Betahistine or Cinnarizine for Treatment of Meniere’s Disease

Jasminka Djelilovic-Vranic1, Azra Alajbegovic1, Merita Tiric-Campara1, Aida Volic2, Zehra Sarajlic2, Eldina Osmanagic2, Ljubica Todorovic2, Omer Beslagic1
Neurology Clinic, Clinical Center of Sarajevo University, Bosnia and Herzegovina1
Clinic of Otorhinolaryngology, Clinical Center of Sarajevo University, Bosnia and Herzegovina2
Radiology Diagnostic Center, Private Practice, Sarajevo, Bosnia and Herzegovina3

INTRODUCTION: Meniere’s disease is a condition with sudden attacks of vertigo with nausea and vomiting accompanied by loss of hearing and buzzing sensation in the ears, most commonly unilateral. The exact cause of the disease is unknown. Betahistine is the analogue of histamine with weaker agonistic effect on histamine H1 receptors and stronger effect on histamine H3 receptors, while Cinnarizine has more effective effect on H1 receptors. Goal: The aim is to determine which drug is more effective in the treatment of Meniere’s disease Betahistine or Cinnarizine. Material and methods: This study evaluates the effectiveness of Betahistine in 37 patients with the Meniere’s syndrome accompanied by classic triad of symptoms treated in hospital conditions and Cinnarizine effect in 36 patients with a less severe clinical picture, which were treated as outpatients. To all patients were conducted laboratory tests, brain CAT (to exclude possible expansive process, MS or stroke) and TCD in order to eliminate any possible circulatory disturbances in VB basin. Group with classic Meniere’s syndrome was treated at a dose of Betahistine of 3x16mg and followed 8 weeks, while the second group was treated with Cinnarizine at a dose of 2x75mg and also followed for 8 weeks. Conclusions: Already after one month of therapy was noticed better effect in case of Betahistine in terms of symptoms reduction compared to the Cinnarizine effect. Key words: Betahistine, Cinnarizine, Meniere’s disease

Corresponding author: Jasminka Djelilovic-Vranic, Neurology Clinic, Clinical center of Sarajevo University, Bolnicka 25, 71000 Sarajevo, Bosnia and Herzegovina. E-mail: jasminka000@bih.net.ba

1. INTRODUCTION
Meniere’s syndrome is a condition characterized by the appearance of sudden attacks of vertigo, with more or less marked loss of hearing and sense of noises in the ears, usually unilateral, with the unpleasant feeling of fullness of sound on the side that is affected. Previously known as idiopathic endolymphatic hydrops it is noticed that the condition is related to the increased quantity of endolymph. During attacks of vertigo that can last for several days and acts exhausting, patients are quite incompetent to carry out normal daily and other social activities. Nausea and drowsiness are common companions of this condition, while the sense of imbalance between free and non-functional-painful sensations often creates a depressed mood because the quality of life is often severely altered, lasting for shorter or longer periods depending on the treatment outcome (1). The disease is usually unilateral, only one third occurs bilaterally. If both ears are affected the disease usually occurs in the second ear during long and less successful treatment in one ear. Meniere’s disease usually begins between the age of 25 and 50 years, while men and women are equally affected.

Incidence varies from 200 cases per 100,000 inhabitants in the USA to about 46 per 100,000 inhabitants in Scandinavia making Meniere’s disease four times more frequent than otosclerosis and if left untreated can lead to surgical intervention in 25% of cases (2).

Although the cause of the Meniere’s disease remains unclear it is considered that it is the result of a disturbed balance between production and endolymph resorption, which leads to rupture of the membranes and mixing of endolymph and perilymph, which can cause destruction of the labyrinth and an increase in the occurrence of deafness and vertigo. Besides this opinion recent findings suggest that ganglionitis contributes to Meniere’s disease (3).
ment of Meniere's disease: Betahistine or Cinnarizine

3. MATERIAL AND METHODS

In this paper we analyzed over a two year period, the group of patients with Meniere's disease, with a classic triad of symptoms and very severe symptoms who are treated in hospital conditions for a few days and later on outpatient basis and a group of patients with milder symptoms of Meniere's disease in the same time period which have been treated as outpatients.

Besides history, physical and neurological examinations to all patients was done laboratory tests with reference to the parameters of anemia, the blood pressure values, review of intracerebral hemodynamics (TCD = first day of hospital stay and to hospitalized patients brain CT) in order to exclude the expanding process, multiple sclerosis, stroke or CVI. Patients who were treated in hospital conditions had taken as therapy Betahistine in a dose of 3x16mg a day during hospitalization and subsequently for a total of 8 weeks, while the second group of outpatients with milder symptoms was taking Cinnarizine 2x75mg a day for 8 weeks, without other medications.

4. RESULTS

During the two-year period in a group of patients who were treated for more pronounced symptoms in hospital conditions, there were a total of 37 patients (20 male and 17 female) aged 31-54 years and in the second group—treated as outpatients with milder symptoms, there were 36 patients, (17 male and 19 female) aged 27-49 years.

Unilateral disease in group of hospital patients was present in 29 cases (78.23%) and in 8 cases (21.77%) bilateral from which 5 (13.15%) of these had previously similar problems in the other ear (all in the age older than 50 years), while in the group treated on outpatient basis, bilateral disease was present in only 2 (5.55%) patients and 34 (94.45%) had unilateral form in this group, no one with previous disease episodes.

Anemia was present in one case from the first group (2.70%), low blood pressure in 2 patients (5.40%), and in the control group of outpatients there was no such cases. Brain CT showed previous ischemic stroke 1 case (2.70%) and in 1 post contusion focal point (2.70%), TCD method in the group of hospital treated patients in 2 cases (5.40%) verified insufficient intracerebral circulation and in the control group 5 (13.88%) cases had disturbed cerebral circulation only in provocation position of the head and neck.

In the group of patients treated with Betahistine, after seven days of drug administration there was a reduction of vertigo and cessation of vomiting and nausea, with still residual noise tinnitus and hearing impairment, while in the group of patients treated by Cinnarizine, disturbances in the sense of dizziness still persisted in an attenuated form with occasional nausea. Further follow-up after 8 weeks showed that patients who used Betahistine had no vertigo (only remained less severe tinnitus with hearing loss in terms of hearing from those who have previously had episode of Meniere's disease and on the side where the state first began) while in the group treated with Cinnarizine vertigo was still present occasionally.

5. DISCUSSION

Meniere's disease is a relatively common ENT and neurological disease and due to its clinical manifestation and often dramatic symptoms requiring emergency treatment. In our two-year study we followed two groups of patients. The first group, which was treated in hospital conditions included patients with more pronounced symptoms and it consisted of 37 patients, 20 men and 17 women and the second group of 36 patients, 17 men and 19 women which had with milder symptoms and they are treated as outpatients, aged 27-49 years. Our research has shown that Meniere's disease occurs equally in both sexes.

Similar studies on the difference in the gender distribution of Meniere's disease have been done worldwide. So Celestino and Ralli in their 13-year study that deals with the incidence of Meniere's disease in Italy reported that it did not show a significant difference in the incidence between sexes (1).

Wladislovsky-Waserman P, Facer GW, Mokri B and Kurland LT in the study, which lasted for 30 years, have come to the same conclusion. Specifically, their study also showed that there are no significant gender differences among patients with Meniere's disease (2).

In our study, patients from hospital treated group were aged between 31 and 54 years, while the age range of subjects in other group was 27-49 years. A study by Saeed S and Penney S has shown that the disease is most common in the fourth decade life and that it very rarely occurs after the age of 60 (3).
fact that Meniere’s disease usually occurs in relatively younger people at 30-plus years of age. If the first episode of vertigo occurred after the age of 70 it is most likely a case of some other disease (4).

The data from our study, which showed that the disease is most common in younger and middle-aged people, agree with the data from these studies. In fact, the oldest participant from the first group in our study had 54 years and the second 49 years, while others authors state that the disease is extremely rare among those older than 60 or 70 years (3,4).

In his presentation, Jonathan Hazell presented the fact that the disease usually begins unilaterally and that after a certain time can affect the other ear (4). This was confirmed in our study, where in the first group 29 patients had unilateral disease and 8 bilateral, while in the second group 34 patients had unilateral disease and only 2 respondents expressed bilateral disease.

Our research has shown that in a group of patients treated with Betahistine, after 2 weeks of drug administration there was a reduction of vertigo and cessation of vomiting and nausea, with still residual noise tinnitus and hearing impairment. On the other hand, in the group of patients treated with Cinnarizine disturbances in the sense of vertigo still persisted in a milder form with occasional nausea. In further follow-up, after 8 weeks, subjects who used Betahistine did not have vertigo (only remained less severe tinnitus with hearing loss in terms of hearing from those who have previously Meniere’s disease episode and on the side where the condition first occurred). In the group treated by Cinnarizine vertigo was still present occasionally.

Authors from France, Belgium and the Czech Republic, Michel Lacour, Paul H van de Heyning, Miroslav Novotny and Brahim Tighilet, in a double-blind study in 2007 came to the conclusion that the frequency of vertiginous disorders in patients treated with Betahistine was significantly reduced in comparison to the group who used the placebo. The improvement was significant after 15-days of therapy and included supporting and improving symptoms such as tinnitus, pressure in the ears, nausea and vomiting. Physical ability scores in patients who were using Betahistine therapy was 74%, while for patients who used placebo was only 27% (5).

Deering and colleagues in 1986 conducted the study in which a total of 88 patients participated. Patients in the periods of 3 months used Betahistine and Cinnarizine. Six-month study was completed by 46 patients. The main reason for leaving the study is the improvement that occurred in patients after treatment with Betahistine. Before the treatment the frequency of attacks was 9 attacks per month and after treatment it was decreased to 5 attacks per month. Their duration also decreased from 1.3 hours to 0.5 hours on the average. This research also indicated that Betahistine is significantly better therapy than Cinnarizine (6). From the above data, it is apparent that the results of our study agree with the results that were reached by the authors in the studies from 1986 and 2007.

Like any therapy also Betahistine produces some side effects. Among the most common side effects are the following: hypersensitivity and allergic reactions, digestive disorders, disorders of the nervous system (seizures, daytime sleepiness, confusion, and hallucinations), low blood pressure, abnormal heart rhythm, headaches, liver problems and other (7). On the other hand are Cinnarizine side effects: dry mouth, mild headaches, loss or weight gain, tremor, yellow discoloration of the eyes or the skin, severe skin reactions and rigidity in the elderly persons, allergic reactions and authors from Spain even listed blepharospasm (8).

Gordon and colleagues from Israel have made a study in 2001 that included the Cinnarizine and referred to its possible side effects. This study showed that Cinnarizine had no significant adverse effects (9).

In our study, anemia was present in one of the first group patients, lowered blood pressure in 2 patients while the outpatients group had no such effects. Brain CT showed previous ischemic stroke in one patient and in 1 post confusion focus. By TCD method in the group of hospital treated patients in two respondents was verified intra-cerebral insufficient circulation and in the control group 13% of the subjects had disturbances in cerebral circulation only in provocation position of the head and neck. From these data it can be concluded that the patients tolerated well the applied therapy and that they did not show the usual side effects of the Betahistine and Cinnarizine treatment (9, 10, 11).

6. CONCLUSIONS

- Meniere’s disease occurs in young and middle-aged, equally in men and women.
- Betahistine more rapidly reduce symptoms and contribute to a better functioning compared to Cinnarizine
- Early treatment with Betahistine which is applied for sufficient time prevents and relieves chronic disease complications.
- Advantage in the treatment of Meniere’s disease should be given Betahistine.

REFERENCES