39 - PERFORMANCE PHYSIOTHERAPIST IN CHRONIC PERIPHERAL VESTIBULAR DYSFUNCTION-CASE STUDY

ELZIRA D'SANTIAGO MARCIANO,
JASIARA CARLA DE OLIVEIRA,
MANAIRA SATIL SILVA,
FERNANDA GRANJA FERREIRA MELO,
LAILA CRISTINA MOREIRA DAMAZIO.
UNIVERSIDADE PRESIDENTE ANTONIO CARLOS
BARBACENA - MINAS GERAIS- BRASIL
elzira_santiago@yahoo.com.br

INTRODUCTION

According Ganança (1994), the information from the peripheral auditory system (outer ear, middle ear, including cochlea), vision and somatocepção, which are the peripheral sensory receptors related to spatial orientation is that they are responsible for balancing human body. The information is organized and processed in the central nervous system, where it handles the control and motor planning for the motor plays involving gait and posture, can render correctly.

Disorders such as inflammatory, infectious, traumatic, degenerative, neoplastic, autoimmune, genetic, vascular, hormonal, metabolic, psychogenic, iatrogenic and posture, can compromise the proper functioning of the peripheral vestibular system (labyrinth and posterior vestibular nerves) and also the central vestibular system contained in the vestibular nuclei, pathways and connections in the central nervous system (Guyton, 1997).

The worsening quality of life, compromising their professional activities, domestic and social, can often be caused by the intensity, duration and prevalence of clinical manifestations accompanying vestibular (SANTOS, 2001). Research has been carried out in the field to try to get otoneurology relief of symptoms of vestibular disorders. This is possible by restoring the body balance, preventing the occurrence or recurrence of clinical vestibular and reintegration to daily activities with as soon as possible (ALBERNAZ, 1994).

Also new diagnostic methods are developed and refined to improve the diagnosis and make it as accurate and as early as possible (GANANÇA, 1999). Were Cawthorne (1944) and Cooksey (1946), who proposed the first time, a rehabilitation program exam, which revealed that individuals who performed the exercises they put in place immediately after a unilateral vestibular lesion, recovered better and faster. Later, in 1963, a team led by J. Boussens and CH Briand, presented a protocol for the rehabilitation of balance and vestibular lesions.

In 1968, Brian and It is argued that repetition of the situations that triggered the symptoms, forcing the central mechanisms to adapt. Whereas a pioneer in this technique, M. Norré, has proven its effectiveness in developing the protocol of vestibular habituation training (VHT) for the vertigo of peripheral origin (Norris, 1988). Rehabilitation of body balance this is an exercise program aimed repetitive is to reduce the dizziness and body instability, increasing the stabilization of gaze, postural control (stability and body alignment) and improving the competence and well-being in making day-to-day. The main components of the vestibular rehabilitation exercises are the stabilization of gaze (re the role of the vestibular reflex), the balance training (rehabilitation of the function of vestibulospinal reflex), fitness exercises (to improve overall conditioning), and when indicated, the maneuvers of statoconia for positional vertigo (GANANÇA, 1989).

According Ganança (1989) The vestibular rehabilitation exercises to stimulate the vestibular system and maximize neuroplasticity of central nervous system, promoting physiological recovery of body balance (vestibular compensation). According Ganança (1994) there are several techniques of vestibular rehabilitation proposals for the treatment of vestibular disorders and there are non-specific protocols that can be used in the treatment of different sets of clinical presentations, and specific protocols for some vestibular or vestibular findings on examination and the patient's complaints. The importance of vestibular rehabilitation is now recognized almost unani - and there are many professionals who are dedicated to it, being in many countries, an activity in full development (Caovilla, 1998).

The aim of this study is to analyze the effects of therapeutic exercises for vestibular rehabilitation applied in a patient with depression and chronic peripheral vestibular disease. Also, review the progress achieved is through physical therapy in order to decrease the intensity, duration and number of vertigo, restoring the balance of physical and mental patient thus offering improved quality of life.

MATERIALS AND METHODS

The study was a patient J.A.F., 36 years, professional health care (nurse), sedentary, non-smoker and not a social drinker. Two years ago the patient suffers from bouts of dizziness with the consequence loss of balance, vision loss, nausea and vomiting that are exacerbated and accompanied by a marked shift in emotional state, triggering discouragement and depressive mood. The treatment was carried out in the residence patient, which we used a room 8m long and 4m wide for the sessions. The treatment was done in the period 14 September to 07 October, totaling 14 sessions, lasting 50 minutes, held four times a week.

We adopted the following tests: static balance (Romberg test, Romberg test, test of arms), dynamic balance test (Babinski-Weil) and test coordination (nose-index, index-index test, diadochokinesia). It was applied to the Berg scale for assessing mobility and balance, appearing fourteen questions which are quantified from four to zero, and the higher the score, the better the prognosis. Also applied to the scale of Hamilton depression that assesses the emotional state and consists of 17 items whose scores are summed to produce a total score, the score when this should be "2" is missing should be "0" and case of doubt or triviality should be "1". For symptoms to obtain more detailed information the score "2" is expanded: 2 for "mild", 3 for "moderate" and 4 for "severe".

It was used questionnaire Handicap for dizziness that aims to ascertain the degree of disadvantage that cause

dysfunction in the patient's life. It evaluates the emotional scale, functional and physical, totaling 25 issues, and the higher the score the worse prognosis. The case was diagnosed as suggested by data obtained in the functional and clinical history. Were applied vestibulometry steps in order to identify signs of vestibular dysfunction and vestibular type caused by it, because it was obtained by examining the evidence vestibulonistagmografia by difficult access and high economic cost. With the main abnormal findings in applying the steps of vestibular evaluation, we concluded that the patient had vestibular disease, where the steps contained studies of equilibrium, vertigo or nystagmus and optokinetic.

The treatment was based protocols proposed by Hawthorne (1944) and Cooksey (1946) and also included the rehabilitation protocol to enhance HERDMAN of vestibular adaptation in order to increase the gain of habituation of the eyes, increased tolerance for head movements, stimulation used for vestibular habituation, postural stability (static and dynamic), the work of fixing the gaze, gait and dynamic control.

The treatment consisted of the following sets of exercises: seated patient moves his head to one side to the other, then up and then down, each movement repeated 10 times. Patient sitting with her eyes fixed on a word located on the card placed in front of the head rotates 45 ° from one side and then 45 ° to the other (10 times). Patient sitting, gaze fixed in front, it initiates a sequence of movements to sit and stand for 10 repetitions. Then took place that year keeping the eyes closed. By presenting a herniated disc exercises to flex the trunk forward to reach an object that lies on the floor had to be replaced from sitting to kneeling position (10 repetitions).

Patient standing with one foot immediately in front of balancing the other remained with his arms crossed in front of the chest for two minutes. Ambulating patient and moving the head alternately to both sides for two minutes. Supine patient moves his head the right side and then to the left a series of 10 repetitions. new exercises were added to treatment because the patient was responding well to the series of exercises which has been submitted. Exercises of evolution were taken from vestibular rehabilitation protocol proposed by Hawthorne (1944) and Cooksey (1946). Each exercise was repeated 10 times in each section being accompanied and assisted by therapists with the series of exercises that were performed in the first sessions.

Patient standing with eyes closed, head flexed to the right, left, front and back 10 times. Patient standing with eyes closed swaying his head and torso forward and back with your knees Estate.

Standing with eyes open staring at a vertical line, the patient's body swayed back and forth. The patient was asked to walk forming a figure similar to an eight in a course of 3 meters. During the patient reported feel no vestibular. Finally a walk was held similar to a circle with a radius of 1 meter and a half.

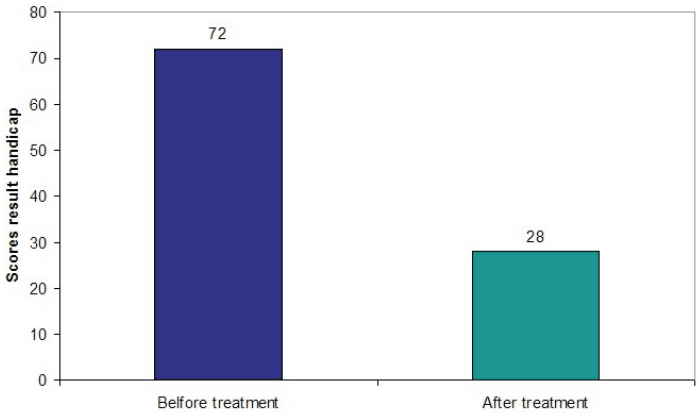
RESULTS

For the analysis of the questionnaire for HANDICAP dizziness was shown that significant change was observed in both the total score of the questionnaire, such as assessment scales physical, emotional and functional completing the improvement in quality of life of the patient.

The answer given by patient received the following score: YES = 4 points, No = 0 points, sometimes = 2 points.

The total score and the scores of each specific aspect (physical, functional and emotional) were computed. Thus, the highest score corresponds to one hundred points, a situation where there is maximum damage caused by dizziness and lower zero point which shows no loss in the patient's life due to dizziness. Similarly evaluating each aspect individually the higher the score, the greater the damage caused by dizziness.

Chart 1: Scores obtained with the application of DHI Brazilian



The Rating Scale for Depression Hamilton aims to measure the severity of depression the patient. The results of the implementation of the depression scale were satisfactory overall score of the pre-treatment was 36 points while the total score post-treatment had a score of 14 points on this scale the higher the score the greater the severity and presence of symptoms and the lower the score, the better the emotional state and the lower the incidence of harmful symptoms.

Regarding the Balance Scale Berg, who is used to quantify the degree of imbalance created by the vestibular disease, was applied before and after treatment by obtaining the following results: total score of the pre-treatment was 15 points and post - treatment was 50 points which shows that the lower the score the worse the prognosis and steady state of the patient and the higher the score the lower the degree of imbalance. The end result was positive and showed that the treatment was effective for promoting the improvement of the state of equilibrium.

Discussion analyzed patient complained of dizziness and imbalance by moving the head (position) or to change the trunk position. He also had concomitant nausea, vomiting and other events featuring the neurovegetative framework vestibular disease. The patient had a vertigo after the fourth treatment session. As suggested by Benedict (1998), to activate the process of compensation is necessary for patients to use their reflexes vestibular sensory causing conflicts in both organs of the inner

ear, vision and proprioception generally causing neurovegetative disturbances and vertigo. In tests of static balance and dynamic balance showed improvement of postural stability, with the result after effective treatment. Herdman (1997) reports that some studies have obtained an improvement of the overall patients after vestibular rehabilitation. They maintained the balance without visual afferents indicating that there was a better patient's ability to use the remaining vestibular signs to keep your balance or a neuroplasticity that occurred or there was an adaptation of the vestibular system.

After treatment the patient had dizziness type imbalance. Ganança (1996), the vestibular rehabilitation exercises are performed both for encouraging the habit as central to reset the vestibulo-ocular and vestibulo-spinal cord in peripheral and central vestibular disorders. The patient in the study said in their replies to the limitation Handicap and social activities. These activities relate to the functional aspects evaluated by questionnaire. These results are consistent with the assertions of Yardleyn et al. (1992) who reported that many patients with dizziness deliberately restrict physical activities, trips and social gatherings in order to reduce the risk of emergence of these unpleasant symptoms. The emotional aspects evaluated in the survey was compromised by dizziness in the patient, indicating involvement of mental structure that had changes in the vestibular system. This fact is in agreement with Pratt et al. (1958), who found that patients with changes in the vestibular system often have a fear of going out alone and feelings of depersonalization, highlighting the relationship between the vestibular and the emotional aspects.

It was found that the performance of physical function was affected by the effects of vertigo. According to Jacobson (2000) found that patients with peripheral vestibular syndrome unilateral and bilateral statistically significant differences in the scores of physical aspects in relation to the patients with normal eletroneuronistagmografia.

In tests vestibulometry obtained as a result of spontaneous nystagmus, dizziness during the implementation stage of the test that led to changes in postural balance. Jacobson et al (2000) found a correlation between increased postural stability presented in sensory organization subtests of the computerized dynamic posturography. They also observed that patients with spontaneous nystagmus showed greater impairment due to dizziness.

CONCLUSION

Through this study it is concluded that vestibular rehabilitation is effective in the physical therapy of patients with vestibular disorders, and in depressed patients using antidepressant drugs constantly, Vestibular Rehabilitation provides improvement of vertigo, improved quality of life and physical well-being and psychic. The study showed the drivers of the types of dizziness vertigo and nystagmus presented. This study reports a situation of chronic peripheral vestibular disease, an individualized treatment program using ocular mobility exercises, dynamic control and static control, proving to be effective in addressing this cause of postural instability. Another important factor was the effect produced positive change in lifestyle of the patient and better living with their family.

REFERENCES

AMORIM, A. M. et al. Vertigem posicional paroxística benigna e hipovalência labiríntica. **Rev. de Otorrinolaringol.** v.70, n.21, p.90-105, 2002.

BARREIROS, C. A. M. T. BIANCA, E. Relação reflexa entre o sistema oculomotor e a cervical superior. F**isioterapia Brasil.** v.3, n.5, p. 90-101, 2002.

BENTO, F. M. MARRONE S. M. **Tratado de Otologia.** 2. ed. São Paulo: USP, 1998, 50p.

CAOVILLA, H. H. G. et al. O equilíbrio corporal e seus distúrbios. Cuidando do paciente vertiginoso: a monotorização da evolução. **Rev. Bras. Medicina-Otorrinolaringol. v**.5, n.3, p. 89-91. 1998.

CAWTHORNE, T. The physiological basis of head exercises**. J Chart. Soc. Physiother.** v.106, n.7, 1944.

COOKSEY, F. S. Rehabilitation in vestibular in juries. **Proc. Royal Soc. Med**. v.39, p.273-278, 1946.

DORETTO D. Fisiopatologia Clínica do Sistema Nervoso. **Fundamentos da semiologia**. 2. ed. São Paulo: Atheneu, 2001. p.232-244.

EKMAN, L. L. Neurociência. **Fundamentos para reabilitação.** Rio de Janeiro: Guanabara Koogan, 2000. p.80-86.

GANANCA, M. M. et al. Reabilitação do paciente labiríntico por meio de exercícios optovestibulares. **Rev. Bras. Otorrinolaringologia.** v.22, n. 9, p. 57, 1989.

GANANCA, M. M. et al. O tratamento de vertigem no idoso por meio de exercícios vestibulares. **Rev. Atualidades em geriatria.** v.8, n.2, p.11-18, 1996.

GANANCA, M. M. et al. **Tratado de Otorrinolaringologia.** São Paulo: Roca, 1994. p. 75-79.

GANANCA, M. M. et al. **A vertigem explicada. Rev. Bras. Medicina-Otorrinolaringologia.** v.56, n.20, p. 152-160, 1999..

GUYTON, A. C. H. JOHN, E. **Tratado de Fisiologia Medica.** 9. ed. Rio de Janeiro: Guanabara Koogan, 1997. p.648.

HERDMAN S. J. **Advances in the treatment of vestibular Disorders**. Physycal Therapy, Alexandria. v.77, n.6, p.603-618, 1997.

HUNGRIA, H. **Otorrinolaringologia.** 8.ed. Rio de Janeiro: Guanabara Koogan, 2000. p.547.

JACOBSON, G. P. et al. Self-perceived balance disability handicap in the presence of bilateral peripheral vestibular system impairment. **J. Am. Acad. Audiol.** v. 11, n.2, p.76-83, 2000.

MACHADO, A. B. M**. Neuroanatomia Funcional**. 2.ed. São Paulo: Atheneu, 2000. p.363.

NORRE, M. E. BECKERS, A. Vestibular Habituation Training. Arch. Otorrinolaryngol. **Head Neck Surg.** v.114, p.883-886, 1988.

PRATI, R. T.C. et al. Anciety states following vestibular disorders. **Lancet**. v.12, n.2 p.247-349.1958.

SANTOS, S. et al. Vertigem do diagnostico a terapêutica. **Rev. Port. Ort.** v.39, n.3, p.271-286. 2001.

SILVA, A. L. S. et al. Reabilitação Vestibular em duas pacientes com Vertigem Posicional Paroxística Benigna. **Fisioterapia Brasil.** v.2, n.5, p.23-26, 2001.

YARDLEY, L. et al. Quantitative analysis of factors contributing to handicap and distress in vertiginous patients: a questionnaire study. **Clin Otolaryngol**. v.17, n.3, p.231-236, 1992.

Autor: Elzira D'Santiago Marciano

Endereço: Rua do Carmo, nº: 72, Centro, São João del- Rei Minas Gerais CEP: 36.300.090
Telefone: (32) 3371-3631 Celular: (32) 8404-2692
E-mail: elzira_santiago@yahoo.com.br

PERFORMANCE PHYSIOTHERAPIST IN CHRONIC PERIPHERAL VESTIBULAR DYSFUNCTION- CASE STUDY

SUMMARY

Introduction: The vestibular rehabilitation exercises to stimulate the vestibular system and maximize neuroplasticity of central nervous system, promoting physiological recovery of body balance. Objective: To analyze the effects of therapeutic exercises for vestibular rehabilitation applied in a patient with depression and chronic peripheral vestibular disease. Methods: We adopted the static balance tests (Romberg and Romberg test), dynamic equilibrium (Babinski-Weil) and coordination (index-nose, index-index test, diadochokinesia). Were also used Berg scales for assessing mobility and balance, Hamilton depression that assesses the emotional state, and the questionnaire Handicap for dizziness that aims to assess the level of disadvantage that cause dysfunction in the patient's life. The treatment was based on protocols proposed by Hawthorne (1944) and Cooksey (1946) and also included the rehabilitation protocol of HERDMAN to enhance vestibular adaptation. Results: Analysis of questionnaire HANDICAP significant change was observed in both the total score of the questionnaire, such as assessment scales physical, emotional and functional completing the improvement in quality of life of the patient. The results obtained in the Rating Scale Hamilton Depression were satisfactory, and the total score of pretreatment 36 points, and the total post-treatment 14 points, showing improvement since the lower the score, the better the emotional state and less is the incidence of harmful symptoms. In Balance Scale Berg, the score for the pre-treatment was 15 points and post-treatment 50 points and the positive result demonstrated that the treatment was effective for promoting the improvement of the steady state, since the higher the score the lower the rate imbalance. Conclusion: VR is effective in treating patients with vestibular disorders improved the vertigo, quality of life and physical well-being and mental health.

KEYWORDS: Vestibulopathy, Vestibular Rehabilitation.

PERFORMANCE PHYSIOTHÉRAPEUTE DANS LES TROUBLES DE PÉRIPHÉRIQUES VESTIBULAIRES CHRONIQUES - CASE STUDY

RÉSUMÉ

Introduction: Les exercices de réhabilitation vestibulaire visent à stimuler le système vestibulaire et à donner puissance à la neuroplasticité du système nerveux central, en promouvant la récupération physiologique de l'équilibre corporel. Objectif : Analyser les effets des exercices thérapeutiques de réhabilitation vestibulaire appliqués chez une patiente présentant dépression et vestibulopathie périphérique chronique. Méthodologie : On a adopté les testes d'équilibre statique (ROMBERG et ROMBERG sensibilisée) ; d'équilibre dynamique (BABINSK-WEIL) et de coordination (index-nez, index-index, teste de diadococinesie). On a aussi utilisé les échelles de Berg pour évaluer la mobilité et l'équilibre ; de dépression de Hamilton qui évalue l'état émotionnel ; et le questionnaire de Handicap pour le vertige, qui objective vérifier le degré de désavantage que la dysfonction provoque dans la vie du patient. Le traitement a été fondé sur les protocoles proposés par Cawthorne (1944) et Cooksey (1946), mais aussi le protocole de réhabilitation de HERDMAN pour développer l'adaptation vestibulaire. Résultats : Dans l'analyse du questionnaire de HANDICAP il y a eu une modification significative aussi bien dans la ponctuation totale du questionnaire que dans l'évaluation des échelles physique, émotionnelle et fonctionnelle, qui suggèrent l'amélioration de la qualité de vie chez la patiente. Les résultats obtenus dans l'Échelle d'Évaluation de la Dépression de Hamilton ont été satisfaisants, en étant l'écore total du Pré-traitement 36 points et l'écore total de l'Après-traitement 14 points, en prouvant l'amélioration puisque le moindre est l'écore, le mieux c'est l'état émotionnel et le moindre c'est l'incidence de symptômes néfastes. Dans l'Échelle d'Équilibre de Berg, l'écore du Pré-traitement a été 15 points et l'écore de l'Après-traitement, 50 points, un résultat positif qui démontre que le traitement a été efficace en promouvoir l'amélioration de l'état d'équilibre, puisque le plus grand est l'écore, le plus petit est le degré de déséquilibre. Conclusion : La Réhabilitation vestibulaire est efficace dans le traitement de patients souffrant de vestibulopathies, puisqu'elle rend possible l'amélioration du vertige, de la qualité de vie et du bien-être physique et psychique.

MOTS-CLÉS: Vestibulopathy, Rééducation vestibulaire.

RENDIMIENTO FISIOTERAPEUTA CRÓNICA EN DISFUNCIÓN VESTIBULAR PERIFÉRICA- ESTUDIO DE CASO

RESUMEN

Introducción: Los ejercicios para rehabilitación vestibular van estimular el sistema vestibular y maximizar la neuroplasticidad del sistema nervioso central, promoviendo la recuperación fisiológica y el balance Corporal. Objetivo: Analizar los efectos de los ejercicios terapéuticos para la rehabilitación vestibular aplicada en un paciente con depresión y desfunción vestibular periférica crônica. Métodos: Se aprobó la prueba de equilibrio estático (ROMBERG e ROMBERG sensibilizado); el equilibrio dinámico (Babinski-Weil) y coordinación (index nariz, el índex-index, diadochokinesia) También se utilizaron escalas de Berg para evaluar la movilidad y el equilibrio, la depresión de Hamilton, que evalúa el estado emocional y El cuestionário Handicap para el mareo que tiene como objetivo evaluar el grado de desventaja que causa disfunción en la vida del paciente. El tratamiento se basa en los protocolos propuestos por Hawthorne (1944) y Cooksey (1946) y también se incluye el protocolo de rehabilitación de HERDMAN para mejorar la adaptación vestibular. Resultados: Análisis del cuestionario de HANDICAP se observo en la puntuación tanto en el total del cuestionario, como las escalas de evaluación física, emocional y funcional de completar la mejora de la calidad de vida del paciente. Los resultados obtenidos en la Escala de Depresión de Hamilton fueron satisfactorios, y la puntuación total de tratamiento previo de 36 puntos, y el cargo total de tratamiento de 14 puntos, mostrando una mejoría desde el más bajo es el puntaje, mejor el estado emocional y menos es la incidencia de los síntomas nocivos. En Berg Balance Scale, la puntuación para el pre-tratamiento fue de 15 puntos y después del tratamiento de 50 puntos y el resultado positivo demostrado que el tratamiento fue eficaz para promover la mejora del estado de equilibrio, ya que la mayor es la puntuación más baja es la tasa de desequilíbrio. Conclusión: La reabilitación vestibular es eficaz en el tratamiento de pacientes con trastornos vestibulares mejorado el vértigo, la calidad de vida física y el bienestar y la salud mental.

PALABRAS CLAVE: Vestibulopatía, Rehabilitación vestibular.

ATUAÇÃO FISIOTERAÊUTICA NA VESTIBULOPATIA PERIFÉRICA CRÔNICA - ESTUDO DE CASO

RESUMO

Introdução: Os exercícios de reabilitação vestibular visam estimular o sistema vestibular e potencializar a neuroplasticidade do sistema nervoso central, promovendo a recuperação fisiológica do equilíbrio corporal. Objetivo: Analisar os efeitos dos exercícios terapêuticos de reabilitação vestibular aplicados em uma paciente com quadro de depressão e vestibulopatia periférica crônica. Metodologia: Foram adotados os testes de equilíbrio estático (ROMBERG e ROMBERG sensibilizado); de equilíbrio dinâmico (BABINSK-WEIL) e de coordenação (index-nariz, index-index, teste de diadococinesia). Também foram utilizadas as escalas de Berg para avaliação de mobilidade e equilíbrio; de depressão de Hamilton que avalia o estado emocional; e o questionário de Handicap para tontura que objetiva verificar o grau de desvantagem que a disfunção causa na vida do paciente. O tratamento foi baseado nos protocolos propostos por Cawthorne (1944) e Cooksey (1946) sendo incluído também o protocolo de reabilitação de HERDMAN para incrementar a adaptação vestibular. Resultados: Na análise do questionário de HANDICAP houve modificação significativa tanto na pontuação total do questionário, como na avaliação das escalas física, emocional e funcional concluindo a melhora na qualidade de vida da paciente. Os resultados obtidos na Escala de Avaliação da Depressão de Hamilton foram satisfatórios, sendo o escore total do Pré-tratamento 36 pontos e o escore total do Pós-tratamento 14 pontos, evidenciando melhora já que quanto menor o escore, melhor é o estado emocional e menor é a incidência de sintomas prejudiciais. Na Escala de Equilíbrio de Berg, o escore do pré-tratamento foi 15 pontos e o pós-tratamento 50 pontos sendo o resultado positivo demonstrando que o tratamento foi eficaz por promover a melhora do estado de equilíbrio, já que quanto maior o escore menor o grau de desequilíbrio. Conclusão: A Reabilitação Vestibular é eficaz no tratamento de pacientes com vestibulopatias proporcionando melhora da vertigem, da qualidade de vida e bem estar físico e psíquico.

PALAVRAS-CHAVE: Vestibulopatia,Reabilitação Vestibular.

PUBLICAÇÃO NO FIEP BULLETIN ON-LINE: http://www.fiepbulletin.net/80/a2/39