CONCEPT OF VERTIGO IN GERIATRICS.

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ABSTRACT

Vertigo is a symptom and not a disease, and it accounts for about 5% of all consultations with a general practioner and 10-15% with an otorhinolaryngologist.

Elderly patients complaining vertigo due to so many reasons. Three systems in the body the visual, vestibular & proprioceptive act in concern to maintain stable orientation.

In this mini review, enlighten the variety of diseases which causes vertigo, here also focused on pathophysiology and key features of these disorders which causes imbalance which involves otological problems, Visual problems, Locomotive system of disturbance (proprioceptive system), CNS,Cardiovascular system.

Peripheral causes are those lesions of the end organs and vestibular nerve, and it includes Menieres disease, Labyrinthitis, Acoustic neuron, ototoxic vertigo, Syphilis(vertigo with deafness) and Benign paroxysmal positional vertigo (BPPV), Vestibular neuronitis(vertigo without deafness).Central causes are lesions of brainstem and central connections, posterior inferior cerebellar artery syndrome, vertebrobasilar insufficiency, Basilar artery migraine,Tumours of the brainstem and fourth ventricle,Epilepsy,Cervical vertigo.

Causes of vertigo in older people

<table>
<thead>
<tr>
<th>System</th>
<th>Contribution (Davis 1994)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Vestibular (otologic)</td>
<td>56</td>
</tr>
<tr>
<td>Brain stem/ cerebellum (central)</td>
<td>22</td>
</tr>
<tr>
<td>Proprioceptive (Peripheral neuropathy)</td>
<td>7</td>
</tr>
<tr>
<td>Visual</td>
<td>1</td>
</tr>
<tr>
<td>Psychological</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>14</td>
</tr>
</tbody>
</table>

Keywords: Dizziness, presbystasis, presbyequillibrium

INTRODUCTION-

Vertigo is a very distressing symptom not only for patients but also for the treating doctors; one should treat the patient according to its causes.
Vertigo can occur from disorders of any of the three systems, vestibular, visual, and somatosensory. Depending upon the cause, Vertigo classified into central and peripheral vertigo. Peripheral vertigo occurs as the result of a disturbance in the balance organs of the inner ear, tiny organs in the labyrinth of the inner ear enables messages to be sent to the brain in response to gravity and central vertigo is due to disturbance in one or more parts of the brain, known as sensory nerve pathways, the brainstem and the cerebellum.

Increased circulatory resistance and increased blood viscosity leads to reduced microcirculation and reduced blood supply of brain and labyrinth leading to vestibular function and vertigo. Increased circulatory resistance takes place as red blood cells loss their flexibility due to entry of calcium ion into them. Dimensions of blood vessels through which RBCs run is 5 micron while the size of RBC is 8 micron. Bigger size RBCs can run freely through small sized blood vessels because they are highly flexible. if calcium ion enters into RBC it makes them rigid.

The cause is usually multifactorial and contributed by the following,

Degenerative changes occur throughout the vestibular apparatus, loss of hair cells, otoconia, nerve fibres and purkinje cells (cerebellum). Degenerative changes also affect the visual and proprioceptive inputs, Degenerative changes of the CNS, Such as brain stem and cerebellar atrophy and white matter changes.

Coexisting medical condition such as Parkinson’s disease or Diabetes mellitus with peripheral neuropathy. Medication used for co morbid condition may also cause dizziness. Vertigo can lead to problems with balance, which in turns, results in falls with head injuries in geriatric patients.

**AIM**

To create the awareness and care for vertigo related disorders which is possible only if the diagnosis is correct and for that purpose the cause of the disease is necessary

To provide skill needed to address the vertigo to geriatric patients

To prove the pathophisiology of vertigo according to its cause.

**OBJECTIVES**

To prevent the further attacks of vertigo.

To preserve hearing and vestibular function in geriatric patients by early diagnosis with the help of etiology.

**MATERIALS-**

All the references collected from modern literature.

**METHODS**

The significant diseases which causes vertigo in elderly are peripheral vestibular disorders namely Menieres disease, benign paroxysmal positional vertigo, Vestibularneuronitis, labyrinthitis.

**Menieres disease**

Typically has triad of attacks of vertigo fluctuating sensoneural hearing loss and fullness in the ear. The onset of vertigo is
sudden and typically lasting from ½ to 24 hours and many occur per week or separated by years. The course is unpredictable but generally progressive and it often becomes bilateral.

Menieres triad-

<table>
<thead>
<tr>
<th>Hearing loss</th>
<th>Fluctuant, worsens during vertigo spells an is associated with aural fullness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tinnitus</td>
<td>Fluctuates, can have a roaring quality anis louder during vertigo spells</td>
</tr>
<tr>
<td>Vertigo</td>
<td>Are usually hours in duration, severe, and associated with vomiting.</td>
</tr>
</tbody>
</table>

At least 2 definitive episodes of vertigo of at least 20 minutes duration must have occurred to make the diagnosis of Menieres disease.

Benign paroxysmal positional vertigo-

It is the most common cause of vertigo; it is characterized by vertigo when the head is placed in the certain critical position. There is no hearing loss or other neurological symptoms. Disease is caused by a disorder of posterior semicircular canal though many patients have history of head trauma and ear infection. It has been demonstrated that otoconial debris, consisting of crystals of calcium carbonate, is released from the degenerating macula of the utricle and floats freely in the endolymph. When it settles on the cupolas of posterior semicircular canal in a critical head position, it causes displacement of the cupula and vertigo.

The characteristic of the nystagmus that is diagnostic of Benign paroxysmal positional vertigo is that it is latent, starts after 10-15 seconds short lasting lasts for about 15-20 seconds.

Vestibular Neuronitis-

It is characterized by the severe vertigo of sudden onset with no cochlear symptoms. Attacks may last from a few days to 2 or 3 weeks. It is thought to occur due to virus that attacks vestibular ganglion.

Labyrinthitis-

There is severe vertigo and sensoneural hearing loss, with severe nausea and vomiting. Nystagmus is seen to the opposite side due to destruction of the affected labyrinth. Labyrinthitis is seen in unsafe type of chronic suppurative otitis media.

Central vestibular disorders-

Poster inferiorly cerebella artery-

There is thrombosis of the posteriorinferior cerebella artery cuts of the blood supply to the lateral medullar area, there is violent vertigo along with diplopia, dysphasias, hoarseness of voice, Horner’s syndrome, sensory loss on ipsilateral side of the face and contra lateral side of the body and ataxia.

Vertebrobasilar insufficiency-

It is a common cause of vertigo in patients over the age of 50 years. There is transient decrease in the cerebral blood flow. Common cause is atherosclerosis. It may precipitated by hypotension or neck movements when cervical osteophytes press on the vertebral arteries during rotation and extension of the head. Vertigo is sudden onset, lasts for several minutes and is associated with nausea and vomiting.

Neurological symptoms such as visual disturbance, drop attacks diplopia, hemianopia, dysphasias, hemi paresis due to ischemia of the other areas of brain accompanies vertigo.
DISCUSSION-

Discussion-

Majority of the cases in geriatric are Meneire's disease, Benign paroxysmal positional vertigo and Vertebrobasilar insufficiency.

Vertigo due to central cause is relatively less common than otological; impairment of circular system can affect the inner ear, which is one of the pathophysiological mechanisms. In peripheral vertigo aural symptoms are seen, just as deafness and tinnitus. In central vertigo neurological factors are present such as diplopia.

CONCLUSION:

Appropriate proper knowledge of vertigo is necessary, episodes of vertigo may vary in its intensity and duration which ranges from seconds to days and on this basis, one should know the causes which are responsible for vertigo. One should must focus as if vertigo is associated with or not auditory system. Most commonly seen vertigo is peripheral in origin (otological)

And less common seen are Visual and psychological in origin.

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