

# Meniere's Disease in the Elderly

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## KEYWORDS

- Elderly • Meniere's disease • Drop attacks • Otolith organs
- Endolymphatic hydrops

Dizziness and vertigo are common complaints in the elderly population. However, these symptoms may be a result of multiple causes, such as cardiovascular disease, secondary effects of medication, and pathologies of the central nervous system, as well as inner ear diseases.

Among a population of 3427 patients 70 years of age or older, Katsarkas<sup>1</sup> found that 55.30% of them suffered from vertigo caused by an inner ear disease such as positional vertigo (47.20%), vestibular neuronitis (4.07%), and Meniere's disease (4.07%).

The typical criteria of Meniere's disease include the onset of recurrent attacks of vertigo lasting for a few hours with nausea and vomiting. The patients also complain of fluctuating hearing loss, an intermittent sensation of fullness, and a transient or permanent tinnitus within the impaired ear. Drop attacks, consisting of sudden falls without loss of consciousness, first described by Tumarkin,<sup>2</sup> can also occur in patients suffering from Meniere's disease. They are attributed to a sudden dysfunction of the otolithic organs and are also named "otolithic catastrophe of Tumarkin." Depending on the studies, the incidence of Meniere's disease ranges from 10 to 1000 per 100,000 patients of the ear, nose, and throat population.<sup>3-6</sup>

Meniere's disease usually begins in adults ranging in age from 20 to 60 years.<sup>7-9</sup> It is rarely described in children, who represent about 1% of Meniere's patients.<sup>4,10-14</sup> However, that the real incidence of Meniere's disease focuses on older patients was first reported by Ballester and colleagues.<sup>6</sup> They found that among 432 patients suffering from Meniere's disease, 15.3% were 65 years or older. In a recent retrospective study about the origin of vertigo and dizziness in 677 patients older than 65, Üneri and Polat<sup>15</sup> found a similar percentage of 12.5% of patients suffering from Meniere's disease. These 2 studies tend to demonstrate that Meniere's disease occurs more

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frequently than previously thought in patients older than 65. Although it seems that both sexes are almost equally affected in adult patients,<sup>8</sup> Ballester and colleagues<sup>6</sup> described a strong preponderance in women, with a sex ratio of 0.43 in their patients. This sex preponderance was also reported in the study of Üneri and Polat.<sup>15</sup> That women are more afflicted in this age range might be directly related to their longer life span compared with that of men. Ballester and colleagues<sup>6</sup> distinguished 2 different groups of patients in their study. One group of patients from 65 to 75 years suffered from a reactivation of longstanding Meniere's disease, which represented 40.9% of the cohort, and a second group of patients demonstrated the first manifestations of Meniere's disease occurring between the ages of 65 and 82 years. The percentage of this "de novo" Meniere's disease reaches 59.1% of all patients. In both groups, the clinical manifestations were similar to the classic vertigo spells lasting from minutes to hours, with nausea and sometimes with vomiting as well as the sensorineural hearing loss with fluctuation of hearing and tinnitus. However, the drop attacks were more frequent in the "de novo" group, occurring in 25.6% of patients compared with 11.1% in patients with a reactivation of their longstanding Meniere's disease. This study underlined 2 interesting facts: the preponderance of women and the high frequency of drop attacks in patients older than 65.

In the general population of Meniere's disease with patients younger than 65 years, the incidence of drop attacks varies between 5% and 10%<sup>16-18</sup>; however, Kentala and colleagues<sup>19</sup> reported an extremely high incidence of drop attacks in 72% of their patients with Meniere's disease aged from 17 to 79 years. In this study, the mean age at onset of the disease was 44 years, and they classified the drop attacks in 3 degrees (mild, moderate, severe) depending on the ensuing daily disturbances. Nine percent of the patients suffered severe disturbances. This percentage is therefore consistent with those in the literature with studies performed in the general population of patients with Meniere's disease. Kentala and colleagues<sup>19</sup> explained this high prevalence of drop attacks was because patients would probably not have spontaneously reported that the drop attacks caused mild or moderate disability if they had not been specifically asked. Thus, compared with the literature data, the group of patients with "de novo" Meniere's disease in the elderly population showed a higher incidence of 25.6% of drop attacks.

Feelings of erroneous movements such as the sensation of being pushed from behind or of a sudden movement of the environment are frequently described by patients with drop attacks. These symptoms are attributed to a dysfunction of the otolithic organs that measure the linear accelerations in the horizontal and vertical axes as well as the gravitational vector. Several pathophysiological mechanisms are thought to be implicated in the otolithic catastrophe of Tumarkin: sudden shift of the utricular macula, sudden changes in the endolymphatic fluid pressure, and sudden electrolyte changes secondary to the rupture of the membrane labyrinth. Thus, the inappropriate stimulation of the otolithic organs might generate a failure of the vestibulospinal reflex with the loss of postural tonus and, consequently, the falling.<sup>16,19-22</sup> To explain the higher incidence of drop attacks, particularly in patients with "de novo" Meniere's disease, Ballester and colleagues<sup>6</sup> assumed that it could be linked to a decreased compliance of the otolithic structures with a lower tolerance of the hydrops, owing to a limited capacity of the endolymphatic compartment distension. They also took into account the progressive decline of postural control and gait and visual difficulties of the elderly as factors able to influence the onset of falls.

However, based on several recently published articles, new hypotheses might be proposed to explain these 2 characteristics within this specific population of patients, ie, the high incidence of drop attacks and the prevalence in women.

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