in table no.1

Table 1: Stages of Meniere's Disease ^{1,3}

Symptoms	Early	Middle	Late
1. Vertigo	Sudden episodes of Vertigo	Less severe Vertigo attacks	Less frequent Vertigo
2. Hearing Loss	Variable	More severe	Hearing loss becomes worst
3. Tinnitus	Variable	More severe	Tinnitus becomes worst
4. Others	Hearing becomes normal and no tinnitus.	Periods of remission	Problems with balance

EXAMINATION ¹

- Otосcopy – no abnormality in tympanic membrane.
- Nystagmus – seen only during acute attack, quick component of nystagmus is towards unaffected ear
- Tuning fork tests – indicate SNHL. Rinne +, ABC reduced, weber lateralized to better ear.

Pure Tone Audiometry – SNHL ^{1,7,8}

- Early stages – lower frequencies affected & curve is rising type
- When higher frequencies involved, curve becomes a flat or a falling type.^{1,7,8}

Speech Audiometry ^{1,7,8}

- Discrimination score is usually 55-85% between attacks but impaired during & immediately following an attack.

- b. To differentiate from retrocochlear
- c. Recruitment positive
- d. Short increment sensitivity index (SISI) >70%
- e. Tone decay test-decay < 20dB^{1,7,8}

Special Audiometry Tests^{1,7,8}

- a. Recruitment test
- b. Short increment sensitivity index (SISI) test
- c. Tone decay test

Electrocochleography^{1,7,8}

- a. Most sensitive & specific for Meniere's when tone-burst and click stimuli are used, and when the responses are recorded transtympanically at the promontory.
- b. Giving 4g oral NaCl for 3 days prior to electrocochleography may increase the sensitivity of the test.

Serology

- Fluorescent treponemal antibody absorption is mandatory in any patient given the diagnosis of an idiopathic disease since syphilis may perfectly imitate Meniere's disease.^{1,7,8}

Caloric test

- It shows reduced response on the affected side in 75% of cases. Often, it reveals a canal paresis on the affected side (most common).^{1,7,8}

Glycerol test

- Glycerol is a dehydrating agent, when given orally, it reduces endolymph pressure and thus causes an improvement in hearing. Audiogram and speech discrimination scores are recorded before and 1–2 hours after ingestion of glycerol. The test has a diagnostic and prognostic value, these days, glycerol test is combined with electrocochleography.^{1,7,8}

VARIANTS OF MENIERE'S DISEASE⁷

Cochlear hydrops

Only cochlear symptoms are present but vertigo is absent and appears after several years. It confining increased pressure to cochlea only.

Vestibular hydrops

There is episodic vertigo, while cochlear functions are normal.

Drop attacks (tumarkin's or otolithic crises)

There is acute otolithic dysfunction of utricle or saccule due to changes in endolymphatic pressure, occur in the later stages of the disease. Patient simply drops to the ground without warning and can sustain a fracture or a serious injury.

Lermoyez Syndrome

Here symptoms of Meniere's disease are seen in reverse order.

CONCEPT OF MODERN TREATMENT

General measures:

- a. Reassurance, bed rest, low salt diet.
- b. Avoiding smoking, excessive intake of alcohol, water, coffee and tea low salt diet.^{8,14}

Acute treatment

General measures plus intravenous fluids and electrolyte administration to combat their loss due to vomiting. Vestibular sedatives such as prochlorperazine, dimenhydrinate etc. and vasodilators such as carbogen which improves circulation in labyrinth.^{1,7,8}

Chronic treatment

In the chronic condition treatment consists of vestibular sedatives, vasodilators, diuretics, propantheline bromide, elimination of allergen, hormones (if hypothyroidism).^{1,7,8}

SURGICAL TREATMENT

Intratympanic Injection Gentamicin

Gentamicin is predominantly vestibulotoxic and acts by destroying the dark cells of the secretory epithelium, thus decreasing endolymph production.^{1,7}

Endolymphatic sac surgery

It reduce the frequency, duration & intensity of vertigo attacks.¹

Surgical Labyrinthectomy

It stop the vertigo attacks at the expense of losing any remaining hearing on that side.^{7,8}

USOOL-E-ILAJ (PRINCIPLE OF TREATMENT)

In the Unani system of medicine, the main emphasis of *Usool-e-Ilaj* (principle of treatment) are:¹⁵

1. Use of *Musakkin* (Sedative)
2. Use of *Mufatteh Urooq* (Vasodilators)
3. Use of *Mudire Baul* (Diuretics)
4. Removal of *Khilt Gair Tabai* (Abnormal humour)

ILAJ (TREATMENT)

In the Unani system of medicine, the principle of treatment is based on *Usool-bil-Zid* (principle of contradiction). There are four treatment methods, or modalities: *Ilaj-bil-Dawa* (pharmacotherapy) *Ilaj-Bil-Ghiza* (diet therapy), *Ilaj-bil-Tadabeer* (regimental therapy) and *Ilaj-bil-Yad* (manual therapy/surgery).¹⁵

Ilaj Bil Dawa (pharmacotherapy):

- As *Musakkin* (Sedative) drugs, Khamira Khaskhash 3-5gm, Dayaqqooza 10ml, Barshasha 1gm can be given for this purpose.¹⁵
- As *Mufatteh Urooq* (Vasodilators) and *Mudire Baul* (Diuretics), Banadiql Bazoora 2 tab with sharbat bazoora 20 ml and sharbat Ustookhudoos 20 ml in the morning and evening. Or

Decoction of Tukhme Khayarain 10 gm, Tukhme Kharpaza 5 gm, Tukhme Kasni 5 gm, Kharkhasak 7 gm, Mako khushk 5 gm, Ustookhudoos 5gm, Badranjboya 5 gm along with Sharbat Deenar 20 ml.¹⁵

- Jawarish Jalinoos 5 gm twice daily after meal.
- Hareera Maghz badam in the morning and Itrifal Kashneezi 7 gm at night in case of *Dawar* (Vertigo)

Ilaj Bil Ghiza (Dietotherapy)

- Diet such as *Jaiyyad ul Kaimus* (normal chyme), *Lateef* (tense diet) and *Saree-ul-Hazm* (fast appetizer) are recommended.
- Patient should take salt free diet as far as possible.
- Avoid excessive intake of alcohol, water, tea and coffee.

Ilaj-bil-Tadabeer (Regimental Therapy) ¹⁵

- *Nutool Raas*: Medical irrigation on head by decoction of rose leaves (Barge Gulab).
- *Hijama* (Cupping) on pre auricular region, neck and C7.
- *Pashwiya* (Foot bath) by decoction of Barge Beri and Badiyan.

CONCLUSION

It is concluded that Meniere's disease is a condition that needs to be assessed correctly and proper measures should be adopted in its management. Erratic life styles, unhealthy eating habits and lack of exercise could contribute towards developing Meniere's disease. Because it is critically diagnosed and poorly treated with increasing incidences even in the Indian society. The early treatment for Meniere's disease should be started to avoid further complications with the help of unani medicine. Therefore, the treatment protocol for Menier's disease should include use of *Musakkin* (Sedative), *Mufatteh Urooq* (Vasodilators), *Mudir-e-Baul* (Diuretics) and Removal of *Khilt-e-Gair Tabai* (Abnormal humour along with *Ilaj-Bil-Tadabeer* (regimental therapy) which will give promising results.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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