Clinical Studies on Valerian (*Valeriana officinalis* L.)

Anxiety

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Sousa, 1992	Anxiety	R, DB, C n=80 adult patients with various anxiety syndromes		270 mg/day or 30 mg clobazam/day	Valdispert® or clobazam 30 mg/day	The valerian preparation was as effective and well-tolerated as clobazam, according to the Hamilton Anxiety Rating Scale and the Leeds anxiety questionnaire.
Kohnen and Oswald, 1988	Anxiety	DB n=48 adults placed in an experimental situation of social stress	24 hours	100 mg valerian or 20 mg propranolol or a combination of the 2	Valerian extract (brand not stated)	The valerian preparation reduced subjective sensations of anxiety, but the study did not demonstrate any difference between groups.
Boeters, 1969	Anxiety	O n=70 hospitalized patients with dysregulation of the autonomic nervous system due to various etiologies	7 days to 3 months	150–300 mg/day valepotriate mixture	Valmane®	Functional cardiac disorders, tachycardia, hypertension, sweating, restless legs, and other dysregulations were influenced positively by Valmane®. The preparation produced mildly sedative effects and was effective in treatment of restlessness and tension. Apart from mild daytime fatigue, no evidence of somatic adverse effects or psychotropic effects was observed.

Combination Preparations

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Bourin *et al*, 1997	Anxiety	R, PC n=182 patients diagnosed with adjustment disorder and anxious mood	4 weeks	2 tablets 3x/day	Euphytose® (six herbs including *Crataegus, Ballota, Passiflora, Valeriana, Cola*, and *Paullinia*)	Significant improvement in Hamilton anxiety scores comparing combination product to placebo (p=0.012).
Panijel, 1985	Anxiety	DB, C n=100 adults suffering from anxiety disorders	2 weeks	1 tablet/day (50 mg of valerian and 100 mg of St. John's wort /day) or 2 mg diazepam 2x/day	Sedariston® Konzentrat (providing 50 mg of valerian and 100 mg of St. John's wort)	The herbal combination was reportedly effective in 78% vs. only 54% of the diazepam group (p<0.01). Side effects were reported by only 4% of those taking the herbs vs. 14% of those taking diazepam.

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Clinical Studies on Valerian (*Valeriana officinalis* L.) (cont.)

Sleep

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Dominguez *et al.*, 2000	Sleep	O, case study n=20 sleep questionnaires	2 weeks	1–3, 470 mg capsules before bed	Nature's Way® valerian root capsules	Global improvement at Week 2 was significantly better than at Week 1 (Wilcoxon ranks test, p=0.005), perhaps reflecting a time-dependent or dose-response relationship. This case study suggests that valerian can be an agent for improving insomnia in a symptomatic population.
Donath *et al.*, 2000	Sleep	R, PC, DB, CO n=16 men and women with previously established psychophysiological insomnia (ICSD-code 1.A.1.) (mean age 49)	Single dose and 14 days vs. placebo with 13 day washout between	Two, 300 mg capsules dry extract of valerian 1 hour before bedtime vs. placebo	Sedonium® and placebo	No effects on sleep structure and subject sleep assessment were observed after a single dose of valerian. Sleep efficiency increased significantly after multi-dose treatment for both valerian and placebo, compared to baseline polysomnography. However, slow-wave sleep (SWS) latency was reduced after multi-dose treatment with valerian compared with placebo (13.5 vs. 21.3 min., p<0.05). Compared to baseline, SWS percentage of time in bed was increased with valerian (8.1% vs. 9.8%, p<0.05). An extremely low number of adverse events were observed during the valerian treatment period compared with the placebo period (3 vs. 18). Because valerian showed positive effects on sleep structure and sleep perception of insomnia patients, the authors suggest valerian can be recommended for treatment of patients with mild psychophysiological insomnia.
Dorn, 2000	Insomnia	R, DB, Cm n=70	4 weeks	Two, 300 mg tablets 30 minutes before bedtime or 5 mg oxazepam tablet	LI 156 300 mg valerian dried extract tablets; oxazepam 5 mg	In both groups, sleep quality improved significantly (p<0.001), but no statistically significant difference could be found between groups (p=0.70). Effect varied between groups and was between 0.02 and 0.25, with a more favorable adverse effect profile of valerian compared to oxazepam. Primary outcome was measured by the factor "sleep quality". Secondary outcomes were other sleep characteristics including well-being and anxiety (HAMA).
Vorbach, 1996	Sleep quality	C n=121 patients with non-organic sleep disturbances for at least 4 weeks	4 weeks	Two, 300 mg tablets/day	Sedonium® (LI 156)	Four standard rating scales were employed. Significant improvement in sleep quality, feeling of refreshment after sleep, and well-being during the day; no significant side effects reported. Results were observed after 2–4 weeks of use, with no acute effects during first days of study.
Schulz *et al.*, 1994	Sleep	DB, PC n=14 elderly poor sleepers	1 week	405 mg 3x/day	Valdispert® forte	Subjects in valerian group had increase in slow-wave sleep and decrease in Stage 1 sleep. There was no effect on self-reported sleep quality, sleep onset time, REM sleep time, or time awake after onset of sleep.
Balderer and Borberly, 1985	Sleep	DB, PC n=18 healthy subjects with a history of sleep disturbances	3 weeks	450 or 900 mg extract 30 minutes before bed	Aqueous valerian extract (brand not stated)	Valerian extract had mild sleep-promoting action without significant residual or "hangover" effect.
Leathwood and Chauffard, 1985	Sleep	R, PC, DB n=8 mild insomnia	1 night	450 mg and 900 mg	Aqueous valerian root extract (brand not stated)	Significantly decreased sleep latency; there was no further improvement with doubling the dose.
Gessner and Klasser, 1984	Sleep	R, DB n=11 adults	2 nights	1 or 2 capsules (60 or 120 mg)	Harmonicum Much® valepotriate preparation	Both dosages showed a decrease in sleep Stage 4 and a slight reduction of REM sleep, and slight increase of sleep Stage awake, 1, 2, and 3. Changes or Beta-intensity of EEG during REM sleep show stronger hypnotic effect for 120 mg dosage than for 60 mg dosage. Maximum effect was observed between 2 and 3 hours after medication.
Kamm-Kohl *et al.*, 1984	Mood and sleep	PC n=80 hospitalized geriatric patients	2 weeks	6 tablets/day (482 mg valerian extract/day)	Valdispert® forte	Significant improvements in mood and behavioral disturbances, as well as sleep.

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Sleep (cont.)

Combination Preparations

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Fussel *et al.*, 2000	Sleep	PS n=30 patients with mild to moderate, non-organic insomnia	2 weeks	2 tablets in the evening (total of 500 mg valerian extract and 120 mg hops extract per day)	Ze91019 Alluna™ (US) Ivel® (Germany) ReDormin® (Switzerland)	Polysomnography data were recorded on baseline and after 2 weeks. Sleep latency was reduced statistically significantly while sleep efficiency increased. An increase in slow wave sleep was recorded. In a self-assessment, patients reported an improvement of feeling refreshed in the morning after 2 weeks. No adverse events were recorded.
Vonderheid-Guth *et al.*, 2000	Sleep	R, SB, CO 2 studies n=12	1, 2, and 4 hours after application in each study, studies spaced 3 months apart	1st dosage: 1 tablet (500 mg valerian and 120 mg hops) vs. placebo; 2nd dosage: 3 tablets (total 1,500 mg valerian and 360 mg hops) vs. placebo	Ze91019 Alluna™ (US) Ivel® (Germany) ReDormin® (Switzerland)	The study concluded that pharmacodynamic responses could be repeated. The quantitative topographical EEG demonstrated a visible effect on the CNS, especially after intake of the high dosage of the valerian-hops combination.
Cerny and Schmid, 1999	Sleep	R, PC, DB, PG, MC n=95 healthy volunteers (58 women, 40 men)	30 days	3 tablets (total 360 mg valerian and 240 mg lemon balm [*Melissa officinalis*] combination) or placebo	Songha Night® coated tablets and placebo	Valerian/lemon balm group had significantly higher quality of sleep (33%) compared to placebo group (9%) (p=0.04).
Rodenbeck *et al.*, 1998	Insomnia	PC n=15	4 weeks	500 mg valerian with 120 mg hops	Ivel® valerian and hops extract vs. placebo	There was a significant decrease in slow-wave sleep and an increase in Stage II sleep among those assigned to the herbal preparation.
Schmitz and Jackel, 1998	Sleep disorders	R, DB, C n= 46 patients with sleep disorders according to the DSM-IV criteria	2 weeks	Two, tablets (total 200 mg valerian extract with 45.5 mg hops extract) vs. 3 mg benzodiazapine	Hova® compared to benzodiazapine	Patients' state of health improved during therapy with both agents and deterioration after cessation was reported for both groups. Withdrawal symptoms were reported only in benzodiazepine groups.
Dressing *et al.*, 1996	Insomnia	DB, PC n=57 adults with insomnia	2 weeks	Two, tablets 160 mg valerian extract with 80 mg lemon balm extract each), 2x/day	Euvegal® forte valerian and lemon balm tablet vs. placebo	Sleep quality improved in valerian/lemon balm combination compared to placebo (p=0.02) and remained in effect one week after medication was discontinued (p=0.12).
Lataster et al., 1996	Sleep	MC, OL n=3,447	4–6 weeks	Dosage not stated	Valerian and hops extract (each tablet contains 500 mg valerian, 60 mg hops)	The efficacy of the combination was evaluated as good to very good by 75% of the physicians. The number of patients who slept through the night rose from 24.4% to 77.4%. The self-efficacy report of feeling rested upon awakening rose from 26.5% to 64.9%.
Orth-Wagner, 1995	Sleep	O n=225 patients with sleep difficulties	2 weeks	Two, tablets 1–3 times daily	Novo-Baldriparan®	89% noted improvements in ability to fall asleep, and 80% reported improvements in ability to sleep through the night; most also reported an improvement in overall well-being.

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Sleep (cont.)

Combination Preparations (cont.)

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Dressing and Reimann, 1992	Insomnia	DB, PC n=20 adults with insomnia	9 days	1 tablet (160 mg valerian with 80 mg lemon balm) or 0.125 mg Halcion®	Euvegal® forte valerian and lemon balm tablet vs. placebo	Both active treatments were equivalent and significantly better than placebo. The herbs caused less daytime sedation and impairment of mental functions.
Lindahl and Lindwall, 1989	Sleep difficulties	R, DB, PC, CO n=27 insomniacs	2 nights	400 mg/night	Valerina Natt®	Of the 27 patients, 21 rated valerian-containing mixture as significantly more effective ($p<0.001$) than the control preparation for sleep quality; 24 of 27 patients (89%) reported "improved sleep" and 12 of these patients (44%) reported "perfect sleep" after taking valerian-containing preparation. No adverse effects were observed.
Leathwood *et al*, 1982	Sleep	R, DB, PC, CO n=128	9 nights	400 mg	Hova®, or aqueous valerian extract, or placebo	Subjects had statistically significant ($p<0.05$) decrease in subjective sleep latency and significant improvement in sleep quality. Improvement was most notable among people who were poor or irregular sleepers, and smokers. No detectable hangover effect was noted in the morning.

Hazards in Driving and Operating Machinery

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Kuhlmann *et al.*, 1999	Alertness, reaction time, and concentration	R, C, DB n=99 males and females in first segment and 91 in second segment	Single night plus 2 weeks of nighttime administration	600 mg LI 156 or flunitrazepam (1 mg) and placebo	LI 156 vs. flunitrazepam and placebo	Neither single nor repeated nighttime administration of valerian had adverse impact on reaction time, alertness, and concentration the morning after intake. Valerian subjects showed better improvement in psychometric performance than those on placebo, and significantly ($p=0.4481$) better than those on drug.
Mayer and Springer, 1974	Assess potential hazards in driving	R, DB, PC n=24 healthy volunteers	Acute	200 mg, 400 mg, or 150–200 mg	Valmane® (valepotriates with alcohol) and placebo	Demonstrated a dose-dependent increase in concentration abilities in volunteers; when given in combination with alcohol, the preparation did not affect blood alcohol levels, have sedative effects, and/or affect driving performance.

Combination Preparations

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Gerhard *et al.*, 1996	Assess potential hazards in driving or operating machinery	C, Cm n=80 healthy adults	One night (single oral administration with observation on the following morning)	1.5 g dried extract or 4 g fluid extract	2 Valverde® herbal combinations (containing valerian and hops) and a syrup of valerian were compared to flunitrazepam and placebo (brands not stated)	Objectively measurable impairment of performance on morning after medication occurred only in flunitrazepam group. In addition, 50% of the volunteers in flunitrazepam group reported mild side effects, compared with only 10% from other groups. Examination of acute effects of plant remedies 1–2 hours after administration revealed very slight, but statistically significant impairment of vigilance and retardation in the processing of complex information.
Kammerer *et al.*, 1996	Driving safety	R, DB, CO n=18	21 days	2 tablets after dinner (total of 1,000 mg valerian extract and 120 mg hops extract per day), or placebo	Valerian and hops extract (each tablet contains 500 mg valerian, 60 mg hops)	The study concluded that the combination did not produce significant adverse effects and did not impair psychometrically measured fitness and subjective state of health. In addition, no significant interaction with alcohol is to be expected.
Albrecht *et al.*, 1995	Driving ability and combination with alcohol	R, DB, PC n=54	3 weeks	2 tablets 2x/day or placebo	Euvegal® forte (each tablet contains 160 mg valerian root extract and 80 mg lemon balm leaf extract)	Traffic safety was evaluated using psychometric tests. The treatment group showed no difference in driving ability compared to placebo, and treatment did not potentiate the effect of alcohol consumption. The study concluded that Euvegal® does not cause impairment of the operation of machinery or the driving of vehicles.

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