



Treating Vertigo – Homeopathic Combination Remedy Therapeutically Equivalent to Dimenhydrinate

**Results of a Reference-Controlled Cohort
Study**

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Abstract

This prospective, reference-controlled cohort study compared the efficacy of Vertigoheel and dimenhydrinate as therapies for vertigo. 774 patients suffering from either vestibular or nonvestibular vertigo were treated with Vertigoheel (n = 352) or with dimenhydrinate (n = 422). The main criteria for evaluating efficacy were: 1) physicians' ratings of overall efficacy and 2) reductions in the number, duration, and intensity of vertigo attacks during a maximum of eight weeks of therapy. Upon completion of the study, significant and clinically relevant reductions in initial symptoms had occurred in both treatment groups. The results of therapy were rated "very good" (no symptoms) or "good" (obvious improvement) in 88% of the Vertigoheel patients and 87% of the dimenhydrinate patients. Tolerability of both medications was rated "very good" or "good" in over 98% of the cases. The study confirms that Vertigoheel is a safe and effective treatment option for vertigo of varying etiology and is therapeutically equivalent to medications containing dimenhydrinate.

Keywords: Antihomotoxic medicine, cohort study, dimenhydrinate, homeopathy, vertigo, Vertigoheel

Introduction

The symptom of vertigo often conceals a multifactorial process that may manifest in diseases of the outer vestibular apparatus, in disorders of the central nervous system with vestibular involvement, or in diseases of other organs with secondary effects on the central nervous system (1). Clearly, the vertigo that causes patients to seek the services of an otolaryngologist or general practitioner can suggest a number of different underlying illnesses. Frequent triggers of vertigo include hemodynamic, metabolic, or mechanical changes caused by disturbances in conduction pathways and coordination centers. Vertigo symptoms are most often due to malfunctioning proprioception or faulty processing of tactile sensations, which can cause almost complete loss of spatial orientation during a vertigo attack. The sensation of vertigo is often accompanied by sudden onset of subjective, autonomic symptoms such as nausea, vomiting, perspiration, unsteadiness, and listlessness. In contrast to rotatory (or *peripheral vestibular*) and staggering (or *central vestibular*) vertigo, *cardiovascular* vertigo is typically accompanied by lightheadedness, grogginess, and visual disturbances as well as by other forms of orthostatic dysregulation due to hypertension, hypotension, or anemia (1).

As a rule, differential diagnosis of vertigo involves a series of increasingly refined anamnestic and diagnostic steps that may require specialized services such as electronystagmography, testing with Frenzel goggles, and otolaryngological, neurological, and ophthalmological examinations. Control of autonomic symptoms in particular often requires prescribing multi-

ple antivertigo drugs that suppress the vestibular apparatus and/or have hemodynamic or rheological effects. These medications are often sedating, restricting the patient's mobility and rendering the results of vestibular testing unreliable. The importance of seeking gentle yet effective alternatives such as homeopathic medications is obvious.

Vertigoheel (manufactured by Biologische Heilmittel Heel GmbH of Baden-Baden, Germany) contains homeopathic dilutions of *Ambra grisea*, *Anamirra cocculus*, *Conium maculatum*, and *Petroleum rectificatum*. Its use in both acute and chronic vertigo has been the subject of multiple clinical studies (2–6).

Methods

Design

To assess efficacy and tolerability of Vertigoheel (tablets), a reference-controlled cohort study was conducted on patients suffering from either vestibular or nonvestibular vertigo. Investigation focused on the medication's effect on the number, duration, and intensity of vertigo attacks. For purposes of comparison and to permit objective assessment of the results, a parallel study was conducted using the antivertigo drug dimenhydrinate, an antiemetic and histamine H₁ receptor antagonist that has been used as a reference substance in comparison studies of other drugs and has also been the subject of numerous clinical, placebo-controlled tests (7–10). A total of 159 licensed physicians (family practitioners and otolaryngologists) participated in the study. In addition to the required examinations at the beginning and end of

the study, the physicians observed each patient during two additional appointments approximately two and four weeks after the beginning of the study.

Patients

To describe the patient sample, the following demographic and anamnestic criteria were recorded:

- age of patient
- gender
- vital parameters (pulse, blood pressure, height, weight)
- general risk factors (e.g., consumption of nicotine/caffeine/alcohol)
- differential diagnostic description of the vertigo (vestibular or nonvestibular)
- cause(s) of the vertigo (underlying illness)
- associated (autonomic) symptoms
- duration of illness
- concomitant disorders and current treatment

Treatment

To ensure representative sampling and comparability of data, parallel treatment with other antivertigo drugs was not allowed during the study, but nonpharmaceutical adjuvant therapies (e.g., external therapies) were permitted. Furthermore, the drug dimenhydrinate was to be taken only in the form of 50 mg tablets. The actual dosage of dimenhydrinate or Vertigoheel was left to the discretion of the physicians, as was the duration of treatment in each individual case (up to a maximum of eight weeks). The physicians were required to report how they treated the underlying illness that presumably contributed to each patient's vertigo.

Premature termination

Therapy with Vertigoheel or dimenhydrinate could be terminated at any time during the eight-week treatment period, but the physicians were required to report the reason for termination (e.g., inadequate efficacy, adverse effects, freedom from vertigo symptoms).

Target criteria

During the initial examination, at a maximum of two monitoring examinations (at

approximately two and four weeks), and at the end of the study, efficacy and tolerability of each treatment was monitored by recording data on the following criteria:

Degree of vertigo

- average daily *duration* of vertigo attacks (during the last week)
 - 0 = no vertigo attacks
 - 1 = 0 to 2 minutes
 - 2 = 2 to 10 minutes
 - 3 = 11 to 60 minutes
 - 4 = 1 to 6 hours
 - 5 = more than 6 hours
- average daily *severity* of vertigo attacks (during the last week)
 - 0 = no vertigo
 - 1 = mild
 - 2 = moderate
 - 3 = severe
 - 4 = very severe
- average number of vertigo attacks per day (during the last week)

Associated symptoms

- nausea
- vomiting
- attacks of perspiration

Scale: 0 = none, 1 = mild, 2 = moderate, 3 = severe

Patient compliance

- very good = patient complied strictly with the therapy regimen
- good = patient followed the therapy regimen for the most part
- fair = patient followed the therapy regimen to some extent
- poor = patient did not follow the therapy regimen

Tolerability

- adverse effects
- overall assessment (by physician) at the end of the treatment/observation period:
 - very good = no intolerance reactions
 - good = occasional intolerance reactions
 - fair = frequent intolerance reactions
 - poor = intolerance reactions after every use

Onset of efficacy

- point in time when the first improve-

ment in vertigo symptoms was noted (Scale: 1 day, 2–3 days, 4–7 days, 1–2 weeks, 2–3 weeks, 3–4 weeks, 4–6 weeks, > 6 weeks, no improvement)

Results of therapy

- overall assessment (by physician) of the results achieved at the end of the treatment/observation period
 - very good = complete freedom from symptoms
 - good = clear improvement in symptoms of vertigo
 - fair = slight improvement
 - no success = symptoms remained the same
 - worse = symptoms worsened

Statistical analysis

Exploratory analysis of the data included calculating and graphing absolute and relative frequencies. The results were tabulated and contrasted; to compare the two treatment groups (dimenhydrinate and Vertigoheel), the difference between the treatment effects of the two therapies was calculated with 95% confidence ranges. Mean sum and symptom scores were calculated on the basis of the physicians' ratings of associated clinical symptoms. To verify that the treatment groups were equivalent, their respective demographic data, differential diagnoses, causes of the vertigo, and the physicians' final ratings were contrasted. The distribution of these baseline criteria between the treatment groups was described using statistical parameters and absolute and relative frequencies, and their influence on inclusion in the respective observation group was determined by means of logistical regression (propensity score). Patients with similar propensity scores show similar distribution of baseline criteria; hence, comparisons within appropriate propensity classes can reduce the influence of unequal baseline-criteria distribution on the treatment effect (11–13).

The criteria "average daily duration" and "average daily intensity" were rated on scales of 0 to 5 and 0 to 4, respectively (see above). Reductions over time in the average number of vertigo attacks and in the

Table: Demographic and anamnestic data on the patients (*multiple listings occurred)

Parameter	Vertigoheel	Dimenhydrinate
Patients (n)	352	422
Sex (n / %)		
– female	255 / 72.5	255 / 60.4
– male	87 / 24.7	161 / 38.2
– not given	10 / 2.8	6 / 1.4
Age (in years)		
mean / standard deviation	57.5 / 19.2	58.2 / 17.4
Differential diagnosis/characterization of the vertigo* (n / %)		
Vestibular vertigo	155 / 44.0	207 / 49.1
– peripheral vestibular (mainly rotatory)	87 / 56.1	119 / 57.5
– central vestibular (mainly staggering)	9 / 5.8	31 / 15.0
– Ménière's disease	58 / 37.4	60 / 29.0
– not specified	3 / 1.9	1 / 0.5
nonvestibular vertigo	275 / 78.1	299 / 70.9
– visual	7 / 2.5	10 / 3.3
– somatosensory	66 / 24.0	74 / 24.7
– psychosomatic	11 / 4.0	19 / 6.4
– cardiovascular (plus primary symptoms)	184 / 66.9	192 / 64.2
– dull sensation in the head	95 / 51.6	88 / 45.8
– loss of balance/grogginess	101 / 54.9	92 / 47.9
– sensation of pressure in the head	79 / 42.9	75 / 39.1
– subjective lightheadedness	86 / 46.7	78 / 40.6
– feeling of unsteadiness	122 / 66.3	132 / 68.8
– visual disturbances	65 / 35.3	81 / 42.1
not specified	7 / 2.5	6 / 2.0
Cause of the vertigo* (n / %)		
– degenerative spinal disorders	115 / 32.7	107 / 25.4
– hypertension	97 / 27.6	102 / 24.2
– arteriosclerosis	91 / 25.9	108 / 25.6
– orthostatic dysregulation	63 / 17.9	81 / 19.2
– hypotension	47 / 13.4	44 / 10.4
– cardiac insufficiency	48 / 13.6	36 / 8.5
– diabetes mellitus	38 / 10.8	38 / 9.0
– lipometabolic disorders	34 / 9.7	46 / 10.9
– other	31 / 8.8	56 / 13.3
(Autonomic) concomitant symptoms* (n / %)		
– nausea	179 / 50.9	259 / 61.4
– perspiration attacks	167 / 47.4	192 / 45.5
– tinnitus	138 / 39.2	189 / 44.8
– sensation of pressure in the ears	120 / 34.1	116 / 27.5
– tachycardia	82 / 23.3	120 / 28.4
– globus hystericus	57 / 16.2	69 / 16.4
– nystagmus	46 / 13.1	52 / 12.3
– vomiting	41 / 11.6	70 / 16.6
– other	13 / 3.7	6 / 1.4
Duration of illness (n / %)		
– < 4 weeks	147 / 41.8	152 / 36.0
– 1–6 months	86 / 24.4	98 / 23.2
– 6–12 months	48 / 13.6	46 / 10.9
– 1–2 years	25 / 7.1	51 / 12.1
– > 2 years	46 / 13.1	75 / 17.8

average scores for duration and intensity were tabulated and contrasted, and the statistical relevance of the final difference between the treatment groups was graphically displayed.

Results

Patients

Data were compiled on a total of 774 patients (Vertigoheel, $n = 352$; dimenhydrinate, $n = 422$). Using a logistical regression procedure (see above) to stratify the patients ensured that the two treatment groups were equivalent with regard to demographics and anamnesis at the beginning of the observation period. (140 tests of the distribution of baseline criteria within the propensity classes yielded 4 significant p-values [= 2.9%]. This value lies below the 5% limit; that is, the number of inhomogeneous distributions of individual baseline criteria was no higher than it would have been if the patients had been randomly assigned to the groups.)

In differentiating the symptoms of vertigo, multiple listings per patient occurred, but it was clear that a majority of the patients suffered from nonvestibular (i.e., visual, somatosensory, or psychosomatic) vertigo, with cardiovascular vertigo dominating. The main symptoms in this group were unsteadiness, loss of balance, and a dull sensation in the head (= non-systemic vertigo). Systemic symptoms, which typically include rotatory (peripheral vestibular) vertigo, Ménière's disease, or staggering (central vestibular) vertigo, characterized a second major group (see Table). First and foremost among the causes of episodic vertigo were secondary effects of disorders such as degenerative changes of the spine, followed by hypertension, arteriosclerosis, orthostatic dysregulation, cardiac insufficiency, and hypotension. Frequency of autonomic symptoms (nausea, vomiting, perspiration, tinnitus, sensation of pressure, or tachycardia) did not differ markedly between the two groups.

In 42% of the Vertigoheel patients and 36% of the dimenhydrinate patients, the verti-

go attacks had appeared for the first time within the preceding four weeks, while 24% and 23%, respectively, had suffered from symptoms for not more than six months. 20% of the Vertigoheel patients and 30% of the dimenhydrinate patients had been experiencing symptoms for more than one year.

Concomitant illnesses

In 36% of the Vertigoheel patients and 20% of the dimenhydrinate patients, one or several concomitant illnesses were noted in addition to the primary indication. In both groups, the most frequent concomitant illnesses were cardiovascular disease, various metabolic illnesses, and degenerative disorders. 29% of the patients in the Vertigoheel group and 17% in the dimenhydrinate group were taking other medications, primarily ACE inhibitors, beta blockers, other cardiovascular drugs, analgesics, psychopharmaceuticals, and antidiabetic drugs. Approximately three-quarters of the patients in both groups exhibited general risk factors such as regular use of nicotine, alcohol, and caffeine.

Treatment

The average duration of treatment and observation was 54 days for the Vertigoheel group and 53 days for the dimenhydrinate group. In most cases (82%), the prescribed dose of Vertigoheel was two to three tablets three times a day, while the standard dose (59%) of dimenhydrinate was 50 mg two or three times a day. As a general rule, the dosage remained the same for the entire observation period; if changed during treatment, the dosage was generally reduced.

Efficacy

Vertigo attacks: Statistical comparison of the two treatment groups revealed that they were initially homogeneous with regard to number, intensity, and duration of the vertigo attacks (Anova test $p > 0.4$).

a) At the beginning of treatment, the average number of vertigo attacks per day was 5.2 in the Vertigoheel group and 5.1 in the dimenhydrinate group. During the observation and treatment period (averaging 54 and 53 days, respective-

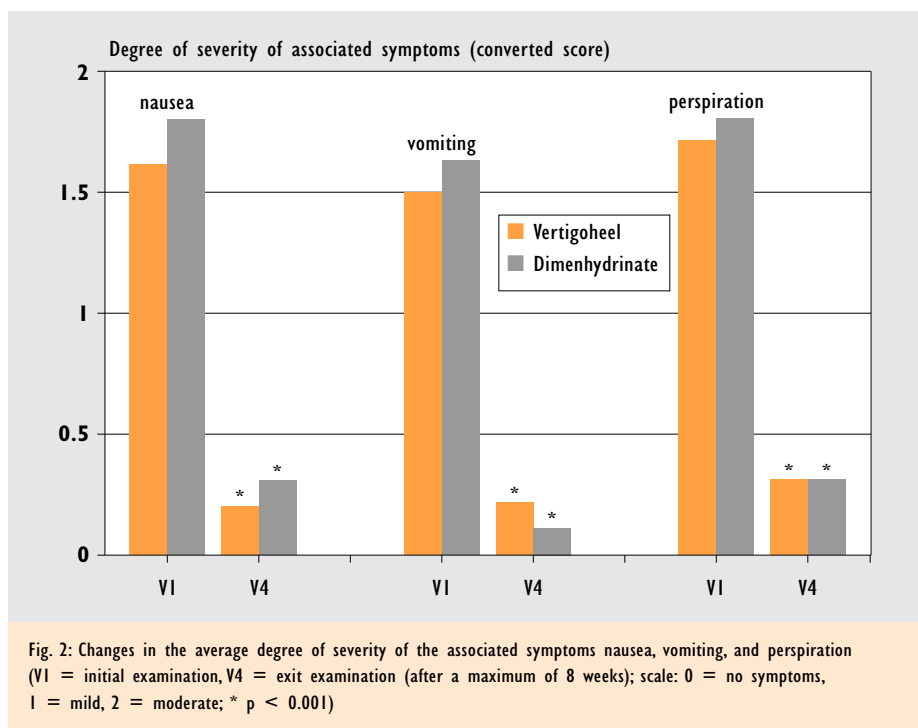
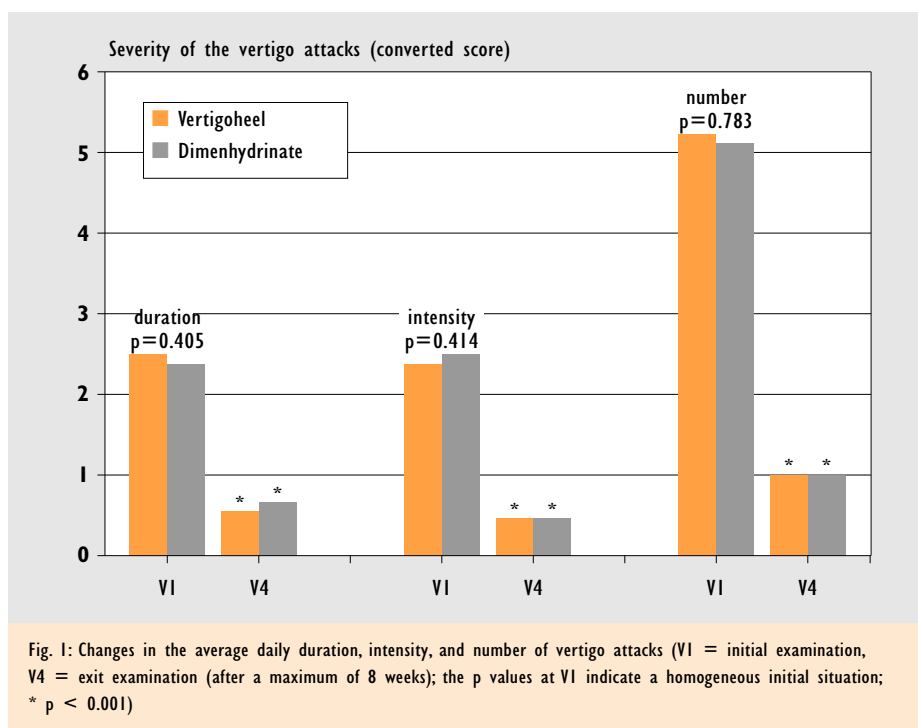
ly), this number was reduced to 1.0 in both groups, a statistically significant change.

- b) The initial average score for vertigo *intensity* was equivalent (ca. 2.5) in both groups, indicating "moderate" to "severe" symptoms. During the observation and treatment period, the average intensity of the attacks decreased significantly in both groups to a score of < 1 , indicating no symptoms or only mild symptoms.
- c) At the beginning of treatment, the average score for the daily *duration* of vertigo symptoms was comparable in both groups at 2.5. In both the Vertigoheel group and the dimenhydrinate group, the duration score was reduced to < 1 by the end of the study, indicating a duration of zero to two minutes per day (Figure 1).

Associated symptoms: At the beginning of therapy, 81% of the Vertigoheel patients and 84% of the dimenhydrinate patients experienced at least one associated symptom: nausea (the most frequent), vomiting, or attacks of perspiration. The average degree of severity at the beginning of treatment was rated "mild" to "moderate" for all three symptoms. In the course of therapy, statistically significant reductions in the severity of all three symptoms occurred; at the end of the observation period both groups were almost free of associated symptoms (Figure 2).

Onset of efficacy: An additional measure of the efficacy of the selected therapy was the point in time when improvement in the vertigo symptoms was first recorded. 49% of patients in the Vertigoheel group and 59% in the dimenhydrinate group reported improvement in the first week of therapy. 4% and 5%, respectively, reported no improvement during the treatment period.

Results of therapy: The participating physicians rated the effect of the medication as "good" or "very good" in 88% of the Vertigoheel patients and 87% of the dimenhydrinate patients. The response was "fair" in 9% of the Vertigoheel patients,



and “no success” was reported for 3%; the corresponding figures for the dimenhydrinate group were 7% and 5%.

Compliance

The physicians rated compliance (which reflects the patients’ satisfaction with their treatment and thus suggests its risk-benefit profile) as “very good” or “good” for

96% of the Vertigoheel patients and 93% of the dimenhydrinate patients.

Premature termination of therapy

Patient satisfaction with treatment is also reflected in the number of premature terminations due to inadequate efficacy. Only 1.4% of the patients in the Vertigoheel group terminated treatment prematurely

for this reason, whereas the dropout rate in the dimenhydrinate group was 4.3%, or three times as high.

Tolerability

One instance of an adverse effect was reported in each of the two treatment groups:

a) In the Vertigoheel group, one female patient with cardiovascular vertigo (whose underlying or concomitant illnesses included diabetes mellitus, hypertension, cardiac insufficiency, arteriosclerosis, and lipometabolic disorders) reported experiencing confusion for two to three days. It is unlikely that there was any connection between her use of Vertigoheel and this incident, which was presumably due to a latent preexisting cerebral ischemia.

b) In the dimenhydrinate group, as early as the first day of treatment, one male patient (whose underlying or concomitant illnesses included cerebral sclerosis, psoriasis, and polyarthritis) developed itching hemorrhagic eczema on both thighs; the rash disappeared eight days after discontinuing the medication.

In spite of these two adverse incidents, the participating physicians rated patient tolerance of Vertigoheel and dimenhydrinate as “very good” or “good” in 99% and 98% of the cases, respectively. Tolerability was described as “fair” in only four cases in each group and “poor” in two cases in the dimenhydrinate group only.

Discussion

Ideally, any antivertigo therapy should treat the causes of the vertigo symptom. Many cases, however, require symptomatic therapy (often long-term) before the underlying illness can be addressed successfully. Because tests of perception, nystagmus, balance, and ataxia are involved, the mere process of diagnosing vertigo requires the cooperation of the patient (1).

There is much to be learned from cohort studies such as this one, which investigate the efficacy of commercial pharmaceuticals under conditions of actual practice,

especially in multimorbid patients. Extensive searches of the literature have shown that the results generated by this type of study are as reliable as those of controlled clinical studies if: a) the selected group of patients is typical of the therapeutic situation in actual practice, and b) a control is included (14). In assessing the symptomatology of vertigo of varying etiology, these two conditions can be met by conducting two independent, parallel studies. Under such circumstances, Vertigoheel proved to be as effective as dimenhydrinate in treating symptoms of vertigo. In both treatment groups, statistically significant reductions in the daily frequency of the vertigo attacks as well as their intensity and duration occurred during the treatment period, and any symptoms remaining at the end of the observation period tended to be mild.

In line with the results of earlier studies, this study also shows that the use of the homeopathic combination medication Vertigoheel produces improvement in the symptoms of different types of vertigo in the majority of cases (2–4). The efficacy of this product is especially apparent when measures of subjective physical and psychological well being are considered in addition to data on the patients' vertigo attacks (5, 15).

Individual, subjective experiences of the burden of suffering imposed by vertigo can differ considerably from one patient to another even when their clinical conditions are equivalent (17). Hence, subjective criteria should be given precedence over objective criteria in assessing episodic vertigo. However, the changing and variable symptomatology of types of vertigo such as Ménière's disease poses a fundamental problem in assessing any therapeutic intervention (16).

In view of the well-known risk of adverse effects associated with chemical antivertigo drugs, it should still be mentioned that such effects can be almost entirely avoided by substituting the homeopathic medication Vertigoheel. Dimenhydrinate acts as an H₁ antihistamine, suppressing typical vertigo symptoms such as nausea and vomiting by acting on the central nervous system. Depending on the dose, however, these desired effects may also be accompanied by signs of sedation such as fatigue and reductions in alertness or spontaneity. The patient sample in the present observational study, however, was too small to allow such adverse effects to be detected, and in both treatment groups, patient tolerance of the medication was rated "very good" to "good" in the majority of cases.

In summary, this reference-controlled cohort study confirms that the antihomotoxic medication Vertigoheel offers a safe and effective option for treating vertigo of varying etiology and is therapeutically equivalent to drugs containing dimenhydrinate.

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