MENIERE'S DISEASE -*what you need to know about it*

1. What is Meniere's disease (MD)?

Meniere's Disease is a disease of the inner ear that causes recurrent episodes of head spinning and some ear related symptoms. It is diagnosed by characteristic features of 2 or more episodes of head spinning (i.e., a rotating and spinning type of vertigo) that lasts for a duration of anything between 15 minutes to 24 hours.

Other symptoms that occur along with head spinning are:

- A hearing loss that usually increases and decreases by itself (fluctuating hearing loss)
- A feeling as if the ear is full or plugged i.e., a blocked sensation / heaviness in the ear
- Tinnitus: a buzzing or ringing sound in the ear that often but not always aggravates prior to or during the episode of head spinning

The disease is believed to be caused by collection of excessive fluid in the inner ear; hence, treatment aims at reducing the secretion of fluid in the inner ear and also draining away excessive fluid from the inner ear.

2. What is vertigo?

'Vertigo' is a vague term used by lay persons to communicate many types of feelings. Vertigo is just a symptom of some underlying disease and many different types of diseases can cause vertigo. In medical parlance vertigo means a feeling of movement when there is actually no movement or a distorted/ inappropriate sense of movement when there is actually some movement. Though it is usually referred to a spinning or rotating sensation of the surroundings or that of the self, vertigo may be of a non-spinning type also when there is a feeling of sliding or bouncing or any sense of non-rotatory movement which is perceived by the subject when actually there is no movement. Though true vertigo is caused by disorders of the vestibular labyrinth, yet vertigo may be caused by non-vestibular causes also.

3. What is the 'vestibular system'?

The vestibular system includes the balance sensors in the inner ear and neural pathways in the brain that are involved in the maintenance of balance, coordination, and posture.

4. What is tinnitus?

Tinnitus is a ringing, buzzing, or other noises that a person feels or hears in the ear(s) or inside the head. Usually it is just a feeling of a sound without there being no actual sound generated (called subjective tinnitus) but sometimes there may be some actual sound generated in the head or in the ears which is due to some abnormal repeated movements of some muscles or due to some

form of abnormal blood flow through an aberrant blood vessel in the head neck region. The latter is called objective tinnitus. In Meniere's disease there is a subjective tinnitus.

5. How is the diagnosis of Meniere's Disease made?

Through a VERY VERY detailed history about the patient's symptoms, by carrying out some clinical tests and then finally by confirming the clinical diagnosis though some specialised and sophisticated investigations. The patient must very clearly answer to the doctor some specific questions detailed below like:

- How frequently do the episodes of vertigo occur?
- The approximate duration of each episode of vertigo with a very detailed description of a typical attack
- The severity of the symptoms
- The full details of the hearing loss and the other ear symptoms like ear fullness and tinnitus and also whether there is any waxing and waning (fluctuations) in the hearing loss, as fluctuations in the ear symptoms is a characteristic feature of Meniere's disease. However, all patients and patients at all stages of Meniere's disease may not be able to appreciate the fluctuations in the ear symptoms. So absence of fluctuation in ear symptom does not negate the diagnosis of Meniere's disease.
- Are there any sudden unprovoked falls and if the falls were accompanied with any loss of consciousness?
- If there is any feeling of ear fullness or blocked feeling inside the ears(s) during the episodes of head spinning?
- Are the vertigo episodes accompanied by headaches?
- Does bright lights or sunlight or loud sounds aggravate / precipitate the symptoms?
- Is there any history of headaches / motion sickness and / or does anybody in the family have migraine or similar symptoms of recurrent episodes of head spinning? Anyone in your family have similar symptoms?

A detailed diary of the vertigo episodes with full details of any precipitating factors, the duration of the symptoms, any accompanying features and other relevant details is a big help to the doctor in diagnosing the disease

6. What tests are likely to be ordered by the doctor for confirming the diagnosis?

The doctor will require the following tests to be done from an authentic neurotology clinic for confirming the diagnosis; an array of tests related to the cochlea (audiological tests) and the vestibular labyrinths (vestibulometric tests) are required as Meniere's disease cannot be diagnosed by one single stand-alone test. Meniere's disease is diagnosed by combining the findings from the detailed history, that of the clinical findings, and the findings of the audiological and vestibulometric investigations:-

Audiogram : This is a hearing test which if properly done takes at least 25 minutes. In the early stages Meniere's disease is diagnosed by some specific characters of the audiogram. A sensorineural deafness, cochlear in type with more deafness in the lower frequencies is strongly indicative of a Meniere's disease. Some special tests to assess which part of the ear is defective (the cochlea or the portion deeper to it) and a test called glycerol test s also done as a part of the

audiometry test. The glycerol test evaluates whether drying up the fluid in the inner ear improves hearing or not.

Electrocochleography: Electrocochleography measures the electrical processing of the sound in the inner ear after the sound has been converted into electricity in the inner ear. There is a peculiarity of this electrical response in the inner ear in Meniere's disease and the electrocochleographic response in Meniere's disease is usually very characteristic. It is a step ahead in the diagnosis of Meniere's disease.

BERA test is also done in patients of suspected Meniere's disease to rule out the possibility of any tumour in the nerve of hearing and balance which is a sinister, life threatening disease but presents with symptoms some of which are very similar to Meniere's disease

Video- or electro nystagmogram (VNG/ ENG) : This rather complex investigation evaluates a part of the balance organ inside the ear and some portions of the connections of the balance organ with the structure in the brain that induce eye movements The connections of the balance organ inside the ear (vestibular labyrinth) with the structures in the brain that induce eye movements is called the oculomotor system. Evaluating the integrity of the oculomotor system is a very important part of vestibulometry

Other tests of vestibular function viz. cervical and ocular VEMPS, the VHIT (video head impulse test), SVV test (subjective visual vertical test) assess the extent of damage to the inner ear induced by the Meniere's disease and some other tests like Stabilometry / Posturography assess the postural stability of the patient. Each test has a specific role in determining the extent of damage caused in the inner ear by the disease.

Magnetic resonance imaging (MRI) of the brain: A process of picturising the structures inside the brain. Intravenous administration of a chemical called contrast is often required to improve the resolution of the pictures (called images in medical parlance). The machine contains powerful magnets, so patients with stainless-steel or non-titanium implants may not be able to have MRI. Other than injecting the contrast dye, this MRI of the brain is a non-invasive painless process but sometimes a bit uncomfortable in a few patients who are claustrophobic. A CT scan may be done but it is not as informative as the MRI

7. a) What are the treatment options for this disease?

If treated judiciously Meniere's disease can be controlled very well and most patients with Meniere's disease lead a completely normal life, tough minor episodes of vertigo cannot be totally ruled out merely by medical treatment. Treatment for Meniere's Disease depends on the status of the disease when first seen by the neurotologist. A doctor who specialises in treatment of vertigo and ear related disorders called a neurotologist is the best person to decide on the treatment regime. The treatment ranges from some dietary modifications (which are not very effective) to very aggressive forms of treatment like surgically destroying the functionality of the affected ear called labyrinthectomy. In between there are many other options like use of DIURETICS which drain away excess fluid from the inner ear, to injecting the ear with some medicines like steroids and / or gentamicin. Some forms of physical therapy called vestibular physiotherapy is also used in patients who have documentable damage to the balance organ, but physical therapy does NOT reduce the number of vertigo episodes, it helps in restoring and improving balance.

b) Does BETAHISTINE (sold as Vertin / Betavert /Serc) cure Meniere's disease?

NO, not at all. Betahistine is a widely promoted anti-vertigo drug very aggressively marketed by multinational companies with very deep pockets. The drug is not a FDA approved drug and is not approved for sale in the US. Authentic scientific studies have shown that Betahistine is nothing more than a placebo. This is an FAQ for lay persons and hence scientific references are not given here but the interested reader may find out about it. The drug has a very high fast pass effect i.e., it is majorly metabolised before it reaches the targeted site of action in the human body its' mechanism of action is not known with certainty.

8. Is there anything that the patient can do to decrease symptoms?

The course of Meniere's disease is unpredictable, but is can be controlled pretty well by an astute neurotologist with the right treatment. Following the doctor's advice meticulously is all that the patient can do. Nevertheless, fulminant Meniere's disease can rarely happen in spite of the most judicious management as well as very precise patient compliance. In such cases which are fortunately very rare, surgical treatment is the only option. But as waxing and waning is a characteristic feature of the disease, the bad phases usually are temporary and the intensity and frequency of the attacks regress over time in most, if not in all cases.

9. Can Meniere's Disease affect the patient's quality of life?

Meniere's Disease can very adversely modify the patient's quality of life. The recurrent episodes of unprovoked, unpredictable vertigo attacks, as well as the hearing loss and the persistent apprehension of an impending attack may make the patient feel disgusted with life and this may even lead to anxiety and depression. A psychiatric management is necessary in all such cases.

10. What is the natural history of MD?

- The disease most commonly affects patients between 40 and 70 years of age but much younger persons can also be affected
- The episodes of severe head spinning, nausea-vomiting and sudden changes in the ear symptoms are sporadic and unpredictable.
- All the vestibular and cochlear symptoms of the patient usually deteriorate with time but in a lot many patients the symptoms regress after a few years and the patient may have absolutely symptom free phases for several years or even decades with no vertigo episodes and no deterioration of the ear symptoms. But the symptoms of the disease may reappear again after several years in many such patients. If the affected ear becomes absolutely insensitive and non-functional (severe loss of auditory and vestibular function), the symptoms do not recur
- In about 20-25% cases the other ear also gets affected by Meniere's disease, hence a hearing test must be done in all visits of the patient to the neurotologis's clinic. Low frequency cochlear type of hearing loss is one of the first recognisable features of the disease
- Though Meniere's disease is not a sinister or life threatening disease, it does induce a very poor quality of life in certain individuals.

- Unprovoked sudden falls without loss of consciousness may occur in some patients in the advanced stages of the disease. This is called Tumarkin's crisis and is a dreaded sequel in some patients.

11. What educational sites are available for knowing more about Meniere's disease from the patient's perspective?

Yes in this digital age there are numerous such sites but the patient or are givers should choose such sites with discretion. It is best to very strictly follow the doctor's advice but be educated about the disease from the numerous self-help groups on Meniere's disease. Patients should be encouraged to join a support group to gain knowledge, resources, and support from others. Some authentic sites for patient education are e.g.,

- https://vestibular.org/finding-help-support
- http://menieresresources.org/
- http://www.menieres.org.uk/
- https://menieresresearchaustralia.org/
- https://hearinghealthfoundation.org/

12. What are he known triggers for an attack of Meniere's disease?

There are no authenticated and well established triggers hat have been identified as specific triggers of Meniere's disease. Since many patients of Meniere's disease have a migraine diathesis, avoidance of Migraine triggers have been found to reduce Meniere's attacks in a sizable number of patients. The reader is referred to the DOS AND DONTS IN PATIENTS OF VESTIBULAR MIGRAINE as enumerated in the website of Dr Anirban Biswas, **www.vergoclinic.in**

13. Is common salt (sodium chloride) a trigger for Meniere's disease?

Salt restriction is a much touted preventive for Meniere's disease but not scientifically authenticated and too much salt restriction can precipitate hyponatremia which is a medical emergency.

14. Does mental stress trigger attacks of vertigo in Meniere's disease or cause Meniere's disease?

It is difficult to give a logical answer to this. In many cases of Meniere' disease there is a migraine in the background and as per current thinking on Meniere's disease, Migraine plays a role in the causation of Meniere's disease at least in some cases. Migraine is triggered by mental stress; hence n an individual where the Meniere's disease is due to the migraine diathesis, stress may play a role in triggering attacks of Meniere's disease. But otherwise stress is not expected to induce any collection of excessive fluids in the inner ear and cause attacks of Meniere's disease. However, since the exact cause of how Meniere's disease is brought about and why only certain people have this disease is not known with certainty now, many clinicians routinely advice their patients of Meniere's disease to maintain a stress-free life (in case that is ever possible!)

15. What is the dietary recommendation for preventing attacks of Meniere's disease?

Since reducing caffeine consumption has been shown to decrease Meniere's attacks in some (not all) patients, reduction of caffeine is worth a try; very high salt intake is also not recommended though salt free diet is also never advisable. Reducing intake of alcohol and nicotine has been found to be beneficial in some patients of Meniere's disease. Foods that trigger migraine is also best avoided as Meniere's disease is in many cases linked to migraine. For the foods known to trigger migraine, please see the **DOS AND DONTS IN PATIENTS OF VESTIBULAR MIGRAINE** as enumerated in the website of Dr Anirban Biswas www.vergoclinic.in.

16. Are any specific lifestyle changes necessary to prevent attacks of Meniere's disease?

Nothing is known with certainty. But as in many other diseases, maintaining a regulated and relaxed, stress-free life style, with a decent amount of physical exercise and ensuring a good sleep is recommended. But how exactly a regulated life style would ward off an attack of Meniere's disease is conjectural at best. Avoiding migraine triggers s explained above is recommended. Excessive drinking, late night partying, having very spicy and salt laden foods is best avoided.

DISCLAIMER:- The answers to the frequently asked questions on Meniere's disease is the personal opinion of Dr Anirban Biswas as understood by him through long years of practice in neurotology extending to over three and half decades and as gathered from different publications related to Meniere's disease that he has come across. The reader is hereby advised to seek his own doctor's opinion and follow the advice of the treating physician as regards the diagnosis and management of Meniere's disease.