

## Vertigo

## ABSTRACTS

- Baloh RW., 2002. Episodic vertigo: central nervous system causes.
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- Barbiroli B., 1999. Improved brain and muscle mitochondrial respiration with CoQ. An in vivo study by 31P-MR spectroscopy in patients with mitochondrial cytopathies.
- Bertholon P., 2002. Positional down beating nystagmus in 50 patients: cerebellar disorders and possible anterior semicircular canalolithiasis.
- Bertholon P., 2002. [Benign paroxysmal positional vertigo of the horizontal canal. Clinical features in 25 patients]
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- Episodic vertigo: central nervous system causes.**

Curr Opin Neurol. 2002 Feb;15(1):17-21.

Episodic ataxia type 2 is a prototypical episodic vertigo and ataxia syndrome that is caused by mutations in the calcium channel gene CACNA1A. Recent discoveries regarding the molecular mechanisms that underlie this syndrome provide a model for understanding the more common familial episodic vertigo syndromes, particularly those associated with migraine. Vertigo due to cerebrovascular disease can be of peripheral or central origin, and can mimic more benign peripheral vestibular disorders. Small infarcts in the cerebellum and lateral medulla can present with vertigo without other localizing symptoms.

### **Does vestibular habituation still have a place in the treatment of benign paroxysmal positional vertigo?**

Banfield GK, Wood C, Knight J. Department of Otolaryngology, Mayday Hospital, Thornton Heath, Surrey, UK.

J Laryngol Otol. 2000 Jul;114(7):501-5.

Particle repositioning procedures such as the Epley manoeuvre have become popular in the management of benign paroxysmal positional vertigo (BPPV) at the expense of more traditional therapies such as vestibular habituation. We prospectively analysed the response of consecutive patients presenting with BPPV to treatment with vestibular habituation exercises using a symptom score sheet before and after treatment. This same patient group was then followed up, on average three years, eight months after discharge, to determine their long-term response to treatment. The results of the study demonstrated an excellent short-term response rate to treatment but a high level of recurrence after discharge. Most patients who experienced further symptoms following discharge were however self-reliant and were able to return to their habituation exercises without the need for further medical input. The aim in the management of these patients must be to provide long-term self reliance as well as short-term cure and it may be that this has not yet been well demonstrated with the Epley manoeuvre. It must also be remembered that particle repositioning manoeuvres cannot be used in all patients for example those who suffer with cervical or thoracic spine pathology and that some will fail to respond at all. We believe that vestibular habituation retains a useful role in the treatment of BPPV.

### **Improved brain and muscle mitochondrial respiration with CoQ. An in vivo study by 31P-MR spectroscopy in patients with mitochondrial cytopathies.**

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Biofactors. 1999;9(2-4):253-60.

We used in vivo phosphorus magnetic resonance spectroscopy (31P-MRS) to study the effect of CoQ10 on the efficiency of brain and skeletal muscle mitochondrial respiration in ten patients with mitochondrial cytopathies. Before CoQ, brain [PCr] was remarkably lower in patients than in controls, while [Pi] and [ADP] were higher. Brain cytosolic free [Mg<sup>2+</sup>] and delta G of ATP hydrolysis were also abnormal in all patients. MRS also revealed abnormal mitochondrial function in the skeletal muscles of all patients, as shown by a decreased rate of PCr recovery from exercise. After six-months of treatment with CoQ (150 mg/day), all brain MRS-measurable variables as well as the rate of muscle mitochondrial respiration were remarkably improved in all patients. These in vivo findings show that treatment with CoQ in patients with mitochondrial cytopathies improves mitochondrial respiration in both brain and skeletal muscles, and are consistent with Lenaz's view that increased CoQ concentration in the mitochondrial membrane increases the efficiency of oxidative phosphorylation independently of enzyme deficit.

### **Positional down beating nystagmus in 50 patients: cerebellar disorders and possible anterior semicircular canalithiasis.**

Bertholon P, Bronstein AM, Davies RA, Rudge P, Thilo KV. CHU de Saint Etienne, Hopital Bellevue, Saint Etienne, France.

J Neurol Neurosurg Psychiatry. 2002 Mar;72(3):366-72.

**OBJECTIVES:** To clarify the clinical significance of positional down beat nystagmus (pDBN).

**METHODS:** A discussion of the neuro-otological findings in 50 consecutive patients with pDBN.

**RESULTS:** In 38 patients there was evidence of CNS disease (central group) but in 12 there was not (idiopathic group). In the CNS group, presenting symptoms were gait, speech, and autonomic dysfunction whereas in the idiopathic group patients mostly reported positional vertigo. The main neurological and oculomotor signs in the CNS group were explained by cerebellar dysfunction, including 13 patients with multiple system atrophy. In patients with multiple system atrophy with a prominent extrapyramidal component, the presence of pDBN was helpful in the differential diagnosis of atypical parkinsonism. No patient with pDBN had the Arnold-Chiari malformation, a common cause of constant down beat nystagmus (DBN). In the idiopathic group, the pDBN had

characteristics which suggested a peripheral labyrinthine disorder: vertigo, adaptation, and habituation. In six patients an additional torsional component was found (concurrently with the pDBN in three). Features unusual for peripheral disorder were: bilateral positive Dix-Hallpike manoeuvre in nine of 12 patients and selective provocation by the straight head-hanging manoeuvre in two.

**CONCLUSION:** It is argued that some patients with idiopathic pDBN have benign paroxysmal positional vertigo (BPPV) with lithiasis of the anterior canal. The torsional component may be weak, because of the predominantly sagittal orientation of the anterior canal, and may not be readily seen clinically. Nystagmus provocation by bilateral Dix-Hallpike and straight head-hanging may be explained by the vertical upwards orientation of the ampullary segment of the anterior canal in the normal upright head position. Such orientation makes right-left specificity with the Dix-Hallpike manoeuvre less important than for posterior canal BPPV. This orientation requires a further downwards movement of the head, often achieved with the straight head-hanging position, to provoke migration of the canaloliths. The straight head-hanging manoeuvre should be carried out in all patients with a history of positional vertigo and a negative Dix-Hallpike manoeuvre.

**[Benign paroxysmal positional vertigo of the horizontal canal. Clinical features in 25 patients]** [Article in French]

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Ann Otolaryngol Chir Cervicofac. 2002 Apr;119(2):73-80.

**OBJECTIVES:** To review the clinical features of benign paroxysmal positional vertigo of the horizontal canal (HC-BPPV).

**PATIENTS AND METHODS:** Retrospective study (September 1999 to March 2001) of 25 patients with HC-BPPV. Patients complained of positional vertigo associated with direction changing horizontal positional nystagmus, either geotropic or ageotropic.

**RESULTS:** The horizontal nystagmus was triggered in all patients when rolled to either side in a supine position (head raised 30 degrees) and in 14 patients by the Dix Hallpike manoeuvre. The nystagmus was geotropic in 15 patients and ageotropic in 10. It varies in time in 4 patients with one change in 3 (from geotropic to ageotropic in 2 and ageotropic to geotropic in 1) and 4 changes in 10 days in another patient. In one patient with head trauma, the HC-BPPV was currently associated with ipsilateral posterior canal benign paroxysmal positional vertigo (PC-BPPV), and its characteristic rotatory-up beat nystagmus. Interestingly, 4 patients had a previous history of ipsilateral PC-BPPV and in 5 others an ipsilateral PC-BPPV occurred after the HC-BPPV. Although spontaneous recovery of HC-BPPV was common in most patients, a 270 degrees "barbecue rotation" or a "prolonged position on the healthy side" was effective in some patients.

**CONCLUSION:** Patients with positional vertigo should undergo Dix Hallpike positioning and supine lateral head turns as this latter manoeuvre is more efficient to diagnose an HC-BPPV. Both the transformation of the positional horizontal nystagmus (geotropic-ageotropic) and the association with a PC-BPPV support the diagnosis of an HC-BPPV.

**Cervical vertigo.**

Brandt, T., Bronstein, A.M.

J. Neurol. Neurosurg. Psychiatry 2001 Jul; 71(1): 8-12.

NO ABSTRACT AVAILABLE

**Ginkgo biloba (EGb 761) in the treatment of equilibrium disorders.**

Cesarani A, Meloni F, Alpini D, Barozzi S, Verderio L, Boscani PF. Institute of Otolaryngology, University of Sassari, Italy.

Adv Ther. 1998 Sep-Oct;15(5):291-304.

In an open, controlled study, 44 patients complaining of vertigo, dizziness, or both, caused by vascular vestibular disorders were randomly treated with extract of Ginkgo biloba (EGb 761) 80 mg twice daily or with betahistine dihydrochloride (BI) 16 mg twice daily for 3 months. A complete neuro-otologic and equilibrium examination was performed at baseline and after 3 months of treatment, with evaluation of clinical findings. In the first month of therapy, vertigo and dizziness improved in 64.7% of patients treated with BI and in 65% of those who received EGb 761. Compared to baseline, no statistically significant changes were observed in cranial scans for patients with a "central" cranial pattern. Likewise, no changes versus baseline were observed in both groups for the equilibrium score. The comprehensive test battery showed the following findings: EGb 761 induced a slight decrease of saccadic delay and considerably increased saccadic velocities; BI improved saccadic accuracy but did not modify delay; EGb 761 improved smooth pursuit gain at 0.4 Hz 40 degrees/s three times more than BI; both drugs asymmetrically reduced nystagmus maximum velocity at 40 degrees/s; both drugs asymmetrically improved the sinusoidal vestibulo-ocular reflex; BI considerably

reduced--whereas EGb 761 considerably improved--visuovestibular ocular reflex. No side effects were recorded during the trial except for transient mild headache and gastric upset in 2 patients receiving EGb 761 and transient cyanosis of nails and lips in 1 patient given BI. These results suggest that EGb 761 and BI operate at different equilibrium receptor sites and show that EGb 761 can considerably improve oculomotor and visuovestibular function.

### **Meniere's disease: overview, epidemiology, and natural history.**

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Otolaryngol Clin North Am. 2002 Jun;35(3):455-95.

Meniere's disease is a disease of the inner ear characterized by a triad of symptoms: vestibular symptoms, auditory symptoms, and pressure. The pathologic correlate of Meniere's disease is endolymphatic hydrops and the etiopathogenesis involves a deficiency in the absorption of endolymph. The pathophysiology of the symptoms is still disputed: membranous ruptures, pressure and mechanical displacement of the end organs, or obstruction followed by an abrupt clearance of the endolymphatic duct. The course of the disease may be progressive or nonprogressive and, in addition to the typical presentation of Meniere's disease, two variations of the disorder have been identified: cochlear Meniere's disease, and vestibular Meniere's disease. It can be further broken into two subsets: Meniere's syndrome, with a known and well-established cause, and Meniere's disease, in which the cause seems to be idiopathic. It is likely that there are racial (genetic) as well as environmental factors that influence differences in incidence among countries and among various sections of countries. The disease is much more common in adults, with an average age of onset in the fourth decade, the symptoms beginning usually between ages 20 and 60 years. Meniere's disease is (grossly) equally common in each sex, and right and left ears are affected with fairly equal frequency. The diagnosis of Meniere's disease is by exclusion, and a careful history is the most important guide to a correct diagnosis. Its medical treatment is largely empiric. Surgery can be considered when, even after medical therapy, the disease progresses and the symptoms become intractable. Surgery may be either conservative or destructive. Bilaterality must be considered when deciding the best surgical option for a patient with Meniere's disease. It is the authors' opinion that endolymphatic sac surgery is an extension of conservative treatment.

### **Diagnosis and initiating treatment for peripheral system disorders: imbalance and dizziness with normal hearing.**

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Otolaryngol Clin North Am. 2000 Jun;33(3):563-78.

Disorders affecting the peripheral vestibular system commonly involve the peripheral auditory system causing hearing loss. There are a number of disorders, however, that selectively involve the peripheral vestibular system causing dizziness without hearing loss. These disorders include benign paroxysmal positional vertigo, vestibular neuritis, recurrent vestibulopathy, familial vestibulopathy, and bilateral idiopathic vestibulopathy. This article reviews these disorders and their diagnosis and management.

### **The canalith repositioning procedure for the treatment of benign paroxysmal positional vertigo: a randomized controlled trial.**

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Mayo Clin Proc. 2000 Jul;75(7):695-700.

**OBJECTIVE:** To compare the canalith repositioning procedure (CRP) with a sham maneuver for the treatment of benign paroxysmal positional vertigo.

**PATIENTS AND METHODS:** We recruited 50 patients with a history of positional vertigo and unilateral positional nystagmus on physical examination (Dix-Hallpike maneuver). Patients were randomized to either the CRP (n = 24) or a sham maneuver (n = 26). Measured outcomes included resolution of vertigo and positional nystagmus at follow-up examination.

**RESULTS:** The mean duration of follow-up was 10 days for both groups. Resolution of symptoms was reported by 12 (50%) of the 24 patients in the CRP group and by 5 (19%) of the 26 patients in the sham group (P = .02). The results of the Dix-Hallpike maneuver were negative for positional nystagmus in 16 (67%) of 24 patients in the CRP group and in 10 (38%) of 26 patients in the sham group (P = .046).

**CONCLUSION:** The CRP is effective treatment of benign paroxysmal positional vertigo, and this procedure can be performed by

general internists on outpatients with this disorder.

### **Long-term postural abnormalities in benign paroxysmal positional vertigo.**

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ORL J Otorhinolaryngol Relat Spec. 2002 Jul-Aug;64(4):237-41.

Benign paroxysmal positional vertigo (BPPV) is a disorder in which patients suffer from acute rotatory vertigo due to the presence of free otoconial debris migrating into one or more semicircular canals during head movements and resulting in abnormal stimulation of the ampullary crest. A prolonged loss of equilibrium of unclear origin is also present. Static posturography is a useful tool for the study of postural control systems and their role in these abnormalities. The aim of the present study was to evaluate the frequency of body sway and long-term instability of BPPV patients by posturography frequency analysis. Twenty patients with canalithiasis of the posterior semicircular canal and 20 normal controls were subjected to static posturography. Informed consent was obtained from all subjects. Patients were tested 1 h after diagnosis, and 3 days and 12 weeks after the characteristic Epley repositioning maneuver. Patients with BPPV showed significantly increased body sway both on lateral (X) and anteroposterior (Y) planes compared to normal subjects. Corporal oscillation with a broad-frequency spectrum was observed in both closed and open eye tests. The repositioning maneuver decreased the X plane body sway, while the anteroposterior sway was unchanged. Twelve weeks after treatment, a normalization of the anteroposterior sway was observed. Results of this study suggest that the long-term postural disturbance associated with BPPV differs from the acute disequilibrium that subsides after canalith repositioning: the former is a sagittal plane/broad spectrum body sway, while the latter is primarily a frontal plane/low frequency sway. The Epley maneuver was shown to reduce frontal sway, a postural abnormality that might therefore be linked to posterior semicircular canal function. Conversely, the observed sagittal body sway was only partially relieved by the restoration of canal function, and therefore, may be more related to the chronic dizziness observed in these patients. Copyright 2002 S. Karger AG, Basel

### **[Benign paroxysmal positional vertigo] [Article in Norwegian]**

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Tidsskr Nor Laegeforen. 2002 Jun 10;122(15):1463-6.

**BACKGROUND:** Benign paroxysmal positional vertigo is a disorder of the inner ear causing brief attacks of intense rotatory vertigo and nystagmus occurring shortly after certain well-defined head movements. The present review discusses treatment of this disease in relation to new knowledge about its epidemiology and pathogenesis.

**MATERIAL AND METHODS:** A review is given based on our experience and a Medline search of relevant literature published over the last ten years.

**RESULTS:** The disorder is common; prevalence increases with age. There is now general agreement that the symptoms are caused by loose particles in the endolymph of the inner ear. Treatment by repositioning manoeuvres has proven effective.

**INTERPRETATION:** Treatment of benign paroxysmal positional vertigo is safe, effective, and inexpensive. It should start at the time of diagnosis. Management of typical cases should be feasible in a general practice setting.

### **[Traumatic benign paroxysmal positional vertigo: diagnosis and treatment] [Article in Hebrew]**

Gordon CR, Joffe V, Levite R, Gadoth N. Department of Neurology, Meir General Hospital, Kfar Saba.

Harefuah. 2002 Nov;141(11):944-7, 1012, 1011.

Although head trauma is the cause of Benign Paroxysmal Positional Vertigo (BPPV) in about 15% of cases, the clinical features and response to treatment in this particular group of patients was not previously evaluated. We present 20 cases of traumatic BPPV: 12 cases identified from 150 consecutive BPPV patients diagnosed in our Dizziness Clinic; and 8 cases diagnosed from 75 consecutive head trauma patients seen in the Emergency Room. In all patients the clinical diagnosis was confirmed by the Dix-Hallpike maneuver and all were treated by the Epley procedure. Treatment results were compared to those of 40 consecutive patients with idiopathic BPPV. There was a wide spectrum and severity of head trauma including road accident (7), different falls (5), blow to the head (5) and miscellaneous (3). Two patients experienced brief loss of consciousness. Only two patients were diagnosed as BPPV before referral to our clinic. When presented to our Dizziness Clinic the patients were diagnosed as follows: unspecified dizziness (7), cervical vertigo (4) and transient ischemic attack (1). Five patients (25%) had bilateral BPPV. Eight

patients (40%) had complete resolution of symptoms and signs following a single treatment while 12 patients (60%) required additional physical treatments until complete resolution of BPPV was achieved. During follow-up, 11 patients (55%) had recurrent attacks of BPPV. Thirty-four patients with idiopathic BPPV (85%) had a single successful treatment session while the others required repeated physical treatments until complete resolution of BPPV. We conclude that traumatic BPPV is probably under-recognized or misdiagnosed in clinical practice. Response to a single physical treatment seems to be less favorable than in idiopathic BPPV. The Dix-Hallpike maneuver is mandatory in all patients with dizziness and vertigo following head trauma.

### **Symptoms of vertigo in general practice: a prospective study of diagnosis.**

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Br J Gen Pract. 2002 Oct;52(483):809-12.

**BACKGROUND:** There is little published evidence of the general practice experience of the diagnostic outcomes when symptoms of vertigo present. What research there is has been dominated by specialist centres. This gives a skewed view of the prevalence of the causes of such symptoms. **AIM:** To describe the likely diagnosis of symptoms of vertigo.

**DESIGN OF STUDY:** Prospective cohort study

**METHODS:** Thirteen GPs were recruited and trained to clinically assess and follow up all patients presenting with symptoms of vertigo over a six-month period. Age-sex data were simultaneously gathered on those who consulted with non-vertiginous dizziness.

**RESULTS:** The main diagnoses assigned by the GPs in 70 patients were benign positional vertigo, acute vestibular neuronitis and Meniere's disease, which together accounted for 93% (95% confidence interval = 71% to 100%) of patients' symptoms. Ninety-one per cent of patients were managed in general practice and 60% received a prescription for a vestibular sedative.

**CONCLUSION:** This study suggests that presentations of symptoms of vertigo can be clinically diagnosed in most cases. The diagnoses recorded by GPs differ in proportion to those in specialist centres, with a larger number of patients suffering from benign positional vertigo and acute vestibular neuronitis in general practice, in contrast with specialist centres, which see more patients with Meniere's disease.

### **Treatment of benign positional vertigo using the semont maneuver: efficacy in patients presenting without nystagmus.**

Haynes DS, Resser JR, Labadie RF, Girasole CR, Kovach BT, Scheker LE, Walker DC. Vanderbilt Bill Wilkerson Center for Otolaryngology and Communicative Sciences, Nashville, Tennessee, USA.

Laryngoscope. 2002 May;112(5):796-801.

**OBJECTIVE:** To evaluate and compare the efficacy of the Semont liberatory maneuver on "objective" benign paroxysmal positional vertigo (BPPV) defined as vertigo with geotropic nystagmus in Dix-Hallpike positioning versus "subjective" BPPV defined as vertigo without nystagmus in Dix-Hallpike positioning.

**STUDY DESIGN:** Retrospective chart review.

**METHODS:** One hundred sixty-two patients with positional vertigo during Dix-Hallpike positioning were identified. Patients were evaluated for the presence or absence of nystagmus. All patients underwent the Semont liberatory maneuver. The patient's condition at follow-up was documented at 3 weeks as complete, partial, or failure. Repeated procedures were performed if necessary.

**RESULTS:** There were 127 cases of objective BPPV and 35 cases of subjective BPPV. Overall, 90% of all patients tested had significant improvement of their vertigo after 1.49 maneuvers on average. Improvement was seen in 91% of patients with objective BPPV after 1.59 maneuvers on average, compared with 86% in subjective BPPV after 1.13 maneuvers on average (chi2 test, not significant [P = .5]). Patients with a history of traumatic origin or cause had an overall success rate of 81% compared with 92% for nontraumatic causes or origins (chi2 test, not significant [P = .1]). Recurrences were seen in 29% of patients after a successful initial maneuver; however, 96% of these patients responded to further maneuvers. Four patients with persistent symptoms after conservative management underwent posterior semicircular canal occlusion with resolution of symptoms.

**CONCLUSION:** The Semont liberatory maneuver provides relief of vertigo in patients with positional vertigo, even in patients without objective nystagmus.

### **The Epley manoeuvre for benign paroxysmal positional vertigo--a systematic review.**

Clin Otolaryngol. 2002 Dec;27(6):440-5.

Benign paroxysmal positional vertigo (BPPV) is a syndrome characterized by short-lived episodes of vertigo in association with rapid changes in head position. Current treatment approaches include rehabilitative exercises and physical manoeuvres including the Epley manoeuvre. Randomized clinical trials of the Epley manoeuvre were identified. Outcome measures that were considered include: frequency and severity of attacks of vertigo; proportion of patients improved by each intervention; and conversion of a 'positive' Dix-Hallpike test to a 'negative' Dix-Hallpike test. Patients who received the Epley manoeuvre were more likely to have complete resolution of their symptoms [odds ratio 4.92 (95% C.I. 1.84-13.16)], and more likely to convert from a positive to negative Dix-Hallpike test [odds ratio 5.67 (95% C.I. 2.21-14.56)]. There were no serious adverse effects of treatment. There is some evidence that the Epley manoeuvre is a safe effective treatment for posterior canal BPPV.

### **Vertical semicircular canal function: a study in patients with benign paroxysmal positional vertigo.**

Iida M, Hitouji K, Takahashi M. Department of Otorhinolaryngology, Tokai University School of Medicine, Kanagawa, Japan.

Acta Otolaryngol Suppl. 2001;545:35-7.

A pendular rotation test in a head-tilted position (60 degrees backwards and rotated 45 degrees to either the right or left) was performed in 7 patients with benign paroxysmal positional vertigo (BPPV). Patients were rotated 360 degrees at a frequency of 0.1 Hz (maximum speed 114 degrees/s). The excitability of vertical semicircular canals was evaluated using this test procedure. Using an infrared CCD camera and a PC, evoked nystagmus was analyzed in order to determine the morbidity of BPPV. A statistically significant difference ( $p < 0.05$ ) was found in the maximal slow-phase eye velocity between nystagmus from the anterior semicircular canal and nystagmus from the posterior semicircular canal. The excitability of the posterior semicircular canal in the affected ear was lower than that of the anterior semicircular canal. However, when vertigo and nystagmus disappeared, the difference in excitability was improved. The present results indicate some functional deterioration of the posterior semicircular canal in BPPV cases, suggesting the participation of both mechanical (dumping by mass) and organic (peripheral end organ) factors in causing morbidity.

### **Vertigo in patients with benign paroxysmal positional vertigo.**

Kentala E, Pyykko I. Department of Otolaryngology, Helsinki University Hospital, Finland. erna.kentala@huch.fi

Acta Otolaryngol Suppl. 2000;543:20-2.

We retrieved information on 59 patients, 19 men and 40 women, with benign paroxysmal positional vertigo (BPPV) from the database of the otoneurologic expert system (ONE). The original number of patients was greater, but we excluded all those with hearing loss of any origin. The patients filled in a questionnaire concerning their symptoms, earlier diseases, accidents and tobacco and alcohol use. This information was then integrated with results of audiometric, otoneurologic and imaging studies. The mean age at onset of symptoms was 44 years. Most patients had had vertiginous spells for  $< 1$  year. None of the patients had hearing loss. Tinnitus was experienced by 32% of patients, and these patients experienced more anxiety than the others [ $r(53) = 0.40$ ,  $p < 0.01$ ]. The mean duration of the vertigo attacks ranged from a few seconds to 5 min, and they were fairly mild (26%) or moderate (41%) in intensity. The attacks were perceived as more intense if vertigo was rotational [ $r(54) = 0.60$ ,  $p < 0.01$ ] or if it was accompanied by nausea [ $r(58) = 0.42$ ,  $p < 0.01$ ]. Patients with headache had more intense attacks [ $r(58) = 0.36$ ,  $p < 0.01$ ]. The vertigo attacks occurred in spells; patients had several attacks a week (23%) or during the course of 1 day (52%). The vertigo was rotational in 80% of patients, and 47% experienced a floating sensation. The floating vertigo was most often provoked by pressure changes [ $r(54) = 0.41$ ,  $p < 0.01$ ] or changes in visual surroundings [ $r(54) = 0.52$ ,  $p < 0.01$ ].

### **A review of nutrients and botanicals in the integrative management of cognitive dysfunction.**

Kidd PM.

Altern Med Rev. 1999 Jun;4(3):144-61.

Dementias and other severe cognitive dysfunction states pose a daunting challenge to existing medical management strategies. An integrative, early intervention approach seems warranted. Whereas, allopathic treatment options are highly limited, nutritional and botanical therapies are available which have proven degrees of efficacy and generally favorable benefit-to-risk profiles. This review covers five such therapies: phosphatidylserine (PS), acetyl-L-carnitine (ALC), vinpocetine, Ginkgo biloba extract (GbE), and Bacopa monniera (Bacopa). PS is a phospholipid enriched in the brain, validated through double-blind trials for improving memory, learning,

concentration, word recall, and mood in middle-aged and elderly subjects with dementia or age-related cognitive decline. PS has an excellent benefit-to-risk profile. ALC is an energizer and metabolic cofactor which also benefits various cognitive functions in the middle-aged and elderly, but with a slightly less favorable benefit-to-risk profile. Vinpocetine, found in the lesser periwinkle Vinca minor, is an excellent vasodilator and cerebral metabolic enhancer with proven benefits for vascular-based cognitive dysfunction. Two meta-analyses of GbE demonstrate the best preparations offer limited benefits for vascular insufficiencies and even more limited benefits for Alzheimer's, while "commodity" GbE products offer little benefit, if any at all. GbE (and probably also vinpocetine) is incompatible with blood-thinning drugs. Bacopa is an Ayurvedic botanical with apparent anti-anxiety, anti-fatigue, and memory-strengthening effects. These five substances offer interesting contributions to a personalized approach for restoring cognitive function, perhaps eventually in conjunction with the judicious application of growth factors.

### **Occurrence of semicircular canal involvement in benign paroxysmal positional vertigo.**

Korres S, Balatsouras DG, Kaberos A, Economou C, Kandiloros D, Ferekidis E. Ear, Nose, and Throat Department, National University of Athens, Ippokration Hospital, Greece.

Otol Neurotol. 2002 Nov;23(6):926-32.

**OBJECTIVES:** To study the occurrence of each variant of benign paroxysmal positional vertigo (BPPV) and to present some specific clinical features and the results of their treatment by appropriate repositioning maneuvers.

**STUDY DESIGN:** A retrospective review of the records of patients with BPPV.

**SETTING:** Neurotology clinic of the ear, nose, and throat department of a general hospital.

**PATIENTS:** One hundred twenty-two patients were included in the study, 54 male and 68 female, mean ages 61.8 and 59.6 years, respectively, ranging in age from 25 years to 86 years and with symptoms lasting for an average of 124 days. The diagnosis of each type of BPPV was based on the history of the patients and on the positive results of the appropriate provoking maneuver.

**METHODS:** From all the patients, a comprehensive history was obtained, followed by clinical examination of the ears, nose, and throat and a complete audiologic and neurotologic examination, including electronystagmography. All patients were treated with an appropriate repositioning maneuver, depending on the type of BPPV.

**RESULTS:** Of 122 patients, 110 had posterior canal involvement, 10 had horizontal canal involvement, and only 2 had the anterior canal variant. The canalith repositioning procedure was immediately successful in 106 patients and in 8 more patients proved successful after its repetition in a second session, resulting in a total success rate of 93.4%.

**CONCLUSIONS:** All the BPPV variants shared the same clinical and demographic characteristics and responded equally well to treatment. However, differential diagnosis was necessary to apply the appropriate canalith repositioning procedure. Although data from clinical and histologic studies do not fully account for the observed relative occurrence of each variant of BPPV, a satisfactory explanation may be provided by the anatomic location of each semicircular canal and additionally by self-treatment of most cases of the horizontal and the anterior canal variety.

### **[Diagnosis of common causes of vertigo using a structured clinical history] [Article in Spanish]**

Lopez-Escamez JA, Lopez-Nevot A, Gamiz MJ, Moreno PM, Bracero F, Castillo JL, Salinero J. Servicio de ORL, Hospital Universitario Virgen de las Nieves, Granada, Espana.

Acta Otorrinolaringol Esp. 2000 Jan-Feb;51(1):25-30.

The structured clinical history is the most sensitive test for diagnosing vertigo. Its diagnostic effectiveness on the first visit was analyzed and key signs and symptoms with high predictive value for common causes of vertigo were identified. One hundred outpatients who complained of dizziness or loss of balance were evaluated using a structured clinical interview. Each questionnaire was examined independently by three blinded investigators, who assigned a diagnosis and identified the elements of the history that figured most prominently in the diagnosis. The gold standard was defined as independent selection of the same diagnostic category by all three investigators. A first-visit diagnosis was obtained in 40% of patients (95% confidence interval 30-50%): 38% women and 42% men. Causes included benign positional paroxysmal vertigo (BPPV, 13 patients), headache-associated vertigo (9), Meniere disease (7), cervical vertigo (3), psychiatric dizziness (2), post-traumatic vertigo (2), vertebro-basilar transient ischemic attack (1), vestibular neuritis (1), convulsive seizure (1), and presyncope (1). The best predictors of BPPV were the precipitating mechanism (specificity [SP] 100%), positional nystagmus (sensitivity [SE] 90%, SP 63%), and the Dix-Hallpike test (SE 82%, SP 71%). Elements predictive of headache-associated vertigo were duration of the attack (minutes) and a personal history of headache (both, SP 100%). Other predictors were facial hypoesthesia (SE 92%, SP 47%) and associated neurological disease (SE 82%, SP 58%).

### **Postural restrictions in labyrintholithiasis.**

Marciano E, Marcelli V. Department of Neuroscience and Behavioral Science, Audiology Unit, School of Medicine, University of Naples, Federico II, Viale degli Astronauti 19, Italy. marciano@unina.it

Eur Arch Otorhinolaryngol. 2002 May;259(5):262-5. Epub 2002 Mar 19.

Benign paroxysmal positional vertigo (BPPV) is the most frequent labyrinthopathy in humans. Treatment consists mainly of liberatory maneuvers aiming to remove otolithic debris and subsequent postural restrictions in order to prevent debris from returning into the canal. The reappearance of symptoms after an effective liberatory maneuver was studied in a group subjected to restrictions and in a second group free from restrictions. The effects of these restrictions were evaluated. No statistically significant difference was found between the groups. Accordingly, restrictions seem to have no effect upon symptom recurrence. The slight supremacy of the Semont maneuver and the prevalence of subsequent relapse compared with the Epley maneuver suggests that these maneuvers could operate on different disorders (cupulolithiasis versus canalolithiasis). Finally, late recognition of relapse in patients who undergo restrictions might even make the liberatory maneuver less effective.

### **The physiopathological, clinical and therapeutic aspects of vertigo in peripheral vestibular lesions.**

Megighian D.

Arch Otorhinolaryngol. 1984;241(1):23-34.

The characteristics of vertigo in the pathology of vestibular peripheral lesions are differentiated and described. Symptomatology and clinical aspects are also discussed in the light of the physiopathological mechanisms of vestibular compensation. The therapeutic problem of vertigo is treated on the basis of experimental research on the inhibitory effect of some drugs on the vestibulo-ocular reflex.

### **Unrecognized benign paroxysmal positional vertigo in elderly patients.**

Oghalai JS, Manolidis S, Barth JL, Stewart MG, Jenkins HA, Bobby R, Alford Department of Otorhinolaryngology and Communicative Sciences, Baylor College of Medicine, Houston, TX 77030, USA.

Otolaryngol Head Neck Surg. 2000 May;122(5):630-4.

Balance disorders in elderly patients are associated with an increased risk of falls but are often difficult to diagnose because of comorbid chronic medical problems. We performed a cross-sectional study to determine the prevalence of unrecognized benign paroxysmal positional vertigo (BPPV) and associated lifestyle sequelae in a public, inner-city geriatric population. Dizziness was found in 61% of patients, whereas balance disorders were found in 77% of patients. Nine percent were found to have unrecognized BPPV. Multivariate analysis demonstrated that the presence of a spinning sensation and the absence of a lightheadedness sensation predicted the presence of unrecognized BPPV. Patients with unrecognized BPPV were more likely to have reduced activities of daily living scores, to have sustained a fall in the previous 3 months, and to have depression. These data indicate that unrecognized BPPV is common within the elderly population and has associated morbidity. Further prospective studies are warranted.

### **[Results of combined treatment for vestibular receptor impairment with physical therapy and Ginkgo biloba extract (Egb 761)] [Article in Polish]**

Orendorz-Fraczkowska K, Pospiech L, Gawron W. Katedra i Klinika Otolaryngologii AM we Wroclawiu.

Otolaryngol Pol. 2002;56(1):83-8.

Vestibular receptor impairment causes symptoms called vestibular organ peripheral lesion syndrome. Subjective and objective symptoms of vestibular lesion diminish gradually in the process of vestibular compensation. Stimulating a patient to action is a basic factor that influences on the compensation process. The aim of our studies was an evaluation of treatment results in patients with vertigo of peripheral origin with the use of ginkgo biloba extract together with kinezytherapy. Ginkgo biloba extract shows vasoactive, rheologic, metabolic and neural effects. We have examined 45 persons aged between 35 and 48 years (38 on average, 35 female, 13 male) with clinical symptoms of peripheral vestibular lesion. In each case we performed as follows: ORL physical examination, pure tone audiometry, suprathreshold audiometry, electronystagmography (eyes open and closed nystagmus, cervical tests, caloric tests according to Hallpike), static and dynamic posturography. In all of the cases vestibular rehabilitation originally programmed in our Clinic was applied. N 23 cases (17 female and 6 male) chosen at random, kinezytherapy together with ginkgo

biloba in tablet was applied: 2 tablets twice a day for 3 months. Control examination were performed on 30, 60 and 90 days of treatment. Treatment results evaluation was based on anamnesis, electronystagmography, static and dynamic posturography.

**CONCLUSIONS:** 1. In almost all of the cases with peripheral lesion of vestibular organ, after 30 days of application of ginkgo biloba extract together with kinezytherapy and without ginkgo biloba there was vestibular compensation confirmed in electronystagmography but there were disturbances in static and dynamic posturography. 2. Control examination in the course of treatment revealed gradual improvement in vestibular tests in both group (with and without biloba extract). But in patients treated with ginkgo biloba extract the improvement was more clear and faster in dynamic posturography. It implies central effect of ginkgo biloba extract that allows to gain full vestibular compensation sooner.

**[Bilateral semicircular canal pathology]** [Article in Italian]

Petrone D, De Candia N, Cassano P. Divisione di Otorinolaringoiatria ASL BA/4, Ospedale Civile di Bitonto, Bari.

Acta Otorhinolaryngol Ital. 1997 Jun;17(3):215-8.

The authors report 12 cases of bilateral cupulolithiasis found in 142 subjects diagnosed as having benign paroxysmal positional vertigo. A case history was taken for these patients (4 males, 8 females; average age 28 years) and 10 reported a previous cranial trauma while the remainder did not refer any previous condition of note. All patients had normal cochleovestibular test results and showed no signs of concomitant internal and/or central pathologies. The Hallpike maneuver was able to evoke an intense symmetrical paroxysmal vertigo and this was often accompanied by neurovegetative phenomena while paroxysmal nystagmus always appeared. The patients were treated with a rehabilitative technique: the Brandt-Daroff was preferred as it is better tolerated. Within 15 days all patients had full remission of symptoms and at 6 months after treatment there have been no signs of recurrence. The conclusion is, thus, drawn that while the technical characteristics of the Semont maneuver make it suitable only for use as rehabilitation in unilateral benign paroxysmal positional vertigo, this experience indicates that the Brandt-Daroff technique is better suited for the bilateral forms of this disorder.

**[The effect of pharmacological treatment in the compensation of vertigo]** [Article in Spanish]

Pons Rocher F. Servicio de O.R.L. Hospital Dr. Peset-S.V.S. Valencia.

An Otorrinolaringol Ibero Am. 1999;26(3):271-91.

From the age of sixty, vertigo is mainly due to vertebro-basilar insufficiency. It has been described that the association of Dihydroergocristine-Piracetam (D-P) is a useful treatment for vertebro-basilar insufficiency. That is why we have designed a comparative study between D-P and a Placebo, so that to prove if this association can be useful in the treatment of vertigo occasioned by cerebrovascular insufficiency. Fifty patients complaining of vertigo were included in the study after an untreated term. 19 received a daily capsule of Placebo, and the other 31, treated with D-P, were divided in two groups: 16 patients received a dose of 3 mg Dihydroergocristine + 1.6 g Piracetam every 12 hours per os; and 15 other were treated with 1.5 mg Dihydroergocristine + 0.8 g Piracetam every 8 hours during 90 days. The patients were evaluated at the beginning of the study and 90 days later, with anamnesis and vestibular tests. In the last consultation the patients autoevaluated themselves the effect and the tolerance to the drugs received. In the Placebo group it was observed an improvement or disappearance of vertiginous symptoms in the 68.5% of the cases, while with D-P was 93.7% at the dose of 3 mg Dihydroergocristine + 1.6 g Piracetam each 12 hours and 100% with the dose 1.5 mg Dihydroergocristine + 0.8 g Piracetam each 8 hours. None of the treated patients with D-P worsened their symptoms. We observe a considerable decrease in the number of patients with vegetative symptoms in the group treated with D-P related to the Placebo group, though the symptoms persisted more time in the group treated with D-P than in the Placebo group. The group treated with D-P get a higher percentage of improvements and disappearance of auditive and cervical symptoms than the groups treated with Placebo. In the vestibulo-spinal and cerebellous tests it was observed a better improvement with D-P at the dose of 1.5 mg of Dihydroergocristine + 0.8 g Piracetam each hours compared with the other two groups. It can be concluded that the association D-P is an effective treatment for vertigo, getting also a higher normalization of the vestibular tests than Placebo.

**[Diagnosis and management of benign paroxysmal positional vertigo]** [Article in German]

Schmal F, Stoll W. Hals-Nasen-Ohrenklinik des Universitätsklinikums Munster.

Laryngorhinootologie. 2002 May;81(5):368-80.

Benign paroxysmal positional vertigo (BPPV) is a common disorder of the vestibular labyrinth which should be suspected in all patients with a history of vertigo during changes of head position. The BPPV appears to be caused by free-floating debris in the posterior semicircular canal. The diagnosis is confirmed by eliciting characteristic symptoms during the Dix-Hallpike test. Although the BPPV usually is a self-limited disorder treatment with a specific bedside maneuver is effective and can shorten the duration of

symptoms.

**Benign paroxysmal vertigo: a comparative prospective study of the efficacy of Brandt and Daroff exercises, Semont and Epley maneuver.**

Soto Varela A, Bartual Magro J, Santos Perez S, Velez Regueiro M, Lechuga Garcia R, Perez-Carro Rios A, Caballero L. University Hospital Complex, Clinic of Otorhinolaryngology, Travesia da Choupana, s/n. Santiago de Compostela, Spain.

Rev Laryngol Otol Rhinol (Bord). 2001;122(3):179-83.

We performed a prospective study to evaluate the efficacy of three physical treatments for benign paroxysmal positional vertigo: Brandt & Daroff habituation exercises, the Semont manoeuvre (intended as a statoconia-detachment maneuver), and the Epley maneuver (intended as a statoconia-repositioning maneuver). A total of 106 BPPV patients were randomly assigned to one of the three treatment groups, and responses were evaluated one week, one month and three months after the initial treatment. At the one-week follow-up, similar cure rates were obtained with the Semont and Epley maneuver (74% and 71% respectively), both cure rates being significantly higher than that obtained with Brandt & Daroff exercises (24%). By the three-month follow-up, the cure rate obtained with the Epley maneuver was higher (93%) than that obtained with the Semont maneuver (77%), though both remained higher than that obtained with the Brandt & Daroff maneuver (62%). However, the proportion of initially responding patients showing subsequent relapse was lower among patients treated by the Semont maneuver than among patients treated by the Epley maneuver. In view of these findings, we propose a treatment algorithm for patients with BPPV.

**[Horizontal canal benign paroxysmal positional vertigo (HC-BPPV) with direction-changing apogeotropic nystagmus: a case with the more-triggering side altering over a short-term]** [Article in Japanese]

Takaya S, Yamamoto T. Department of Neurology, Osaka Saiseikai Nakatsu Hospital, 2-10-39 Shibata, Kita-ku, Osaka 530-0012, Japan.

No To Shinkei. 2002 Apr;54(4):321-5.

We report a 44-year-old man who had apogeotropic nystagmus with the rotation of his head to either side from the supine position. His nystagmus lasted more than 2 minutes and was difficult to treat with. There were no neurological abnormalities except for the nystagmus and no findings suggesting intracranial disease on MRI. The head-position in which more intense nystagmus was evoked changed again and again in a short term. We diagnosed his illness as cupulolithiasis of horizontal canal, however, the affected ear could not be explained by any of the previously supposed mechanisms. In our case, we speculate the following mechanism. Otoliths were located on the right utricular side of the cupula. All of them were attached on the cupula at the beginning (attached phase) and then, some of them were detached from it(detached phase). The extent of the cupular deviation differed in each phase when the otoliths were beneath the cupula with his head turned to the left lateral position. According to Ewald's second law, more intense nystagmus is evoked when the cupula deviates toward the utricle than away from it. The patient's head-position in which more intense nystagmus was evoked changed according to the balance between the effect of Ewald's second law and the amount of otoliths detached from cupula. Our case showed that, in HC-BPPV with direction-changing apogeotropic nystagmus, we could not be certain about which ear was diseased. Therefore, it may be difficult to apply exercise therapy by determining the affected ear based on the head-position in which more intense nystagmus is evoked.

**Eds.**

Tierney, L., McPhee, S.J., Papadakis, M.A.,

In Current Medical Diagnosis and Treatment, Fortieth Edition 2001, pp. 226-31. New York: McGraw-Hill.

**Acute labyrinthine vertigo.**

Turner, J.S., Jr.

Medicine for the Practicing Physician, Fourth Edition 1996, pp. 1874-5. Stamford, CT: Appleton and Lange.

**Benign paroxysmal positional vertigo.**

Tusa RJ. Department of Neurology, Center for Rehabilitation Medicine, Emory University, 1441 Clifton Road, NE, Atlanta, GA 30322, USA. rtusa@rmy.emory.edu

Curr Neurol Neurosci Rep. 2001 Sep;1(5):478-85.

Benign paroxysmal positional vertigo (BPPV) is the most common and most treatable cause of vertigo. In most cases, a simple maneuver that takes less than a few minutes to do resolves the problem. BPPV is caused by misplaced calcium carbonate crystals (otoconia) in the semicircular canal of the inner ear that have broken free from the utricle. When these crystals break free, they either remain loose in one of three different semicircular canals or attach to the hair cells within a canal. Several different types of treatment maneuvers have been described. The maneuver to use varies according to the semicircular canal involved and whether the crystals are loose or attached to the hair cells.

**[Clinical features of benign paroxysmal positional vertigo]** [Article in Japanese]

Uno A, Moriwaki K, Kato T, Nagai M, Sakata Y. Department of Otolaryngology, Suita Municipal Hospital, Osaka.

Nippon Jibiinkoka Gakkai Kaiho. 2001 Jan;104(1):9-16.

Our understanding of the pathomechanism of benign paroxysmal positional vertigo (BPPV) has improved dramatically. A type of BPPV featuring mixed torsional and vertical nystagmus induced by the Dix-Hallpike maneuver involves the posterior semicircular canal (P-BPPV). The other type of BPPV featuring horizontal nystagmus induced by spine-to-lateral head positioning involves the horizontal canal BPPV (H-BPPV). In complaints of vertigo or dizziness, 619 patients visited our department last year. Of these, 142 (23%) had positional nystagmus consistent with a diagnosis of BPPV, 118 (19%) had no nystagmus but were suspected of BPPV due to vertigo episodes. BPPV was the most frequent diagnosis. H-BPPV was not rare, but accounted for 30% of BPPV. Of H-BPPV, 73% featured direction changing geotropic nystagmus, and 27% direction changing apogeotropic nystagmus. H-BPPV resolved faster than P-BPPV. Most cases caused by head trauma were P-BPPV. Transition between P- and H-BPPV was found in 6 cases. Women outnumbered men by about 3 to 2 in both P- and H-BPPV. Peak incidence was found in those in their 60s and 70s, suggesting that the etiologies of both types of BPPV are essentially the same.

**[Medical management of patients with benign paroxysmal positional vertigo]** [Article in German]

von Brevern M, Lezius F, Tiel-Wilk K, Lempert T. Neurologische Klinik Charite, Campus Virchow-Klinikum, Augustenburger Platz 1, 13353 Berlin. michael.von\_brevern@charite.de

Nervenarzt. 2002 Jun;73(6):538-42.

Benign paroxysmal positional vertigo (BPPV) is the most common vestibular disorder which can be simply diagnosed. The evolution of highly effective positioning maneuvers has made BPPV the most successfully treatable cause of vertigo. We evaluated patients with BPPV with regard to past medical history and disease-related diagnostic and therapeutic procedures. Forty-two patients were recruited from a specialised dizziness clinic, and a further 29 patients were recruited from a neurological practice. The mean duration of the disease was 3.2 years, with an average of 2.4 episodes lasting typically several weeks to months. More than half of the patients felt severely disabled by BPPV. On average, three different medical specialities were consulted. Cerebral imaging (42%), caloric testing (46%), and audiometry (49%) were performed more often than diagnostic positioning (28%). Most patients received ineffective or no therapy, and only 4% were treated with a specific therapeutic positioning maneuver. Benign paroxysmal positional vertigo is a long-lasting and frequently recurrent disease which leads to significant morbidity and medical costs. The recent progress in the diagnosis and therapy of BPPV has not yet been widely established in medical practice in Germany.

## VERTIGO (Page 2)

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  - > The treatment of minocycline-induced brainstem vertigo by the combined administration of piracetam and ergotoxin.
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### **[Evaluation of the therapeutic effectiveness of a piracetam plus dihydroergocristine combination in the treatment of vertigo]**

Lopez Martinez R  
Acta Otorrinolaringol Esp (Spain) Jul-Aug 1988, 39 (4) p287-8.

No abstract.

### **[Treatment of vertigo syndrome with Nootropil]**

Miszke A; Rapacz K  
Otolaryngol Pol (Poland) 1988, 42 (5) p312-7.

No abstract.

### **The efficacy of piracetam in vertigo. A double-blind study in patients with vertigo of central origin.**

Oosterveld WJ  
Arzneimittelforschung (Germany, West) 1980, 30 (11) p1947-9.

In a double-blind trial according to a switchback design with 4 periods of one week each a comparison was made between the effects of piracetam and a placebo. In 22 patients with vertigo of central origin (posttraumatic, psychogenic, ecileptogenic and hypertensive vertigo were excluded) piracetam was found to significantly reduce symptoms. On anamnestic examination the patients noted the effect of both substances on vertigo, motility disturbances, vitality and sleep. Piracetam was found to have a significant effect on the first three. The effect of piracetam is explained by an enhanced control of the cerebral cortex on the subordinated vestibular centers, in agreement with findings in the literature on animal and human pharmacology.

## **The balancing outcome of a pharmacological treatment by vertiginous patients**

Rocher F.P.

Dr. F.P. Rocher, Rotova 50, 46700 Gandia (Valencia) Spain

Anales Otorrinolaringologicos Ibero-Americanos (Spain) 1999, 26/3 (271-291)

From the age of sixty, vertigo is mainly due to vertebro-basilar insufficiency. It has been described that the association of Dihydroergocristine-Piracetam (D-P) is a usefull treatment for vertebro- basilar insufficiency. That is why we have designed a comparative study between D-P an a Placebo, so that prove if this association can be usefull in the treatment of vertigo occassionated by cerebrovascular insufficiency. Fifty patients complaining of vertigo were included in the study after an untreatment term. 19 received a daily capsule of Placebo, and the other 31, treated with D-P, were divided in two groups: 16 patients received a dose of 3 mg Dihydroergocristine + 1,6 g Piracetam every 12 hours per os; and 15 other were treated with 1,5 mg Dihydroergocristine + 0,8 g Piracetam every 8 hours during 90 days. The patients were evaluated at the beginning of the study and 90 days later, with anamnesis and vestibular tests. In the last consultation the patients autoevaluated themselves the effect and the tolerance to the drugs received. In the Placebo group it was observed an improvement or disappearance of vertiginous symptoms in the 68,5% of the cases, while with D-P was 93,7% at the dose of 3 mg Dihydroergocristine + 1,6 Piracetam each 12 hours and 100% with the dose 1,5 mg Dihydroergocristine + 0,8 Piracetam each 8 hours. None of the treated patients with D-P worsened their symptoms. We observe a considerable decrease in the number of patients with vegetative symptoms in the group treated with D-P related to the Placebo group, though the symptoms persisted more time in the group treated with D-P that in the Placebo group. The group treated with D-P get a higher percentage of improvements and disappearance of auditive and cervical symptoms that the group treated with Placebo. In the vestibulo-spinal and cerebellous tests it was observed a better improvement with D-P at the dose of 1,5 mg of Dihydroergocristine + 0,8 g Piracetam each hours compared with the other two groups. It can be concluded that the association D-P is an effective treatment for vertigo, getting also a higher normalization of the vestibular tests than Placebo.

## **Dizziness and dizzy feeling in the elderly: Treatment**

Marquet T.; Belmin J.

J. Belmin, Serv. Medecine Interne Geriatrique, Hopital Rene Muret-Bigottini, 93720 Sevran France

Revue de Geriatrie (France) 1997, 22/7 (457-462)

No abstract.

## **Disabling acute vertigo attack**

Moussalle S.

Servicio de Otorrinolaringologia, Faculdade de Medicina, Pontificia Universidade Catolica,Rio Grande Do Sul Brazil

Revista Brasileira de Otorrinolaringologia (Brazil) 1994, 60/4 (326)

No abstract.

## **Vertigo**

Gananca M.M.; Caovilla H.H.; Gananca F.F.; De Toledo Piza Peluso E.

Rua Dr. A. de Campos Rodrigues, 309,CEP 04544-000, Sao Paulo Brazil

The importance of the neurootological evaluation was justified in order to establish the adequate diagnosis for the adequate therapy. Very good results can be obtained in the treatment of vertigo by the use of drugs, rehabilitation exercises and nutritional diets. Surgery is indicated in some particular cases.

### **Hemorheologic therapy of vertigo**

Spurk P.; Dehnert H.G.; Angelkort B.  
St. Vincenzkrankenhaus, D-5750 Menden 1 Germany  
Vasa - Journal of Vascular Diseases (Switzerland) 1991, 20/Suppl. 33 (169-170)

Hemorheological treatment in vertigo. Depending on data of hemorheology disturbances in risk factors and carotid artery atherosclerosis-progression in vertigo on non-vestibular origin this study evaluates treatment effects by basis, i.e. correction of risk factors only, versus additional hemorheological treatment (Lowering hct., HAES, Pentoxifylline). Patients: N = 88 fe.51 m 37 age 25-86 mean 65.1. Results: ++ base gr. 35% hemorh. 62% + base gr. 40% hem. 38% no effect base gr. 25% hemorh. none.

### **Vertigo, dysarthria and hemiparesis in a 71 year-old woman**

Vespignani H.; Defer G.; Gray F.  
Service de Neurologie, Nancy France  
Revue Neurologique (France) 1991, 147/11 (752-758)

No abstract.

### **Drugs for dizziness; exploitation of medical incapability**

Van Gijn J.  
Vakgroep Neurologie, Academisch Ziekenhuis, Postbus 85500, 3508 GA Utrecht Netherlands  
Nederlands Tijdschrift voor Geneeskunde (Netherlands) 1991, 135/14 (599-603)

No abstract.

### **Vertigo syndrome treatment by nootropil**

Miszke A.; Rapacz K.  
Oddzial Otolaryngologiczny KSZ im G. Narutowicza, Krakow Poland  
Otolaryngologia Polska (Poland) 1988, 42/5 (312-317)

No abstract.

### **Clinic assay on the association piracetam and dihydroergocristine in vertigo of several etiologies**

Ordosgoitia H.; Castro C.; Carbayeda M.; Labella T.  
Facultad de Medicina, Catedra de O.R.L., 15704 Santiago de Compostela Spain  
Anales Otorrinolaringologicos Ibero-Americanos (Spain) 1989, 16/3 (271-279)

No abstract.

## **Treatment of vertigo with piracetam: Comparison with placebo in 50 cases**

Haguenauer J.-P.  
Gazette Medicale (France) 1986, 93/28 (67-70)

No abstract.

## **Current concepts in management**

Oosterveld W.J.  
Vestibular Department, Ear, Nose and Throat Clinic, Academisch Medisch Centrum, Amsterdam Netherlands  
Drugs (Australia) 1985, 30/3 (275-283)

Vertigo is not a disease, but a symptom. The management of vertigo requires more than the treatment of the symptom alone, as it concerns the whole physical and psychological condition of the patient. In addition to causal treatment, symptomatic treatment is needed in many cases. This specific treatment consists of vestibular exercises and drug therapy. The efficacy and use of the different drugs available are discussed.

## **The effect of piracetam (Nootropil, UCB 6215) upon the late symptoms of patients with head injuries**

Aantaa E.; Meurman O.H.  
Otolaryngol. Univ. Clin., Turku Finland  
Journal of International Medical Research 1975, 3/5 (352-355)

Sixty patients whose head injuries had occurred 2-6 mth previously were examined in a double blind trial to demonstrate the effect of piracetam (UCB 6215) upon late symptoms. A significantly better result of treatment of vertigo was established in the piracetam group compared to the placebo group. The disappearance of symptoms of vertigo could also be objectively established by diminished spontaneous and positional nystagmus as well as diminished pendel deviations with eyes closed. No significant change during the period of treatment could be established with respect to the caloric test.

## **Piracetam in patients with chronic vertigo. Results of a double-blind, placebo-controlled study**

Rosenhall U.; Deberdt W.; Friberg U.; Kerr A.; Oosterveld W.  
UCB Pharma, International Development, Chemin du Foriest, B-1420 Braine-l'Alleud Belgium  
Clinical Drug Investigation (New Zealand), 1996, 11/5 (251-260)

The nootropic agent piracetam, which exerts diverse effects through actions on cerebral neurotr reported to alleviate vertigo. We performed a multicentre, double-blind, placebo-controlled study to assess the efficacy and tolerability of piracetam 800 mg 3 times daily orally for 8 weeks. The study group consisted of 143 middle-aged and elderly outpatients of ear, nose and throat clinics who had suffered from vertigo for at least 3 months, had experienced at least 3 episodes per month, and the vertigo was severe enough to disrupt daily life. Primary outcome measures were patient self-evaluations of vertigo: the frequency of episodes, and their severity using visual analogue scales (VAS). Malaise and imbalance between episodes (VAS), the effect of vertigo on walking (VAS), the duration of incapacity, and overall evaluations by patients and investigators were also assessed. On entry, episodes were more frequent ( $p < 0.05$ ) and malaise between episodes more severe ( $p < 0.05$ ) in the piracetam group. Data were not evaluable in 54 patients because of either adverse events (12 piracetam, 12 placebo) or protocol deviations. An intention-to-treat analysis showed that episodes of vertigo were less frequent ( $p < 0.03$ ) but not less severe on piracetam than on placebo: interval malaise ( $p < 0.05$ ) and imbalance ( $p < 0.01$ ) improved more and the duration of incapacity was less ( $p < 0.05$ ). These changes, which were maximal after 8 weeks' medication, had almost disappeared 4 weeks after the end of treatment. Tolerance to piracetam was good, with few drug-related adverse events occurring. These findings provide further evidence that piracetam alleviates vertigo by reducing the frequency of episodes, the severity of malaise and imbalance between episodes, and the duration of associated incapacity.

## **Nootropics: Efficacy and tolerability of products from three active substance classes**

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Journal of Drug Development and Clinical Practice (United Kingdom), 1996, 8/2 (77-94)

This paper reviews and evaluates all the currently available clinical trials on the efficacy of three nootropics. Only randomised, double-blind, placebo-controlled clinical trials were taken into account which produced 44 studies allowing comparison of the patient populations, efficacy and tolerability of Ginkgo biloba special extracts, nimodipine and tacrine. Taking all the studies together, statistically significant results were obtained at three relevant levels of efficacy (psychopathological, psychometric, behavioural) for all three substances. Nine studies produced significant results at all three efficacy levels. One study on Ginkgo biloba and one on tacrine also produced significant rationalised diagnosis of dementia, inclusion of mild-to-moderate cases, statistical proof at all three levels of efficacy and global clinical evaluation). The clinical efficacy of all three substances has thus been demonstrated.

## **The effect of ginkgo biloba glycoside on the blood viscosity and erythrocyte deformability**

Erdinciler D.S.; Karakoc Y.; Toplan S.; Onen S.; Sukyasyan A.; Beger T.; Demiroglu C.

Gerontology Division, Department of Internal Medicine, I.U. Cerrahpasa Medical Faculty, Istanbul Turkey

Clinical Hemorheology (USA), 1996, 16/3 (271-276)

In this study, we investigated the effect of ginkgoglycoside in two different doses (19.2 mg/day and 28.8 mg/day) on blood viscosity and erythrocyte deformability in 27 patients suffering from cerebrovascular insufficiency. The patients were divided into two groups randomly consisting of 13 and 14 patients respectively. Both groups received 28.8 mg/day ginkgoglycoside between the 1st and 15th day. The first group received the same dose until the end of the 30th day, whereas the dose administered to the second group was reduced to 19.2 mg/day. In the first group, during 30 days a significant decrease in blood viscosity and a significant increase in erythrocyte deformability were observed. In the second group on the other hand, after dose reduction, the effect of the drug on blood viscosity and erythrocyte deformability were diminished. Improvement of symptoms including vertigo, tinnitus, headache and forgetfulness in the first group was found to be significantly different from the 2nd group at day 30 in a dose dependent manner.

## **[Clinical trial of the use of the combination of piracetam and dihydroergocristine in vertigo from different causes]**

Ordosgoitia H, Castro C, Carbayeda M, Labella T

An Otorrinolaringol Ibero Am. 1989;16(3):271-9

We report on the therapeutic effect of a combination of piracetam and dihydroergocristine in 55 vertiginous patients, of both sexes, between 20 and 67 years of age, from different causes (not scheduled for surgery). The trial lasted 3 months, and the drugs were taken twice daily. Aside from one case who stopped the drug therapy because of intolerance, the conclusions drawn by the AA. are seemingly good, both subjectively and objectively (audiometric and electronystagmographic tracings).

## **[Treatment of vertigo syndrome with Nootropil]**

Miszke A, Rapacz K

Otolaryngol Pol (Poland) 1988, 42 (5) p312-7

No abstract.

## **The use of piracetam in vertigo.**

Fernandes CM; Samuel J

A pilot study with piracetam (Nootropil; UCB) was performed in 5 selected dizzy patients who had a diagnosis of presbyvertigo or vertebrobasilar insufficiency. The study was monitored by assessing the effect of piracetam on the pursuit-tracking system. All patients showed a remarkable improvement in their pursuit tracking, in addition to marked subjective improvement in their vertigo.

### **The efficacy of piracetam in vertigo. A double-blind study in patients with vertigo of central origin.**

Oosterveld WJ.

Arzneimittelforschung. 1980;30(11):1947-9.

In a double-blind trial according to a switchback design with 4 periods of one week each a comparison was made between the effects of piracetam and a placebo. In 22 patients with vertigo of central origin (posttraumatic, psychogenic, ecileptogenic and hypertensive vertigo were excluded) piracetam was found to significantly reduce symptoms. On anamnestic examination the patients noted the effect of both substances on vertigo, motility disturbances, vitality and sleep. Piracetam was found to have a significant effect on the first three. The effect of piracetam is explained by an enhanced control of the cerebral cortex on the subordinated vestibular centers, in agreement with findings in the literature on animal and human pharmacology.

### **Piracetam in the treatment of post-concussional syndrome. A double-blind study.**

Hakkarainen H; Hakamies L

Eur Neurol (Switzerland) 1978, 17 (1) p50-5

The effect of piracetam, a cyclical derivative of GABA, was compared with that of a placebo in a double-blind study of 60 patients with post-concussional syndrome of 2-12 months' duration. The daily dose of piracetam was 4,800 mg. After 8 weeks of treatment piracetam significantly reduced the occurrence and severity of the following symptoms: vertigo, headache, tiredness, decreased alertness, increased sweating and neurasthenic symptoms. No significant effect was observed on the following symptoms: tremor, orthostatic symptoms, and memory disorders. Side effect were reported by 64% of the patients under piracetam and by 32% under placebo. In the author's opinion, piracetam seems to be a promising new drug for the treatment of post-concussional syndrome.

### **[Evaluation of the therapeutic effectiveness of a piracetam plus dihydroergocristine combination in the treatment of vertigo]**

Lopez Martinez R.

Acta Otorrinolaringol Esp. 1988 Jul-Aug;39(4):287-8.

No abstract.

### **[Hydergine in pathology of the inner ear]**

Jimenez-Cervantes Nicolas J, Amoros Rodriguez LM

An Otorrinolaringol Ibero Am (1990) 17(1):85-98

There have been treated a total of 20 patients with troubles on the cochlear compartment and/or vestibular level which have been clinically expressed by a perceptive hypoacusia, tinnitus and rotatory vertigo. The final evaluation is referred to 17 patients, since three patients do not appear for control. All patients were treated only with Hydergine, on doses of 30 drops thrice daily, which is the equivalent to 4.5 mg/day of active substance. This treatment remained unaltered till the end of the last control. Controls have been effected after 30, 60 and 90 days of starting the treatment. In each control there was evaluated the subjective improvement of vertigo, tinnitus and hypoacusia when effecting to all patients by means of liminar- supraliminar- and automaticaudiometry, impedancimetry, T one-decay-test and electrooculonistagmography. The most meliorated symptomatology was vertigo, with a global improvement of 93.7 per cent on the treated patients. Tinnitus improve by 57.1 per cent and hypoacusia by 20 per cent. There is a total correspondence between the subjective data furnished by the patients and the objective tests carried out in the successive controls.

### **[The elimination of chemotherapy side effects in pulmonary tuberculosis patients]**

Bal'tseva LB; Mel'nik GV; Man'ko VP  
Vrach Delo (USSR) Apr 1990, (4) p71-3

Neurotoxic side-effects of tuberculosis chemotherapy occurred in 14.9% of patients with tuberculosis treated prophylactically with intramuscular pyridoxine infusions. Use of small doses of nootropil (piracetam) allowed to control the side-effects (headache and vertigo, sleep disorders, irritation, memory disorders) and to continue treatment with isoniazide, one of the most potent tuberculostatic agents.

### **The treatment of minocycline-induced brainstem vertigo by the combined administration of piracetam and ergotoxin.**

Claussen CF, Schneider D, Patil NP  
Acta Otolaryngol Suppl (Stockh). 1989;468:171-4.

Two randomized studies to test the efficacy of a combination of Piracetam and Ergotoxin on the destabilized brainstem are reported. In the first study, a pharmacological model using Minocycline is employed. A follow-up clinical study analysed the effect of the preparation in 5 patients suffering from vertigo and other related complaints. It was seen that there was a significant improvement in the nystagmus profiles of the pharmacological model volunteers. Similarly, the patient group showed a marked improvement in symptoms, and in orientation capability as tested by Cranio-Corpo-Graphy.

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