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Understanding Meniere's Disease in the light of Ayurveda

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ABSTRACT

Meniere's Disease is an inner ear disease characterized by episodes of Vertigo, Fluctuating sensorineural hearing loss, Tinnitus and sensation of fullness of ear (aural fullness). It may be associated with headache, nausea, drop attacks. Relapsing nature of the disease hampers the quality of life in patients. The highest prevalent age group is 30- 60 years of age. The main pathology occurs as the result of endolymphatic sac distension caused by excessive production or faulty absorption of endolymph or both. The exact cause is unknown the hypothesized etiological factors are vasomotor disturbances, excessive retention of water and sodium, allergy, auto immune, otosclerosis, otitis media etc. *Acharya Sushruta* has explained *Karnarogas* like *Karnanaada*, *Karnakshweda*, *Badhira* which are nearer to Meniere's disease when studied along with *Bhrama*. By knowing *Doshic* involvement we can incorporate the *Chikitsa* explained in the context of *Urdhwajatru Vikaras* like *Nasya*, *Karnapoorana*, *Shirodhara* etc. it is a *Vata Pradhana Tridoshaja Vyadhi* along with *Rajo Dosha* vitiation. Management can be done by adopting *Shodhana Chikitsa* like *Snigdha Virechana*, *Tikshna Nasya* which are helpful in combating *Margavarodha* and *Vataprakopa*, followed by *Brimhana Nasya*, *Rasayana* therapy along with *Satwavajaya Chikitsa* which helps to manage the anxiety induced by Vertigo.

Key words: Meniere's disease, Karnanaada, Karnakshweda, Badhira, Bhrama, Nasya Karma, Karnapoorana

INTRODUCTION

Meniere's disease is an inner ear disorder where the endolymphatic system is distended with endolymph. It is characterized by Vertigo, Sensorineural hearing loss, Tinnitus and Aural fullness.

The main pathology in Meniere's Disease is distension of endolymphatic system due to increased volume of endolymph. This can result either from increased production of endolymph or its faulty absorption or

both.^[1]

Karna is one among *Panchendriya* and is produced by *Akasha* and *Vayu Mahabhuta*. *Karna* is an *Avakashayukta* and *Vivaryukta Indriya*, situated in *Urdhwajatru*. In Ayurvedic Classics explanation of Meniere's disease is nowhere mentioned but by studying the *Karna Rogas* like *Karnanaada*, *Karna Kshweda*, *Badhira* and also by knowing the *Bhrama Roga* we can understand the Meniere's disease through the *Dosha Siddhanta* and incorporate treatment methodology. By analysing the signs and symptoms of Meniere's Disease we can correlate to *Bhrama Roga* and *Vataja Karna Roga* mentioned by *Acharya Charaka*. *Karnanaada*, *karnakshweda*, *Badhira* and *Bhrama* explained by *Acharya Sushruta* have similar symptomatology; *Nidana*, *Samprapti* and *Chikitsa* explained; holds good for Meniere's Disease also.

Karnanaada, Karnakshweda, Badhira and Bhrama as Meniere's disease

- Meniere's disease have not been mentioned by our *Acharyas*; but the symptoms of Meniere's

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disease have been mentioned in our science as an individual or separate *Vyadhi*. So, here an attempt is made to analyse the Meniere's Disease on the basis of involvement of *Doshas*.

- In our classics we come across *Karna Rogas* like *Karnanaada*, *Karna kshweda*, *Badhirya*. We also encounter the explanation of *Bhrama Roga*. So, when we study them in combination probably, we can consider as Meniere's disease.
- *Acharya Charaka* states that it is not necessary to name the disease but physician have to treat the condition according to the predominance of *Doshas*.
- In Meniere's disease three main manifestations are Vertigo, Tinnitus, Hearing loss i.e., where we can consider *Bhrama*, *Karnanaada*, *Karna Kshweda* and *Badhirya*.

Meniere's disease is synonymous with Endolymphatic hydrops in which endolymphatic system is distended with endolymph. Endolymph is a K^+ rich fluid situated in scala media of the cochlea. Whereas scala vestibuli and scala tympani are filled with perilymph. Scala vestibule and scala tympani communicate directly with the subarachnoid space around the brain, so the perilymph is almost identical to CSF (cerebro spinal fluid). The endolymph that fills the scala media is an entirely different fluid secreted by the Stria vascularis. Stria vascularis is a highly vascular area on the outer wall of scala media.^[2]

Endolymph contains higher concentration of potassium (K^+) ions and lower concentration of sodium (Na^+) which is exactly opposite to the contents of perilymph. So, in this context we can consider Endolymph as the *Karnagata Tarpaka Kapha* which helps in the maintenance of electrical potential for the maintenance of inner ear function i.e., maintenance of balance and Hearing.

So, here we can decode the Meniere's disease into our *Doshic* theory; so, by studying the pathophysiology of the Meniere's disease, we can consider it as *Kapha Sthanagata Tridoshaja Vyadhi*.

In the initial stage of the disease we encounter the vitiation of *Kapha* in *Urdhva Jatru*, and causes *Sroto Avarodha* in *Urdhwagami Siras* of *Shravanendriya*. In the later stages of the disease we encounter the influence of *Vata Dosha* more, that is due to the *Margavarodha* of *Vata Dosha* which gets aggravated in the *Urdhvajatru*, and makes the condition as *Vata Pradhana Vyadhi*.

We can consider the increased endolymph as *Dusta Kapha*. The *Dusta Kapha Dosha* obstructs the conduction of sensory and mechanical signals through the vestibulocochlear nerve to the Auditory centre and Organ of Corti. The vitiated *Kapha Dosha* causes dilatation in endolymphatic sac which mechanically and chemically interfere with the sensory cells for balance and hearing, which can lead to temporary dysfunction and in later stages due the *Vata Dosha* influence even death of the sensory cells occur, which in turn causes the typical symptoms of Meniere's Disease: Vertigo, Hearing loss, and Tinnitus.

The aggravated *Laghu Guna* of *Vata* and *Pitta Dosha* causes *Laghavata* in the body i.e., Vertigo, when *Vata Dosha* gets encircled by *Kapha Dosha* results into ringing, roaring, hissing, etc. types of sounds in the affected ear i.e., *Karnanada* & *Karnakshweda* (Tinnitus), due to the *Marga Avarodha* in *Shabdavaha Srotas* the conduction of sound will be hampered which results into *Badhirya* (Hearing Loss).

In *Shiras Prana Vata*, *Udana Vata*, *Sadhaka Pitta* and *Tarpaka Kapha* are situated. These are the functional units of *Shiras*. Integrated functioning and balance of these *Dosha* helps in the proper functioning of nervous system and sense organs. Imbalance of these *Dosha* will lead to many *Urdhvajatrugata Vikaras* including *Karmahani* of *Indriyas*.

Tarpaka Kapha nourishes the brain, sensory organs and maintains the proper functioning of *Indriyas* and brain, hence helps in *Indriyarth Sannikarsha*, *Tarpaka Kapha* helps to maintain the *Sthiratava* of the body.

Prana Vata and *Udana Vata*; *Prana Vata* does the *Dharana* of the *Buddhi*, *Indriya* and *Mana*. *Prana Vata* is the controller of functions of the brain, the higher functions including perception of sense objects, the

motor signals in response to the sensory signals, the thought process, intelligence and application of intelligence so as to lead the day to day activities, integration of mind and sense organs, and all mind functions are manipulated, controlled and governed by *Prana Vata*. *Dhamani Dharana* by *Prana Vata*, it controls the functions of the *Dhamanis*. In this context *Dhamani* shall be considered as nerves. The nerve conductivity of signals to and from the brain is under the control of *Prana Vata*.^[3]

Udana Vata which is situated in the *Urdhva Jatru* is responsible for all *Urdhva Jatru Gata Vikaras*. *Udana Vata* helps in the *Karma* of all *Indriyas*. To do any work we need to put effort, this effort is initiated by *Udana Vata* in synchronization with *Prana Vata*. Strength, endurance, immunity are provided by *Udana Vata*.^[4,5]

So, here due to the vitiation of *Prana*, *Udana*, *Vyana* and *Tarpaka Kapha*, *Karma Kshaya* of *Karnendriya* occurs in which person experiences *Bhrama*, *Karnanada*, *Karna kshweda*, *Badhirya*.

Nidana

When we study Meniere's disease we come across few etiological factors like chronic otitis media, sinusitis, rhinitis, allergy, auto immune condition, and genetic predisposition. So, when we analyze the above mentioned etiological factors, we get to know that the above mentioned conditions are resulted because of the indulgence in *Jala Kreedha*, exposure to *Avashyaya*, *Sheeta Upachara* after *Shirovirechana*, *Atiyoga* or *Mithya Yoga* of *Karnendriya* (excessive exposure to loud sounds, usage of ear phones), etc., which are the *Nidanas* of *Karna Roga*.^[6]

So, grossly we can consider the *Nidanas* of Meniere's disease are *Samanya Karna roga nidana*, *Vata Prakopka nidana* and other *Nidanas* like, *Ajirna*, *Agnimandya*, *Vishamashana*, Noise pollution etc. When the person indulges in these *Nidanas* for prolonged period the imbalance of *Tridoshas* occurs specially in *Urdhvajatru Bhaga* of *Shrira*.

The main pathology in Meniere's Disease is distension of endolymphatic system due to increased volume of endolymph. This can result either from increased

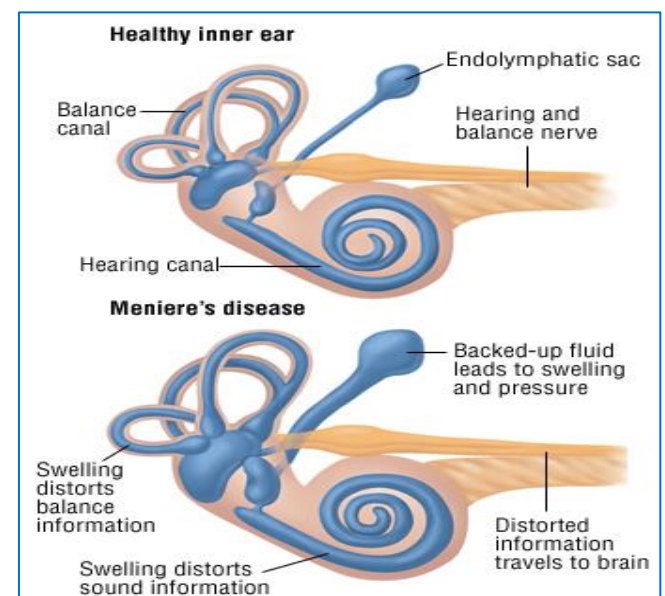
production of endolymph or its faulty absorption or both.

Normally endolymph is secreted by stria vascularis, fills the membranous labyrinth and is absorbed through the endolymphatic sac.

The exact cause of Meniere's disease is not yet known. Various theories have been postulated:

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

Figure 1: Showing Healthy Inner Ear and Inner ear in Meniere's Disease



Samanya Karna Roga Nidanas like *Jalakreedha*, *Pratishyaya*, *Mithya Yoga* of *Shabda* etc. and *Samanya Nidanas* of *Vata Vyadhi Sevana* leads to *Karmakshaya* of *Karnendriya* which is predominant of *Akasha* and *Vayu Tatva*.^[6]

Due to *Nidana Sevana Akasha* and *Vayu Mahabhuta* gets aggravated which causes the vitiation of *Tarpaka Kapha* and *Udana*, *Prana*, *Vyana Vata*. *Nidana Sevana* leads to inflammatory conditions like otalgia, otitis media, otorrhoea, sinusitis, rhinitis etc. these

conditions if left untreated or improperly managed leads to Meniere's disease.

Excessive travelling, exposure to loud sounds, usage of earphones, physical stress, mental stress like peer pressure, and having *Kama, Krodha, Lobha, Chinta, Shoka, Mada, Matsarya* like characters acts as add on factors in the manifestation of Meniere's Disease and these factors makes the condition worse to manage.

Samprapti

In our classics we don't find any references for the Meniere's Disease instead we get references of *Karnanaada, Karnakshweda, Badhira* and *Bhrama* as individual disease. Even though these 4 diseases are separately mentioned; when we look into the *Samprapti* of each disease we get to know that all these are *Vata Dosha Pradhana Vyadhis*.

Karnanaada and *Karnakshweda* are considered for the symptom of Tinnitus. While *Karnanaada* is due to *Vata* only, *Prakupita Vata* in the *Karna* produces symptoms like subjective sensation of hearing different kinds of sounds like *Bheri, Mrudanga, Shanka*, hissing, and sounds of various birds.^[7]

Vata along with *Pitta* causes *Karnakshweda*, due to *Nidana Sevana* like *Shrama, Dhatu Kshaya, Atisevana* of *Kashaya Rasa, Ruksha Ahara Sevana* and *Sheetapadartha Sevana* after *Shirovirechana*, produces symptoms like sounds that resemble the blowing of wind through bamboo.^[8]

Due to *Kevala Vata* or *Vata* along with *Kapha* produces *Badhira*.^[9] *Badhira* can also result from *Dhatukshaya Janya Vata Prakopa* or *Kapha Avaranajanya Vata Prakopa* and also due to *Vayosahaja Vata Prakopa* which leads to *Indriya Karmahani*.

Samprapti of Meniere's Disease can be understood in two ways as *Margavarana* and *Dhatukshaya*. Obstruction to the flow of endolymph and its absorption is the reason behind the pathogenesis of Meniere's Disease.

We can understand it as *Margavarana* may be caused by *Aama* or *Dosha* which hampers the normal flow which leads to defective absorption and causes distension in membranous labyrinth and cochlear membranes too.

Chronic *Margavarana* leads to *Dhatukshaya* i.e., due to obstruction the nourishment to the organs will be hampered, or some other factors responsible for *Dhatukshaya* which leads to degenerative changes in the vestibulo-cochlear nerve thus leading to improper conduction of sound waves and the pressure changes which leads to the manifestation of symptomatology of Meniere's Disease. The prognosis of the Meniere's disease is better in *Margavarana* than *Dhatukshaya*.

Pathology of Meniere's Disease^[10,11]

While endolymphatic hydrops is a characteristic pathologic feature of Meniere's disease, there are exceptions to this rule. There is evidence that hydrops develops as a result of malabsorption of endolymph. This implies dysfunction of the endolymphatic sac and duct, which normally absorb endolymph. In approximately 20% of cases of Meniere's disease, a specific pathologic condition in the temporal bone can be associated as a cause of endolymphatic hydrops. Syphilis, fractures of the temporal bone, otosclerosis, and preceding chronic otitis media are some of the more commonly encountered pathologic conditions so associated. Hypoplasia of the mastoid air-cell system and of periaqueductal air cells, and especially displacement medially but also anteriorly of the sigmoid (lateral) sinus are commonly observed in patients with Meniere's disease.

Evidence is available to substantiate the etiologic bases of Meniere's disease as including multifactorial inheritance. The clinical symptoms and findings result from both chemical and physical mechanisms. Pathogenesis appears to be due to mala absorption of endolymph in the environment of the endolymphatic sac, primarily affecting longitudinal flow. The possible role of such processes as autoimmune reactions and viral inflammation, especially in the endolymphatic sac, should be further investigated in the future.

Laxanas

Cardinal symptoms of Meniere's disease are:

- a) Episodic vertigo
- b) Fluctuating hearing loss

- c) Tinnitus
- d) Sense of fullness or pressure in the involved ear.
- 1. Vertigo:** Vertigo will be episodic and the onset is sudden. Patient gets a feeling of rotation of himself or his environment. Sometimes, there is feeling of "to and fro" or "up and down" movement. Attacks come in clusters, with periods of spontaneous remission lasting for weeks, months or years. Usually, an attack is accompanied by nausea and vomiting with ataxia and nystagmus.
 - 2. Hearing loss:** It usually accompanies vertigo or may precede it. Hearing improves after the attack and may be normal during the periods of remission. This fluctuating nature of hearing loss is quite characteristic of the disease.
- With recurrent attacks, improvement in hearing during remission may not be complete; some hearing loss being added in every attack leading to slow and progressive deterioration of hearing which is permanent.
- Distortion of sound; some patients complain of distorted hearing. A tone of a particular frequency may appear normal in one ear and of higher pitch in the other leading to diplacusis. Music appears discordant.
- Intolerance to loud sounds; Patients of Meniere's disease cannot tolerate amplification of sound due to recruitment phenomenon. They are poor candidates for hearing aids.
- 3. Tinnitus:** It is low pitched roaring type and is aggravated during acute attacks. Sometimes, it has a hissing character. It may persist during periods of remission. Change in intensity and pitch of tinnitus may be the warning symptom of attack.
 - 4. Sense of fullness or pressure: (Aural fullness):** Patient experience sense of fullness in the ears which is fluctuating. It may accompany or precede an attack of vertigo.
 - 5. Other features:** Patients of Meniere's disease often show signs of emotional upset due to apprehension of the repetitive attacks. Earlier, the emotional stress was considered to be the cause of Meniere's disease.

Chikitsa

Meniere's disease the *Chikitsa* is to be planned according to *Vyadhi Avastha, Rogi Bala*. Treatment should be aimed at pacifying *Tridosha*. As it is a *Vata Pradhana Tridoshaja Vyadhi* we can consider *Vatahara Chikitsa* like giving *Snigdha virechana, Vatanulomana* etc. The management of Meniere's disease depends on the *Samprapti* i.e., *Margavarodha* or *Dhatukshaya Avastha*.

And we can emphasis on *Sthana Vishesha Chikitsa* like *Nasya, Shirodhara, Shirobasti, Shiro Abhyanga, Shiropichu, Karnapoorana* etc. the permutation and combinations of the medicaments varies according to the *Yukti* and the predominant *Doshas*.

Chikitsa of Meniere's Disease can be planned by considering *Urdhwajatrugata Vyadhi Chikitsa Siddhanta, Samanya Karnaroga Chikitsa* along with *Vatasya Upakrama* and also considering *Satwavajaya Chikitsa; Nasya, Karnapoorana, Shiropichu, Shiroabhyanga, Shirodhara, Shirobasti, Snigdha Virechana*.

Meniere's Disease being disease of *Kapha Sthana* and *Shiras* and it is a chronic *Vyadhi*. *Shodhana* is the preferred line of treatment like *Snigdha Virechana*, but care should be taken not to aggravate *Vata* during *Shodhana* therapy. *Nasya* is the first line of treatment with prior *Koshtha Shodhana*.

The treatment can be planned from *Amapachana* and correcting the *Agni* by administration of *Shaddharana Churna, Agnitundi Vati, Shunthi Churna, and Haritakyadi Churna, Trikatu Churna* etc. based on *Pradhana Dosh* and condition of the patient. Classical *Virechana* with *Aarohana Krama Snehapana* is advised. *Snehapana* with *Triphala Ghrita, Ashwagandhadi Ghrita, Guggulu Tiktaka Ghrita, Mahatiktaka Ghrita, Sukumara Ghrita, Jeevantyadi Ghrita* etc. and *Virechana* with *Trivrit Lehya, Triphala Kashaya* etc.

In the circumstances where classical *Virechana* is not possible *Sadyo Virechana* by *Gandharva Hastadi Taila, Nimbamruta Eranda Taila* can be adopted.

Samanya Karna Chikitsa also holds good in the management of Meniere's Disease. *Karna Abhyanga,*

Karnapoorana are also preferred in different stages of Meniere's Disease.

Nasya being the gold standard treatment in the management of *Urdhvajatrugata Vikaras* holds good even in the management of Meniere's disease.

In the initial phase *Teekshna*, *Shodhana Nasya* is preferred to relieve *Margavarana* by expelling the morbid *Doshas*. For *Teekshna Nasya Tridosahara Ghrita* or *Taila* are preferred like *Triphala Ghrita*, *Shadbindu Taila*, *Bhringaraja Taila* etc.

Karnapoorana does the *Sthanika Vata Shamana* and nourishes the *Karnendriya*. *Karnapoorana* with *Bilva Taila*, *Kshara Taila*, *Dipika Taila*, *Bhringamalaki Taila*, *Apamarga Kshara Taila*, etc. is beneficial in combating the symptoms of Meniere's Disease.

Satwavajaya Chikitsa also plays an important role as it is a chronic *Vyadhi* which hampers the persons self-esteem which hinders the growth of an individual in the career. Subjects of Meniere's disease are staying withdrawn from society due to the symptoms like vertigo, tinnitus, and hearing loss which are episodic in nature.

DISCUSSION

Meniere's disease is a Psychosomatic disease. This disease affects the persons physical, mental and social condition. Vertigo, tinnitus, sensorineural hearing loss and aural pressure all these symptoms makes the individual feel embarrassed in his personal and social life. Meniere's disease is not a fatal disease yet the consequences like drop attacks, severe vertigo may lead to fatal condition.

It appears to be rare disease but even in developing countries like India due to various changes in lifestyle and inevitable stress in day-to-day life we are encountering the increase in incidence of Meniere's disease in these years.

Diagnosing the Meniere's disease is very tricky and many of the individuals will not be aware about the condition, which makes the disease progress easily, lack of awareness and the triggering factors like Noise pollution, working in factory where continuous

exposure to heat etc. makes it worse and difficult to manage. Hence proper screening and early diagnosis helps to intervene the condition for better results.

Meniere's Disease cannot be correlated directly to any of the disease mentioned in Ayurvedic classics yet we can study the treatment principles of *Karnarogas* like *Karnanaada*, *Karnakshweda*, *Badhirya* and *Bhrama* which helps in the management of Meniere's Disease.

CONCLUSION

Meniere's Disease is a rare yet the incidence of Meniere's is increasing mainly because of erratic life style. It is not a fatal but frightening episode of vertigo may lead to fatal condition. Most affected age group is 30 to 60 years. Frequent screening is necessary to early identification of the subjects. Even though we cannot directly correlate Ayurvedic conditions like *Karnanaada*, *Karnakshweda*, *Badhirya* and *Bhrama* but the *Doshic* involvement can be analysed by knowing these conditions. and the principles of the *Chikitsa* mentioned for *Karnanaada*, *Karnakshweda*, *Badhirya* and *Bhrama* holds good for the management of the Meniere's Disease also.

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