ESTRATÉGIA DE BUSCA PARA **ZUMBIDO x GINKOBILOBA (EVIDÊNCIAS)**

PUBMED	
ZUMBIDO **("Tinnitus"[Mesh]) or (Tinnitus) or** (Ringing-Buzzing-Tinnitus) or (Ringing Buzzing Tinnitus) or (Tinnitus, Clicking) or (Clicking Tinnitus) or (Tinnitus, Leudet) or (Leudet Tinnitus) or (Tinnitus, Leudet's) or (Leudet's Tinnitus) or (Tinnitus, Leudets) or (Tinnitus, Noise Induced) or (Induced Tinnitus, Noise) or (Noise Induced Tinnitus) or (Tinnitus, Objective) or (Objective Tinnitus) or (Pulsatile Tinnitus) or (Tinnitus, Pulsatile) or (Tinnitus, Subjective) or (Subjective Tinnitus) or (Tinnitus, Tensor Palatini Induced) or (Tensor Palatini Induced Tinnitus) or (Tinnitus, Tensor Tympani Induced) or (Tensor Tympani Induced Tinnitus) or (Tinnitus of Vascular Origin) or (Vascular Origin Tinnitus) or (Tinnitus, Vascular Origin) or (Tinnitus, Spontaneous Oto-Acoustic Emission) or (Tinnitus, Spontaneous Oto Acoustic Emission) or (Spontaneous Oto-Acoustic Emission Tinnitus) or (Spontaneous Oto Acoustic Emission Tinnitus)	
GINKGO BILOBA ("Ginkgo biloba"[Mesh]) OR (Ginkgo biloba) OR (Ginko) OR (Gingko biloba) OR (Ginkgo) OR (Maidenhair Tree) OR (Gingko) OR (Ginkgophyta)	
ACUPUNTURA ("Acupuncture"[Mesh]) OR (Acunpuncture)	
REVISÃO SISTEMÁTICA	
ENSAIO CLINICO	

LILACS	
ZUMBIDO **(Zumbido) OR (**Tinido) OR (Zumbido Pulsátil) OR (Zunido) OR (Ex.C09.218.458.670) OR (Ex.C10.597.751.418.670) OR (Ex.C23.888.592.763.393.670)	
GINKGO BILOBA (**Ginkgo biloba) OR** (Ginkgófitas) OR (Ginkgoíneas) OR (Salisburia adiantifolia) OR (Gingko) OR (Ginkgo) (Ginkgophyta) OR (Nogueira-do-Japão) OR (Gingko biloba) OR (Ex. B06.388.400.300) OR (Ex. HP4.018.313.465)	
ACUPUNTURA **(Acupuntura) OR (**Ex.G02.004) or (Ex.HP3.018.069)	
REVISÃO SISTEMÁTICA	
ENSAIO CLINICO	

COCHRANE (Título, Resumo e Palavras-chave)	
#1 Zumbido X Ginkgo Biloba (Tinnitus) and (Ginkgo Biloba)	
#2 Zumbido X Acupuntura (Tinnitus) and (Acupuncture)	

PUBMED 26/01/2009

ZUMBIDO x ACUMPUTURA SEM FILTRO = 5 ESTUDOS

1: Zhen Ci Yan Jiu. 2008 Aug;33(4):272-6.

Related Articles, Links

[Discussion on the citation of acu-moxibustion treatment verses in textbook acupuncturology]

[Article in Chinese]

Wu XD, **Huang LX**.

Institute of Acu-moxibustion, China Academy of Chinese Medical Sciences, Beijing 100700, China.

Verses on Acu-moxibustion Treatment have played an important role in the pervasion and spread of indications of acupoints. Abundant verses are widely cited in different versions of the textbook Acupuncturology for university and college students in China. Some contents about clinical indications of acupoints are even listed in partial verses. However, one important issue should be noted that the source of some indications of acupoints summarized in these verses needs being investigated, and the indications of some acupoints have been seldom mentioned in literature. For example, Sizhukong (TE 23) is used to treat toothache, Diwuhui (GB 42) used to treat tinnitus, Shangqiu (SP 5) used to treat jaundice, Chongmen (SP 12) selected to treat metrorrhagia, metrostaxis and abnormal vaginal discharge, Sanjiaoshu (BL 22) chosen to treat dysentery, etc. These descriptions (indications of these acupoints) need being verified in clinical practice, and thus should be used cautiously. Moreover, the verse is a type of barriers of literature in which some errors may occur in the course of spread from generation to generation and are also inherited in verses. For instance, Fubai (GB 10) is employed to treat scrofula, Yanggang (BL 48) employed to treat jaundice, Yishe (BL 49) used to treat vomiting and difficulty in swallowing, Shiguan (KI 18) taken to treat sterility, Yamen (GV 15) taken to treat epilepsy, etc. Therefore, the editors of teaching materials for acu-moxibustion should take a very cautious attitude when using such kinds of contents in verses.

Publication Types:

- English Abstract

PMID: 18928122 [PubMed - indexed for MEDLINE]

2: Clin Evid. 2003 Jun;(9):598-607.

Related Articles, Links

Update in:

- Clin Evid. 2004 Jun;(11):718-28.

Update of:

- Clin Evid. 2002 Dec;(8):523-32.

Tinnitus.

Waddell A, **Canter R**.

Southwest Training Scheme in Otolaryngology, University of Bristol, Bristol, UK.

Publication Types:

- Review

PMID: 12967382 [PubMed - indexed for MEDLINE]

3: Qual Saf Health Care. 2002 Mar;11(1):92-7.

Related Articles, Links

Acupuncture.

Vickers A, **Wilson P**, **Kleijnen J**.

Memorial Sloan-Kettering Cancer Center, New York, USA.

Publication Types:

- Review

PMID: 12078381 [PubMed - indexed for MEDLINE]

PMCID: PMC1743552

4: BMC Complement Altern Med. 2001;1:3. Epub 2001 Jul 16.

Related Articles, Links

Systematic reviews of complementary therapies - an annotated bibliography. Part 1: acupuncture.

Linde K, **Vickers A**, **Hondras M**, **ter Riet G**, **Thormählen J**, **Berman B**, **Melchart D**.

Centre for Complementary Medicine Research, Department of Internal Medicine II, Technische Universität, München, Kaiserstr 9, 80801 München, Germany. Klaus.Linde@lrz.tu-muenchen.de

BACKGROUND: Complementary therapies are widespread but controversial. We aim to provide a comprehensive collection and a summary of systematic reviews of clinical trials in three major complementary therapies (acupuncture, herbal medicine, homeopathy). This article is dealing with acupuncture. Potentially relevant reviews were searched through the register of the Cochrane Complementary Medicine Field, the Cochrane Library, Medline, and bibliographies of articles and books. To be included articles had to review prospective clinical trials of acupuncture; had to describe review methods explicitly; had to be published; and had to focus on treatment effects. Information on conditions, interventions, methods, results and conclusions was extracted using a pretested form and summarized descriptively. RESULTS: From a total of 48 potentially relevant reviews preselected in a screening process 39 met the inclusion criteria. 22 were on various pain syndromes or rheumatic diseases. Other topics addressed by more than one review were addiction, nausea, asthma and tinnitus. Almost unanimously the reviews state that acupuncture trials include too few patients. Often included trials are heterogeneous regarding patients, interventions and outcome measures, are considered to have insufficient quality and contradictory results. Convincing evidence is available only for postoperative nausea, for which acupuncture appears to be of benefit, and smoking cessation, where acupuncture is no more effective than sham acupuncture. CONCLUSIONS: A large number of systematic reviews on acupuncture exists. What is most obvious from these reviews is the need for (the funding of) well-designed, larger clinical trials.

Publication Types:

- Research Support, Non-U.S. Gov't
- Research Support, U.S. Gov't, P.H.S.
- Review

PMID: 11513758 [PubMed - indexed for MEDLINE]

PMCID: PMC37539

5: Monatsschr Ohrenheilkd Laryngorhinol. 1963 Oct;97:464-6.

Related Articles, Links

[THE POSSIBILITY OF ACUPUNCTURE IN THE EAR, NOSE AND THROAT AREA.]

[Article in German]

BISCHKO J.

PMID: 14093155 [PubMed - indexed for MEDLINE]

PUBMED 26/01/2009

ZUMBIDO x GINKGO BILOBA = 54 ESTUDOS

1: Cochrane Database Syst Rev. 2009 Jan 21;(1):CD003120.

Ginkgo biloba for cognitive impairment and dementia.

Birks J, Grimley Evans J.

Centre for Statistics in Medicine, University of Oxford, Wolfson College, Linton
Road, Oxford, UK, OX2 6UD.

BACKGROUND: Extracts of the leaves of the maidenhair tree, Ginkgo biloba, have
long been used in China as a traditional medicine for various disorders of
health. A standardized extract is widely prescribed for the treatment of a range
of conditions including memory and concentration problems, confusion, depression,

anxiety, dizziness, tinnitus and headache. The mechanisms of action are thought to reflect the action of several components of the extract and include increasing blood supply by dilating blood vessels, reducing blood viscosity, modification of neurotransmitter systems, and reducing the density of oxygen free radicals.
OBJECTIVES: To assess the efficacy and safety of Ginkgo biloba for dementia or cognitive decline. SEARCH STRATEGY: The Specialized Register of the Cochrane Dementia and Cognitive Improvement Group (CDCIG), The Cochrane Library, MEDLINE, EMBASE, PsycINFO, CINAHL and LILACS were searched on 20 September 2007 using the terms: ginkgo*, tanakan, EGB-761, EGB761, "EGB 761" and gingko*. The CDCIG Specialized Register contains records from all major health care databases (The Cochrane Library, MEDLINE, EMBASE, PsycINFO, CINAHL, LILACS) as well as from many trials databases and grey literature sources. SELECTION CRITERIA: Randomized, double-blind studies, in which extracts of Ginkgo biloba at any strength and over any period were compared with placebo for their effects on people with acquired cognitive impairment, including dementia, of any degree of severity. DATA COLLECTION AND ANALYSIS: Data were extracted from the published reports of the included studies, pooled where appropriate and the treatment effects or the risks and benefits estimated. MAIN RESULTS: 36 trials were included but most were small and of duration less than three months. Nine trials were of six months duration (2016 patients). These longer trials were the more recent trials and generally were of adequate size, and conducted to a reasonable standard. Most trials tested the same standardised preparation of Ginkgo biloba, EGb 761, at different doses, which are classified as high or low. The results from the more recent trials showed inconsistent results for cognition, activities of daily living, mood, depression and carer burden. Of the four most recent trials to report results three found no difference between Ginkgo biloba and placebo, and one found very large treatment effects in favour of Ginkgo biloba.There are no significant differences between Ginkgo biloba and placebo in the proportion of participants experiencing adverse events.A subgroup analysis including only patients diagnosed with Alzhiemer's disease (925 patients from nine trials) also showed no

consistent pattern of any benefit associated with Ginkgo biloba.
AUTHORS'
CONCLUSIONS: Ginkgo biloba appears to be safe in use with no excess side effects
compared with placebo. Many of the early trials used unsatisfactory methods, were
small, and publication bias cannot be excluded. The evidence that Ginkgo biloba
has predictable and clinically significant benefit for people with dementia or
cognitive impairment is inconsistent and unreliable.

PMID: 19160216 [PubMed - in process]

2: Phytomedicine. 2009 Jan 6. [Epub ahead of print]

Extract of Ginkgo biloba induces glutathione-S-transferase subunit-P1 in vitro.

Liu XP, Goldring CE, Wang HY, Copple IM, Kitteringham NR, Park BK.

Department of Pharmacology, Wannan Medical College, Wuhu, Anhui, PR China.

The extract of Ginkgo biloba (EGb), containing 24% flavone glycosides and 6%
terpenoids, is widely used to treat early-stage Alzheimer's disease, vascular
dementia, peripheral claudication and vascular tinnitus. Its remarkable
antioxidant activity has recently been demonstrated in both cell lines and
animals. Glutathione-S-transferases (GSTs) are a class of important
detoxification enzymes in the antioxidant system and GST-P1 is the major GST
isoform highly expressed in human tissues. Over expression of GST-P1 protected
prostate cells from cytotoxicity and DNA damage by the heterocyclic amine
carcinogen, while inhibition of expression of GST-P1 by transfecting GST-P1
antisense cDNA or targeted deletion of GST-P1 has been found to sensitize cells
to cytotoxic chemicals. It is obvious that induction of GST-P1 expression should
be a promising alternative for chemoprevention. The present study aimed to
investigate the induction effect of EGb on GST-P1 in HepG2 and Hep1c1c7 cell
lines and found that GST-P1 was increased both at the expression and enzyme
activity levels.

PMID: 19131229 [PubMed - as supplied by publisher]

3: Int Tinnitus J. 2008;14(1):69-72.

Multimodal therapy for chronic tinnitus.

Hahn A, Radkova L, Achiemere G, Klement V, Alpini D, Strouhal J.

Ear, Nose, and Throat Department, Third Medical Faculty, Charles University,
Prague, Czech Republic. hahn@fnkv.cz

From 2001 to 2006, we performed a retrospective study of patients suffering from chronic unilateral or bilateral tinnitus that was previously ineffectively treated by oral drugs [betahistine (Betaserc), extract of Ginkgo biloba (EGb 761), tanakan (Tebokan), and cinnarizine-dimenhydrinate (Arlevert), singly or in combination]. We divided 150 tinnitus patients (80 men, 70 women) into seven treatment groups. Treatments consisted of application of intravenous pentoxifylline, lidocaine, or vinpocetine (Cavinton) and combination of these agents with physiotherapy and soft laser. Mean duration (+/- standard deviation) of tinnitus in these patients was 7.4 +/- 6.0 years; their mean age was 55.6 +/- 12.5 years. The aim of our study was to compare treatment modalities and define their effectiveness for tinnitus relief. The most effective treatment was defined as a combination of Cavinton and physiotherapy. We evaluated pure lidocaine infusion therapy as ineffective. None of the treatment modalities had an objective correlate of improvement, though improvement was reported by a visual analog scale.

Publication Types:
    Comparative Study

PMID: 18616089 [PubMed - indexed for MEDLINE]

4: J Food Sci. 2008 Jan;73(1):R14-9.

Multifaceted therapeutic benefits of Ginkgo biloba L.: chemistry, efficacy, safety, and uses.

Mahadevan S, Park Y.

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Amherst, MA 01003, USA.

The new age of nutraceuticals is now embracing the centuries old herbal extract of Ginkgo biloba (Mantissa Plantarum Altera, 1771, Ginkgoceae). The standardized preparation of the Ginkgo leaf extract (EGb 761) contained 2 main bioactive constituents, flavonoid glycosides (24%) and terpene lactones (6%), along with less than 5 ppm of the allergenic component, ginkgolic acid. The Ginkgo leaf

extract has been reported to have neuroprotective, anticancer, cardioprotective, stress alleviating, and memory enhancing effects and possible effects on tinnitus, geriatric complaints, and psychiatric disorders. The therapeutic mechanisms of action of the Ginkgo leaf extract are suggested to be through its antioxidant, antiplatelet, antihypoxic, antiedemic, hemorrheologic, and microcirculatory actions, where the flavonoid and the terpenoid constituents may act in a complementary manner. Toxicity studies show that the Ginkgo leaf extract is relatively safe for consumption, although a few side effects have been reported, that is, intracerebral hemorrhage, gastrointestinal disturbances, headaches, dizziness, and allergic skin reactions. The use of Ginkgo leaf extract may be promising for treatment of certain conditions, although its long-term use still needs to be evaluated.

Publication Types:
    Research Support, Non-U.S. Gov't
    Review

PMID: 18211362 [PubMed - indexed for MEDLINE]

5: Phytother Res. 2008 Mar;22(3):367-71.

Extract of Ginkgo biloba induces glutamate cysteine ligase catalytic subunit (GCLC).

Liu XP, Goldring CE, Wang HY, Copple IM, Kitteringham NR, Park BK, Wei W.

Institute of Clinical Pharmacology, Anhui Medical University, Hefei, Anhui, P. R. China.

The extract of Ginkgo biloba (EGb), containing 24% flavone glycosides and 6% terpenoids, is widely used to treat early-stage Alzheimer's disease, vascular dementia, peripheral claudication and vascular tinnitus. Its marked antioxidant activity has recently been demonstrated in both cell lines and animals. Glutathione (GSH) plays an important role in the antioxidant system by conjugating to xenobiotics to facilitate their export from cells. Glutamate cysteine ligase (GCL) is the rate-limiting enzyme for GSH synthesis and its catalytic subunit (GCLC) determines this de novo synthesis. Thus, induction of GCLC is a strategy to enhance the antioxidant capability in cells. The present

study aimed to investigate the induction effect of EGb on GCLC in HepG2 and Hep1c1c7 cell lines. Real-time PCR, Western blot and enzyme activity assay were used to detect induction and it was found that GCLC was induced by EGb in these two cell lines. It is suggested that the antioxidant activity of EGb is (or is partly) through the induction of GCLC.

Publication Types:
    Comparative Study
    Research Support, Non-U.S. Gov't

PMID: 18167050 [PubMed - indexed for MEDLINE]

6: Cochrane Database Syst Rev. 2007 Apr 18;(2):CD003120.

Update of:
    Cochrane Database Syst Rev. 2002;(4):CD003120.

Ginkgo biloba for cognitive impairment and dementia.

Birks J, Grimley Evans J.

University of Oxford, Nuffield Department of Clinical Medicine, CDCIG Room 5802, John Radcliffe Hospital, Oxford, UK, OX3 9DU. jacqueline.birks@geratol.ox.ac.uk

BACKGROUND: Extracts of the leaves of the maidenhair tree, Ginkgo biloba, have long been used in China as a traditional medicine for various disorders of health. A standardized extract is widely prescribed for the treatment of a range of conditions including memory and concentration problems, confusion, depression, anxiety, dizziness, tinnitus and headache. The mechanisms of action are thought to reflect the action of several components of the extract and include increasing blood supply by dilating blood vessels, reducing blood viscosity, modification of neurotransmitter systems, and reducing the density of oxygen free radicals.
OBJECTIVES: To assess the efficacy and safety of Ginkgo biloba for dementia or cognitive decline. SEARCH STRATEGY: Trials were identified on 10 October 2006 through a search of the Cochrane Dementia and Cognitive Improvement Group's Specialized Register which contains records from all main medical databases (MEDLINE, EMBASE, CINAHL, PsycINFO, SIGLE, LILACS), from ongoing trials databases such as Clinicaltrials.gov and Current Controlled Trials and many other sources.
The search terms used were ginkgo*, tanakan, EGB-761, EGB761, "EGB 761" and

gingko*. SELECTION CRITERIA: Randomized, double-blind studies, in which extracts
of Ginkgo biloba at any strength and over any period were compared with placebo
for their effects on people with acquired cognitive impairment, including
dementia, of any degree of severity. DATA COLLECTION AND ANALYSIS: Data were
extracted from the published reports of the included studies, pooled where
appropriate and the treatment effects or the risks and benefits estimated. MAIN
RESULTS: Clinical global improvement as assessed by the physician, was
dichotomized between participants who showed improvement or were unchanged and
those who were worse. There are benefits associated with Ginkgo (dose greater
than 200 mg/day) at 24 weeks (207/276 compared with 178/273, OR 1.66, 95% CI 1.12
to 2.46, P=.001) (2 studies), but not for the lower dose. Cognition shows benefit
for Ginkgo (any dose) at 12 weeks (SMD -0.65, 95% CI -1.22 to -0.09 P=0.02, 5
studies) but not at 24 weeks.Five studies assessed activities of daily living
(ADLs), using different scales. Some scales are more comprehensive than just
ADLs. The results show benefit for Ginkgo (dose less than 200 mg/day) compared
with placebo at 12 weeks (MD -5.0, 95% CI -7.88, -2.12, p=0.0007, one study), and
at 24 weeks (SMD -0.16, 95% CI -0.31 to -0.01, p=0.03, 3 studies) but there are
no differences at the higher dose. No study assessed mood and function
separately, but one study used the ADAS-Noncog, which assesses function over
several domains, but not cognitive function. There was no difference between
Ginkgo and placebo.There are no significant differences between Ginkgo and
placebo in the proportion of participants experiencing adverse events. There are
no data available on Quality of Life, measures of depression or dependency.
AUTHORS' CONCLUSIONS: Ginkgo biloba appears to be safe in use with no excess side
effects compared with placebo. Many of the early trials used unsatisfactory
methods, were small, and we cannot exclude publication bias. The evidence that
Ginkgo has predictable and clinically significant benefit for people with
dementia or cognitive impairment is inconsistent and unconvincing.

Publication Types:
    Meta-Analysis
    Review

PMID: 17443523 [PubMed - indexed for MEDLINE]

7: Int Tinnitus J. 2006;12(2):149-59.

Review of pharmacological therapy for tinnitus.

Patterson MB, Balough BJ.

Department of Otolaryngology-Head and Neck Surgery, Naval Medical Center San
Diego, California 92134-2200, USA.

This article provides a review of studies investigating the pharmacological
treatment of tinnitus. Tinnitus continues to be a significant and costly health
problem without a uniformly accepted treatment. A wide variety of studies
exploring prescription, supplement, and vitamin therapies are assessed for
efficacy of treatment and for establishing consistencies in symptom definition,
assessment, and outcome measures. This review reveals no compelling evidence
suggesting the efficacy of any pharmacological agent in the treatment of
tinnitus. Analysis of prior investigations provides insight to appropriate
methods for future work, which are outlined.

Publication Types:
    Review

PMID: 17260881 [PubMed - indexed for MEDLINE]

8: J Laryngol Otol. 2007 Aug;121(8):779-82. Epub 2006 Nov 24.

'Complementary ENT': a systematic review of commonly used supplements.

Karkos PD, Leong SC, Arya AK, Papouliakos SM, Apostolidou MT, Issing WJ.

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OBJECTIVE: To assess the evidence surrounding the use of certain complementary
supplements in otolaryngology. We specifically focussed on four commonly used
supplements: spirulina, Ginkgo biloba, Vertigoheel and nutritional supplements
(cod liver oil, multivitamins and pineapple enzyme). MATERIALS AND METHODS: A
systematic review of the English and foreign language literature. Inclusion
criteria: in vivo human studies. Exclusion criteria: animal trials, in vitro
studies and case reports. We also excluded other forms of 'alternative medicine'
such as reflexology, acupuncture and other homeopathic remedies. RESULTS: Lack of
common outcome measures prevented a formal meta-analysis. Three studies on the

effects of spirulina in allergy, rhinitis and immunomodulation were found. One was a double-blind, placebo, randomised, controlled trial (RCT) of patients with allergic rhinitis, demonstrating positive effects in patients fed spirulina for 12 weeks. The other two studies, although non-randomised, also reported a positive role for spirulina in mucosal immunity. Regarding the use of Ginkgo biloba in tinnitus, a Cochrane review published in 2004 showed no evidence for this. The one double-blind, placebo-controlled trial that followed confirmed this finding. Regarding the use of Vertigoheel in vertigo, two double-blind RCTs and a meta-analysis were identified. The first RCT suggested that Vertigoheel was equally effective in reducing the severity, duration and frequency of vertigo compared with betahistine. The second RCT suggested that Vertigoheel was a suitable alternative to G. biloba in the treatment of atherosclerosis-related vertigo. A meta-analysis of only four clinical trials confirms that Vertigoheel was equally effective compared with betahistine, G. biloba and dimenhydrinate. Regarding multivitamins and sinusitis, two small paediatric pilot studies reported a positive response for chronic sinusitis and otitis media following a course of multivitamins and cod liver oil. Regarding bromelain (pineapple enzyme) and sinusitis, one randomised, multicentre trial including 116 children compared bromelain monotherapy to bromelain with standard therapy and standard therapy alone, for the treatment of acute sinusitis. The bromelain monotherapy group showed a faster recovery compared with the other groups. CONCLUSION: The positive effects of spirulina in allergic rhinitis and of Vertigoheel in vertigo are based on good levels of evidence, but larger trials are required. There is overwhelming evidence that G. biloba may play no role in tinnitus. There is limited evidence for the use of multivitamins in sinus symptoms, and larger randomised trials are required.

Publication Types:
    Review

PMID: 17125579 [PubMed - indexed for MEDLINE]

9: BMJ. 2006 Jul 15;333(7559):116.

Australian court suppresses report questioning effectiveness of complementary

remedy.

Burton B.

Publication Types:
    News

PMID: 16840468 [PubMed - indexed for MEDLINE]

10: J Laryngol Otol. 2006 Apr;120(4):343-52.

Rare cases of Ménière's disease in children.

Choung YH, Park K, Kim CH, Kim HJ, Kim K.

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Classical Ménière's disease is rarely found in children and literature regarding
it is scarce. In general, the frequency of Ménière's disease in children is only
0.4-7.0 per cent of that in adults. The progression pattern of Ménière's disease
in children is not known well. Here, we report three cases of Ménière's disease
in children less than 15 years old, treated over nine years. The three cases
comprise 14- and 13-year-old boys and a nine-year-old girl. Two of the three
patients initially complained only of recurrent bouts of vertigo, without any
tinnitus, ear fullness or hearing impairment. In all three cases, the early pure
tone audiograms showed only high tone frequency loss, regardless of subjective
hearing loss, and the decrease in the hearing threshold was observed one to eight
years after the dizziness attacks began. The hearing threshold was usually
decreased to a level of mild or moderate hearing impairment. After diuretic
treatment, vertigo was generally well controlled, and some cases showed
improvement in hearing. Of the total number of patients with Ménière's disease
who visited our department over nine years, 2.6 per cent (3/114) were children,
and the overall incidence of Ménière's disease in children with vertigo was 2.0
per cent (3/147). In conclusion, Ménière's disease in children rarely develops
and may have characteristics of high tone loss in initial audiograms.

Publication Types:
    Case Reports
    Review

PMID: 16623983 [PubMed - indexed for MEDLINE]

11: Kathmandu Univ Med J (KUMJ). 2004 Jul-Sep;2(3):225-9.

Ginkgo biloba--an appraisal.

Dubey AK, Shankar PR, Upadhyaya D, Deshpande VY.

Department of Pharmacology, Manipal College of Medical Sciences, Pokhara, Nepal.

Ginkgo biloba has been used in traditional Chinese medicine for about 5000 years.
A standardized preparation, EGb 761 has been recently prepared. The pharmacologically active constituents, flavonol glycosides and the terpene
lactones are standardized. The terpene lactones comprise of ginkgolides A, B, C
and bilobalides. The extract scavenges excess free radicals and pretreatment with
EGb 761 reduces damage by free radicals in patients undergoing coronary bypass
surgery. The action of platelet activating factor is antagonized and platelet
aggregation is reduced. Blood flow is increased. Release of prostacyclines and
nitric oxide was shown to be stimulated. Ginkgo biloba has been found to be
useful in the treatment of Alzheimers disease and cognitive impairment. EGB 761
has shown beneficial effect in aging and mild cognitive impairment. Bilobalide
has been shown to be protective against glutamate-induced excitotoxic neuronal
death. Early studies indicate a potential role in age-related macular degeneration and some types of glaucoma. Anticancer action is related to
antioxidant, anti-angiogenic and gene regulatory actions. Ginkgo biloba has shown
overall improvement in about 65% of patients with cerebral impairment and a
similar percentage suffering from peripheral vascular diseases. A recent study
suggested that phytoestrogens in Ginkgo biloba may have a role as alternative
hormone replacement therapy. Recent trials have not shown a beneficial effect of
Ginkgo biloba in tinnitus and acute mountain sickness. Ginkgo biloba increased
the bioavailability of diltiazem. The extract has been shown to protect against
doxorubicin-induced cardiotoxicity and gentamicin-induced nephrotoxicity in
animals. Ginkgo biloba inhibits microsomal enzymes and has a potential for drug
interactions. Further studies to establish the efficacy of Ginkgo biloba are
required.

Publication Types:
    Review

PMID: 16400219 [PubMed - indexed for MEDLINE]

12: J Ethnopharmacol. 2005 Aug 22;100(1-2):95-9.

Ginkgo biloba extracts for tinnitus: More hype than hope?

Smith PF, Zheng Y, Darlington CL.

Department of Pharmacology and Toxicology, School of Medical Sciences, University
of Otago, Dunedin, New Zealand. paul.smith@stonebow.otago.ac.nz

The investigation into the effects of Ginkgo biloba extracts on tinnitus has
suffered from a dearth of effective animal models as well as systematic clinical
trials employing double-blind and placebo-controlled designs. Some clinical
trials have yielded positive results, however, these studies are few and have
been limited either by design flaws, the small size of the significant effects,
or else the results have not been published in peer-reviewed journals and
therefore the quality of the research is not assured. By contrast, the two most
systematic clinical trials, both double-blind and placebo controlled, and
published in respected peer-reviewed journals, have yielded negative results and
suggest that Ginkgo biloba extracts are of little more use in the treatment of
tinnitus than a placebo. Treatments for tinnitus that do not have therapeutic
efficacy not only waste money but can potentially prevent patients from seeking
therapy that is efficacious. Furthermore, the unsupervised use of Ginkgo biloba
extracts with other medications could lead to adverse side effects which are
unnecessary and not justified in terms of therapeutic benefit.

Publication Types:
    Research Support, Non-U.S. Gov't
    Review

PMID: 15998570 [PubMed - indexed for MEDLINE]

13: Am J Otolaryngol. 2005 Mar-Apr;26(2):113-7.

Intratympanic dexamethasone injection effects on transient-evoked otoacoustic
emission.

Yilmaz I, Yilmazer C, Erkan AN, Aslan SG, Ozluoglu LN.

Department of Otolaryngology Head and Neck Surgery, Adana Teaching and Medical
Research Center, Baskent University Faculty of Medicine, Turkey.
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PURPOSE: To investigate the effects of intratympanic dexamethasone injection, which is done because of tinnitus, on transient evoked otoacoustic emission (TEOAE) and so determine whether given dexamethasone cause any damage in the inner ear. PATIENTS AND METHODS: Twenty-six patients, aged between 32 and 75, with subjective tinnitus, were randomly selected. The selected patients were the ones whose improvement had not been achieved through minimum 6 months' medical therapy (eg, Ginkgo biloba extract EGb 761, betahistidine, and trimetazidin) and who were free of systemic or otolaryngologic disease (hypertension, diabetes mellitus, hypo/hypertyroidi, hypercholesterolemia, Meniere disease, and otosclerosis). Before and after the injections, audiometry including high-frequency tinnitus matching and TEOAE tests were done. The injections of 4 mg/mL dexamethasone were done 5 times in fixed protocols on days 0, 2, 4, 6, and 8. After each injection, the patients were kept supine for 60 minutes with the head turned 45 degrees to opposite ear. Paired t test was used to compare the beginning and final measurements. RESULTS: Temporary pain and vertigo attacks which lasted at most for 15 minutes occurred in some patients only during injections. Neither infection nor persistent perforation occurred in any patients. After the management, there was no significant difference on patient's pure tone averages (P = .067) and high-frequency averages (P = .592). When the obtained TEOAE results before and after management were compared, the only significant increase was detected in the reproducibility values (P = .042). There was no significant difference in other TEOAE parameters which are stimulus stability, stimulus intensity, and overall signal-to-noise ratio (P > .05). There is no fixed criteria for rejecting a response solely on the reproducibility. However, a high value of the reproducibility (or increase in reproducibility) is always meaningful. CONCLUSION: Intratympanic dexamethasone used for management in many indications, primarily in Meniere and tinnitus patients, was found to increase the reproducibility values of otoacoustic emission. Despite the fact that there was not a reasonable increase in the responses coming from the outer hair cells, the result was considered positive for the study as the responses did not decrease. It is found out that 4 mg/mL

dexamethasone given intratympanically does not adversely affect the outer hair
cell function as measured by otoacoustic emission. Within the limits of this
study, dexamethasone appears to be safe when given intratympanically.

Publication Types:
    Clinical Trial

PMID: 15742264 [PubMed - indexed for MEDLINE]

14: Clin Otolaryngol Allied Sci. 2004 Jun;29(3):226-31.

Ginkgo biloba does not benefit patients with tinnitus: a randomized placebo-controlled double-blind trial and meta-analysis of randomized trials.

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The objective was to ascertain if Ginkgo biloba benefits patients with tinnitus.
The study design was: 1. Randomized double blind trial of Ginkgo biloba versus
placebo; 2. A meta-analysis of randomized placebo controlled double blind trials.
Participants included 66 adult patients with tinnitus and six (including our
study) randomized placebo controlled double blind trials were meta-analysed.The
main outcome measures were the Tinnitus Handicap Inventory (THI), Glasgow Health
Status Inventory (GHSI) and average of hearing threshold at 0.5, 1, 2, 4 kHz. In
the meta-analysis the proportion of patients gaining benefit and an overall odds
ratio were determined. The results showed the mean difference in change of the
THI, GHSI and hearing between Ginkgo biloba (n = 31) and placebo group (n = 29)
was 2.51 (CI -10.1, 5.1, P = 0.51), 0.58 (CI-4.8, 3.6, P = 0.38) and 0.68 db (CI
-4.13, 2.8, P = 0.69). Meta-analysis revealed 21.6% of Ginkgo biloba treated
patients (n = 107/552) gained benefit versus 18.4% (n = 87/504) of placebo
treated patients with an odds ratio of 1.24 (CI 0.89, 1.71). In conclusion,
Ginkgo biloba does not benefit patients with tinnitus.

Publication Types:
    Clinical Trial
    Meta-Analysis
    Randomized Controlled Trial

PMID: 15142066 [PubMed - indexed for MEDLINE]

15: Cochrane Database Syst Rev. 2004;(2):CD003852.

Ginkgo biloba for tinnitus.

Hilton M, Stuart E.

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BACKGROUND: Tinnitus can be described as the perception of sound in the absence of external acoustic stimulation. At present no specific therapy for tinnitus is acknowledged to be satisfactory in all patients. There are a number of reports in the literature suggesting that Ginkgo biloba may be effective in the management of tinnitus. However, there also appears to be a strong placebo effect in tinnitus management. OBJECTIVES: To assess the effect of Ginkgo biloba in patients who are troubled by tinnitus. SEARCH STRATEGY: The Cochrane Central Register of Controlled Trials (CENTRAL) (Cochrane Library Issue 4 2003), MEDLINE (1966 - 2003), EMBASE (1974 - 2003), and reference lists of identified publications. Date of the most recent search was December 2003. SELECTION CRITERIA: Adults (18 years and over) complaining of tinnitus.Adults with a primary complaint of cerebral insufficiency where tinnitus forms part of the syndrome. DATA COLLECTION AND ANALYSIS: Both reviewers independently extracted data and assessed trials for quality. MAIN RESULTS: Twelve trials were identified from the search as being relevant to the review. Ten trials were excluded on methodological grounds. No trials of tinnitus in cerebral insufficiency reached a satisfactory standard for inclusion in the review. There was no evidence that Ginkgo biloba was effective for the primary complaint of tinnitus. The incidence of side effects was small. REVIEWERS' CONCLUSIONS: The limited evidence did not demonstrate that Ginkgo biloba was effective for tinnitus which is a primary complaint. There was no reliable evidence to address the question of Ginkgo biloba for tinnitus associated with cerebral insufficiency.

Publication Types:
    Review

PMID: 15106224 [PubMed - indexed for MEDLINE]

16: Curr Pharm Des. 2004;10(3):261-4.

Review about Ginkgo biloba special extract EGb 761 (Ginkgo).

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Ginkgo biloba extracts (EGb) are well-defined plant extracts. It has several
indications as dementia, macula degeneration, tinnitus and winter depression. A
review of the current and past literature about older people with Alzheimer's
dementia or vascular dementia or age-associated memory impairment treated with
Ginkgo biloba extract, reveals that EGb has reproducible effects on cognitive
functions in Alzheimer's disease. The drug is well tolerated.

Publication Types:
    Review

PMID: 14754386 [PubMed - indexed for MEDLINE]

17: Int Tinnitus J. 2000;6(1):56-62.

Gingko biloba (Rökan) therapy in tinnitus patients and measurable interactions
between tinnitus and vestibular disturbances.

Schneider D, Schneider L, Shulman A, Claussen CF, Just E, Koltchev C, Kersebaum
M, Dehler R, Goldstein B, Claussen E.

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Tinnitus is one of the most important symptoms in neurootology after vertigo,
nausea, and hearing loss. In most cases, the origin of the tinnitus remains
inexplicable. Well-known, however, is that tinnitus may arise in any part of the
hearing pathway (i.e., both within the cochlea receptor and in the temporal lobe
and projections). Tinnitus also is associated frequently with vertigo, nausea and
hearing loss. An age predominance exists, with tinnitus more common among those
older than 40 years. From this starting point, a great demand exists today for
new ideas and developments in the diagnosis and treatment of tinnitus.

Publication Types:
    Case Reports

PMID: 14689620 [PubMed - indexed for MEDLINE]

18: J Fam Pract. 2003 Oct;52(10):766, 769.

Ginkgo ineffective for tinnitus.

DeBisschop M.

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medrx@uwyo.edu

PMID: 14529599 [PubMed - indexed for MEDLINE]

19: Am Fam Physician. 2003 Sep 1;68(5):923-6.

Ginkgo biloba.

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Ginkgo biloba is commonly used in the treatment of early-stage Alzheimer's
disease, vascular dementia, peripheral claudication, and tinnitus of vascular
origin. Multiple trials investigating the efficacy of ginkgo for treating
cerebrovascular disease and dementia have been performed, and systematic reviews
suggest the herb can improve the symptoms of dementia. Ginkgo is generally well
tolerated, but it can increase the risk of bleeding if used in combination with
warfarin, antiplatelet agents, and certain other herbal medications. Clinical
issues of safety, dosing, use in the perioperative period, and pharmacology are
addressed in this review.

Publication Types:
    Research Support, U.S. Gov't, P.H.S.
    Review

PMID: 13678141 [PubMed - indexed for MEDLINE]

20: Pharmacopsychiatry. 2003 Jun;36 Suppl 1:S44-9.

Magnitude of effect and special approach to Ginkgo biloba extract EGb 761 in
cognitive disorders.

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In the early 70's, improvements in methodical procedures of extraction and
standardization of ginkgo preparation allowed the production of a highly
concentrated and stable extract (EGb 761) (definition see editorial) by the
company Dr. Willmar Schwabe, which could be systematically tested in scientific
programs. Consequently, numerous studies have been undertaken and provided

replicable outcomes to demonstrate its efficacy in human population. EGb 761 is
currently registered as an ethical drug in more than 50 countries around the
world, and is prescribed for a range of neurological and vascular disorders
including dementia, arterial occlusive disease, retinal deficit, and tinnitus.
The following chapter will focus on the relevant data that support EGb 761
efficacy in the treatment of cognitive disorders in general, and dementia in
particular. Besides the published data, the author will provide original results
unveiling different factors that could interfere with EGb 761 efficacy and may be
the source of the variations observed among studies in the EGb 761 literature. In
the author's opinion, such factors should be taken into consideration when
implementing the design of future research and optimizing individual EGb 761
response in the clinical practice. Within the framework of this new approach, the
author will not only answer the question as to whether EGb 761 works over placebo
in cognitive disorders, but also attempt to estimate how well it works in
particular conditions.

Publication Types:
    Historical Article
    Review

PMID: 13130388 [PubMed - indexed for MEDLINE]

21: Forsch Komplementarmed Klass Naturheilkd. 2003 Apr;10 Suppl 1:17-27.

Systematic reviews of herbal medicines--an annotated bibliography.

Linde K, ter Riet G, Hondras M, Vickers A, Saller R, Melchart D; Cochrane
Complementary Medicine Field.

Centre for Complementary Medicine Research, Department of Internal Medicine II,
Technische Universität, München, Germany.

OBJECTIVE: To provide a comprehensive collection and a summary of systematic
reviews of clinical trials on herbal medicines. METHODS: Potentially relevant
reviews were searched through the register of the Cochrane Complementary Medicine
Field, the Cochrane Library, Medline, and bibliographies of articles and books.
To be included articles had to review prospective clinical trials of herbal
medicines; had to describe review methods explicitly; had to be published; and

had to focus on treatment effects. Information on conditions, interventions, methods, results and conclusions was extracted using a pretested form and summarized descriptively. RESULTS: From a total of 79 potentially relevant reviews preselected in the screening process 58 met the inclusion criteria. 30 of the reports reviewed ginkgo (for dementia, intermittent claudication, tinnitus, and macular degeneration), hypericum (for depression) or garlic preparations (for cardiovascular risk factors and lower limb atherosclerosis). The quality of primary studies was criticized in the majority of the reviews. Most reviews judged the available evidence as promising but definitive conclusions were rarely possible. CONCLUSIONS: Systematic reviews are available on a broad range of herbal preparations prescribed for defined conditions. There is very little evidence on the effectiveness of herbalism as practiced by specialist herbalists who combine herbs and use unconventional diagnosis.

Publication Types:
    Bibliography
    Research Support, Non-U.S. Gov't
    Research Support, U.S. Gov't, P.H.S.

PMID: 12808358 [PubMed - indexed for MEDLINE]

22: Drugs R D. 2003;4(3):188-93.

EGb 761: ginkgo biloba extract, Ginkor.

[No authors listed]

EGb 761 [Ginkgo biloba extract EGb 761, Rökan, Tanakan, Tebonin] is a standardised extract of Ginkgo biloba leaves and has antioxidant properties as a free radical scavenger. A standardised extract of Ginkgo biloba leaves is a well defined product and contains approximately 24% flavone glycosides (primarily quercetin, kaempferol and isorhamnetin) and 6% terpene lactones (2.8-3.4% ginkgolides A, B and C, and 2.6-3.2% bilobalide). Ginkgolide B and bilobalide account for about 0.8% and 3% of the total extract, respectively. Other constituents include proanthocyanadins, glucose, rhamnose, organic acids, D-glucaric and ginkgolic acids. EGb 761 promotes vasodilation and improves blood flow through arteries, veins and capillaries. It inhibits platelet aggregation

and prolongs bleeding time. EGb 761, which was originated by Dr Willmar Schwabe Pharmaceuticals (Dr Willmar Schwabe Group), has been available in Europe as a herbal extract since the early 1990s. However, products containing EGb 761 are not approved for use by the US FDA. As a dietary supplement, Nature's Way in the US distributes and markets a standardised extract of Ginkgo biloba leaves (the EGb 761 Formula) under the name Gingold Nature's Way. The French company Beaufour-Ipsen and its German subsidiary Ipsen Pharma are co-developing EGb 761 with Dr Willmar Schwabe Group. Beaufour-Ipsen (France) is developing EGb 761 as Tanakan, Dr Willmar Schwabe Pharmaceuticals (Germany) as Tebonin and Ipsen Pharma (Germany) as Rökan. Intersan was formerly developing EGb 761 in Germany, but Intersan appears to have been merged into Ipsen Pharma. However, there has been no recent development for these indications. In the UK and other European countries, the cardioprotective effects of EGb 761 in myocardial ischaemia and reperfusion are being investigated in preclinical studies. The psychological and physiological benefits of ginkgo are said to be based on its primary action of regulating neurotransmitters and exerting neuroprotective effects in the brain, protecting against or retarding nerve cell degeneration. Ginkgo also benefits vascular microcirculation by improving blood flow in small vessels and has antioxidant activity. There has been conflicting evidence about the benefits of ginkgo, e.g. the ginkgo clinical trial published in August 2002 in JAMA concluded that a leading ginkgo supplement did not produce measurable benefits for memory in healthy adults over 60, although a month earlier, another study concluded that the same ginkgo extract is effective in helping normal healthy older adults in memory and concentration. However, in December 2002, the Cochrane Collaboration, the world's most respected scientific reviewer of clinical trials in medicine, concluded that the published literature strongly supports the safety and potential benefits of ginkgo in treating memory loss and cognitive disorders associated with age- related dementia. A phase II study of EGb 761 in combination with fluorouracil is in progress in Germany in patients with pancreatic cancer.
German researchers are investigating the potential of EGb 761 for the treatment

of sudden deafness and tinnitus in clinical studies. EGb 761 was undergoing preclinical development for the potential treatment of diabetes in France, diabetic neuropathies in Russia, and cancer in Brazil. However, there has been no recent development for these indications. Beaufour-Ipsen has expressed the intention to license out its diabetes projects that may include EGb 761.

Publication Types:
    Review

PMID: 12757407 [PubMed - indexed for MEDLINE]

23: Health News. 2003 Jan;9(1):12.

Are there any studies showing whether ginkgo biloba is effective for tinnitus (ringing in the ears)?

Feinberg AW.

PMID: 12545957 [PubMed - indexed for MEDLINE]

24: Cochrane Database Syst Rev. 2002;(4):CD003120.

Update in:
    Cochrane Database Syst Rev. 2007;(2):CD003120.

Ginkgo biloba for cognitive impairment and dementia.

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BACKGROUND: Extracts of the leaves of the maidenhair tree, Ginkgo biloba, have long been used in China as a traditional medicine for various disorders of health. A standardized extract is widely prescribed in Germany and France for the treatment of a range of conditions including memory and concentration problems, confusion, depression, anxiety, dizziness, tinnitus and headache. The mechanisms of action are thought to reflect the action of several components of the extract and include increasing blood supply by dilating blood vessels, reducing blood viscosity, modification of neurotransmitter systems, and reducing the density of oxygen free radicals. OBJECTIVES: The aim of the review is to assess the efficacy and safety of Ginkgo biloba for the treatment of patients with dementia or cognitive decline. SEARCH STRATEGY: Trials were identified on 26 June 2002

through a search of the CDCIG Specialized Register which contains records from
all main medical databases (MEDLINE, EMBASE, CINAHL, PsycINFO, SIGLE,LILACS),
from ongoing trials databases such as Clinicaltrials.gov and Current Controlled
Trials and many other sources. The search terms used were ginkgo*, tanakan,
EGB-761, EGB761 and "EGB 761". SELECTION CRITERIA: All relevant, unconfounded,
randomized, double-blind controlled studies, in which extracts of Ginkgo biloba
at any strength and over any period were compared with placebo for their effects
on people with acquired cognitive impairment, including dementia, of any degree
of severity. DATA COLLECTION AND ANALYSIS: Data for the meta-analyses are based
on reported summary statistics for each study. For the intention-to-treat
analyses we sought data for each outcome measure on every patient randomized,
irrespective of compliance. For the analyses of completers we sought data on
every patient who completed the study on treatment. For continuous or ordinal
variables, such as psychometric test scores, clinical global impression scales,
and quality of life scales, there are two possible approaches. If ordinal scale
data appear to be approximately normally distributed, or if the analyses reported
by the investigators suggest that parametric methods and a normal approximation
are appropriate, then the outcome measures will be treated as continuous
variables. The second approach, which may not exclude the first, is to
concatenate the data into two categories which best represent the contrasting
states of interest, and to treat the outcome measure as binary. For binary
outcomes, the endpoint itself is of interest and the Peto method of the typical
odds ratio is used. MAIN RESULTS: Overall, there are no significant differences
between Ginkgo and placebo in the proportion of participants experiencing adverse
events. Most studies report the analyses of data from participants who completed
the treatment, there are few attempts at ITT analyses. Therefore we report
completers analyses only. The CGI scale, measuring clinical global improvement as
assessed by the physician, was dichotomized between participants who showed
improvement and those who were unchanged or worse. There are benefits associated
with Ginkgo (dose less than 200mg/day) compared with placebo at less than 12
weeks (54/63 showed improvement compared with 20/63, OR 15.32, 95% CI 5.90 to

39.80, P=<.0001), and Ginkgo (dose greater than 200mg/day) at 24 weeks (57/79
compared with 42/77, OR 2.16, 95% CI 1.11 to 4.20, P=.02). Cognition shows
benefit for Ginkgo (dose less than 200mg/day) compared with placebo at 12 weeks
(SMD -0.57, 95% CI -1.09, -0.05, P=0.03, random effects model), Ginkgo (greater
than 200 mg/day) at 12 weeks (SMD -0.56, 95% CI -1.12 to -0.0, P=0.05), at 12
weeks (Ginkgo any dose) (SMD -0.71, 95% CI -1.23 to -0.19 P=0.008, random effects
model) at 24 weeks (Ginkgo any dose) (SMD -0.17, 95% CI -0.32 to -0.02 P=0.03)
and at 52 weeks (Ginkgo less than 200 mg/day) (SMD -0.41, 95% CI -0.71 to -0.11,
P=<.01). Activities of Daily Living (ADL) shows benefit for Ginkgo (dose less
than 200mg/day) compared with placebo at 12 weeks (SMD -1.10, 95% CI -1.79,
-0.41, P=0mg/day) compared with placebo at 12 weeks (SMD -1.10, 95% CI -1.79,
-0.41, P=<.01), Ginkgo (dose less than 200 mg/day) at 24 weeks (SMD -0.25, 95%
CI -0.49 to -0.00, P=.05), and at 52 weeks (Ginkgo less than 200 mg/day) (SMD
-0.41, 95% CI -0.71 to -0.11, P=<.01). Measures of mood and emotional function
show benefit for Ginkgo (dose less than 200 mg/day) compared with placebo at less
than 12 weeks (SMD -0.51, 95% CI -0.99 to -0.03, P=.04) and Ginkgo (dose less
than 200mg/day) at 12 weeks (SMD -1.94, 95% CIs -2.73, -1.15 P=<.0001). There are
no significant differences between Ginkgo and placebo in the proportion of
participants experiencing adverse events. There are no data available on Quality
of Life, measures of depression or dependency. REVIEWER'S CONCLUSIONS: Ginkgo
biloba appears to be safe in use with no excess side effects compared with
placebo. Many of the early trials used unsatisfactory methods, were small, and we
cannot exclude publication bias. Overall there is promising evidence of
improvement in cognition and function associated with Ginkgo. However, the three
more modern trials show inconsistent results. Our view is that there is need for
a large trial using modern methodology and permitting an intention-to-treat
analysis to provide robust estimates of the size and mechanism of any treatment
effects.

Publication Types:
    Meta-Analysis
    Review

PMID: 12519586 [PubMed - indexed for MEDLINE]

25: Int J Clin Pharmacol Ther. 2002 May;40(5):188-97.

The efficacy of Ginkgo special extract EGb 761 in patients with tinnitus.

Morgenstern C, Biermann E.

Allgemeines Krankenhaus St. Georg. Hamburg, Germany.

OBJECTIVE: The objective of the present study in 60 patients with chronic tinnitus aurium was to confirm the efficacy of oral treatment with 2 x 80 mg Ginkgo special extract EGb 761 per day subsequent to 10-day EGb 761 infusion treatment. METHODS: Patients with chronic tinnitus aurium underwent 10 days of in-patient infusion treatment with 200 mg/day EGb 761, after which they were randomized to double-blind, oral out-patient treatment with either 2 x 80 mg/day EGb 761 or placebo, given over a scheduled treatment period of 12 weeks. The primary outcome measure was the change in tinnitus volume in the more severely affected ear during randomized treatment. RESULTS: Fifty-two of 60 patients (89.7%) completed the infusion treatment; complete sets of data were available for 40 (66.7%), 30 (50.0%) and 22 (36.7%) patients after 4, 8 and 12 weeks of randomized treatment, respectively. For the primary outcome measure, significant superiority of EGb 761 over placebo was demonstrated in the intention-to-treat analysis data set after 4, 8 and 12 weeks of out-patient treatment ($p < 0.05$, 1-tailed), although the absolute treatment group difference was moderate. The results were supported by the secondary outcome measures for efficacy (e.g. decreased hearing loss, improved self-assessment of subjective impairment). During out-patient treatment, there were no attributable adverse events under EGb 761. CONCLUSIONS: A combination of infusion therapy followed by oral administration of Ginkgo special extract EGb 761 appears to be effective and safe in alleviating the symptoms associated with tinnitus aurium.

Publication Types:
    Clinical Trial
    Randomized Controlled Trial

PMID: 12051570 [PubMed - indexed for MEDLINE]

26: Ann Intern Med. 2002 Jan 1;136(1):42-53.

Erratum in:
    Ann Intern Med 2003 Jan 7;138(1):79.

Comment in:
ACP J Club. 2002 Jul-Aug;137(1):25. Ann Intern Med. 2002 Dec 17;137(12):1008; author reply 1008. Evid Based Nurs. 2002 Jul;5(3):80.

The risk-benefit profile of commonly used herbal therapies: Ginkgo, St. John's Wort, Ginseng, Echinacea, Saw Palmetto, and Kava.

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Because use of herbal remedies is increasing, a risk-benefit profile of commonly used herbs is needed. This article provides a clinically oriented overview of the efficacy and safety of ginkgo, St. John's wort, ginseng, echinacea, saw palmetto, and kava. Wherever possible, assessments are based on systematic reviews of randomized clinical trials. Encouraging data support the efficacy of some of these popular herbal medicinal products, and the potential for doing good seems greater than that for doing harm. The published evidence suggests that ginkgo is of questionable use for memory loss and tinnitus but has some effect on dementia and intermittent claudication. St. John's wort is efficacious for mild to moderate depression, but serious concerns exist about its interactions with several conventional drugs. Well-conducted clinical trials do not support the efficacy of ginseng to treat any condition. Echinacea may be helpful in the treatment or prevention of upper respiratory tract infections, but trial data are not fully convincing. Saw palmetto has been shown in short-term trials to be efficacious in reducing the symptoms of benign prostatic hyperplasia. Kava is an efficacious short-term treatment for anxiety. None of these herbal medicines is free of adverse effects. Because the evidence is incomplete, risk-benefit assessments are not completely reliable, and much knowledge is still lacking.

Publication Types:
Meta-Analysis
Review

PMID: 11777363 [PubMed - indexed for MEDLINE]

27: MMW Fortschr Med. 2001 Nov 29;143(48):58.

[Instead of expensive infusion therapy, ambulatory phytotherapy in tinnitus
treatment]

[Article in German]

[No authors listed]

Publication Types:
    Comparative Study
    News

PMID: 11770380 [PubMed - indexed for MEDLINE]

28: Otol Neurotol. 2001 Nov;22(6):711-4.

Comment in:
    Otol Neurotol. 2002 Mar;23(2):239-40.   Otol Neurotol. 2002 May;23(3):411; author reply 411-2.   Otol Neurotol. 2002 Nov;23(6):1013-5; author reply 1015-6.

Myths in neurotology, revisited: smoke and mirrors in tinnitus therapy.

Howard ML.

Publication Types:
    Editorial
    Historical Article

PMID: 11698785 [PubMed - indexed for MEDLINE]

29: Acta Otolaryngol. 2001 Jul;121(5):579-84.

Ginkgo biloba extract EGb 761 or pentoxifylline for the treatment of sudden
deafness: a randomized, reference-controlled, double-blind study.

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In a randomized, prospective, double-blind study involving 72 patients, the
therapeutic efficacy of ginkgo extract EGb 761 (n = 37) was compared to that of
pentoxifylline (n = 35) for the treatment of sudden deafness. The two therapeutic
schedules were equally well tolerated and showed a statistically significant
equivalence in improvement or in return to normal of the auditory thresholds in
the two patient groups. Furthermore, no differences were found between the
treatment groups with regard to the criteria for a return to normal of speech
discrimination and reduction of the tinnitus which arose at the same time as the

sudden hearing loss. The patient's subjective assessment of the treatment with regard to improvement in hearing and reduction in tinnitus suggested that Ginkgo biloba extract was more beneficial than pentoxifylline. In summary, it was shown that treatment of sudden deafness with ginkgo special extract EGb 761 was as effective as treatment with pentoxifylline.

Publication Types:
    Clinical Trial
    Comparative Study
    Randomized Controlled Trial

PMID: 11583389 [PubMed - indexed for MEDLINE]

30: Eur Arch Otorhinolaryngol. 2001 Jul;258(5):213-9.

Effect of treatment with Ginkgo biloba extract EGb 761 (oral) on unilateral idiopathic sudden hearing loss in a prospective randomized double-blind study of 106 outpatients.

Burschka MA, Hassan HA, Reineke T, van Bebber L, Caird DM, Mösges R.

Institut für Medizinische Statistik, Informatik und Epidemiologie der Medizinischen Einrichtungen der Universität Köln, Germany.

OBJECTIVE: Test of dose-response relationship for Ginkgo biloba extract EGb 761 (oral) in outpatients with acute idiopathic sudden sensorineural hearing loss (ISSHL) of at least 15 dB at one frequency within the speech range occurring less than 10 days before study inclusion. DESIGN: Multicentre, randomized, double-blind phase III study comparing dosages of 120 mg twice daily and 12 mg twice daily over 8 weeks. MAIN ENDPOINT: Recovery (in dB) of the auditory threshold from the initial measurement to the value on the last day of treatment, averaged over those frequencies from 0.25, 0.5, 1, 2, and 3 kHz for which the initial hearing loss amounted to 15 dB or more compared to the level on the opposite side. PATIENTS: 106 patients with an average age of 44+/-16 years and with hearing loss at affected frequencies 26 dB +/- 9 dB included between December 1995 and July 1997. RESULTS: Large majorities of both treatment groups recovered completely. In exploratory analyses of the 96 patients included according to the protocol, patients given the higher dose had less risk of not recovering well (< or =10 dB residual hearing loss) (one-sided Fisher test: P = 0.0061), especially if they had no tinnitus (n = 44, P = 0.00702). CONCLUSION: A

higher dosage of EGb 761 (oral) appears to speed up and secure the recovery of ISSHL patients, with a good chance that they will recover completely, even with little treatment. This was already observed after one week of treatment. We find it justified to treat patients who have unilateral ISSHL of less than 75 dB and neither tinnitus nor vertigo with 120 mg oral EGb 761 twice daily.

Publication Types:
    Clinical Trial
    Clinical Trial, Phase III
    Multicenter Study
    Randomized Controlled Trial

PMID: 11548897 [PubMed - indexed for MEDLINE]

31: BMC Complement Altern Med. 2001;1:5. Epub 2001 Jul 20.

Systematic reviews of complementary therapies - an annotated bibliography. Part 2: herbal medicine.

Linde K, ter Riet G, Hondras M, Vickers A, Saller R, Melchart D.

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BACKGROUND: Complementary therapies are widespread but controversial. We aim to provide a comprehensive collection and a summary of systematic reviews of clinical trials in three major complementary therapies (acupuncture, herbal medicine, homeopathy). This article is dealing with herbal medicine. Potentially relevant reviews were searched through the register of the Cochrane Complementary Medicine Field, the Cochrane Library, Medline, and bibliographies of articles and books. To be included articles had to review prospective clinical trials of herbal medicines; had to describe review methods explicitly; had to be published; and had to focus on treatment effects. Information on conditions, interventions, methods, results and conclusions was extracted using a pre-tested form and summarized descriptively. RESULTS: From a total of 79 potentially relevant reviews pre-selected in the screening process 58 met the inclusion criteria. Thirty of the reports reviewed ginkgo (for dementia, intermittent claudication, tinnitus, and macular degeneration), hypericum (for depression) or garlic preparations (for cardiovascular risk factors and lower limb atherosclerosis).

The quality of primary studies was criticized in the majority of the reviews.
Most reviews judged the available evidence as promising but definitive conclusions were rarely possible. CONCLUSIONS: Systematic reviews are available
on a broad range of herbal preparations prescribed for defined conditions. There
is very little evidence on the effectiveness of herbalism as practised by
specialist herbalists who combine herbs and use unconventional diagnosis.

Publication Types:
    Research Support, Non-U.S. Gov't
    Research Support, U.S. Gov't, P.H.S.
    Review

PMID: 11518548 [PubMed - indexed for MEDLINE]

32: HNO. 2001 Jun;49(6):434-6.

[Ginkgo biloba: ineffective against tinnitus?]

[Article in German]

Hesse G, Schaaf H.

Tinnitus-Klinik Arolsen, Hesse(n) Ohr- und Hörinstitut, Grosse Allee 1-3, 34454
Bad Arolsen. ghesse@tinnitus-klinik.de

PMID: 11450509 [PubMed - indexed for MEDLINE]

33: BMJ. 2001 May 19;322(7296):1249.

Comment on:
    BMJ. 2001 Jan 13;322(7278):73.

Marketing studies and scientific research must be distinct.

Ernst E.

Publication Types:
    Comment
    Letter

PMID: 11388189 [PubMed - indexed for MEDLINE]

34: An Otorrinolaringol Ibero Am. 2001;28(1):75-85.

[Therapy perspectives in subjective tinnitus]

[Article in Spanish]

Lacosta Nicolás JL, García Cano J.

Hospital San Millán (Servicio de O.R.L.), Logroño.

The AA. of this article have achieved a bibliographical perusal about treatment

of subjective tinnitus, including even papers based on controlled clinical trials. Pharmacologic agents are settled on vasodilators of cochlear microcirculation (nimodipine, trimetazidine, Ginkgo biloba extract, misoprostol), lidocaine, the anxiolitics (alprazolam, corazepam) and the antidepressants (nortrityline). Comments sonorous amplification. Also are displayed, because of their benefits, the relaxation techniques (biofeeback, hypnotherapy, acupuncture and yoga) and psychological counseling.

Publication Types:
    English Abstract
    Review

PMID: 11265522 [PubMed - indexed for MEDLINE]

35: Fortschr Med Orig. 2001 Jan 11;118(4):157-64.

[Ginkgo special extract EGb 761 in tinnitus therapy. An overview of results of completed clinical trials]

[Article in German]

Holstein N.

Facharzt für Hals-Nasen-Ohrenheilkunde, Allergologie, Chirotherapie, Stimm- und Sprachstörungen, Neuensteinstrasse 14, D-76227 Karlsruhe.

In a systematic search of the literature 19 clinical trials investigating the effects of tinnitus treatment with Ginkgo biloba special extract EGb 761 were identified and evaluated. The results of eight controlled studies on tinnitus due to cerebrovascular insufficiency or labyrinthine disorders of varying genesis for the most part show a statistically significant superiority of treatment with the Ginkgo biloba special extract EGb 761 as compared with placebo or reference drugs applied of periods of one to three months. Open studies, too, some involving large numbers of patients, revealed appreciable improvements under ginkgo treatment. Therapeutic success was not directly correlated with either the genesis or the duration of tinnitus. However, investigations of prognostic factors revealed that short-standing disorders have a better prognosis, so that better results can be expected from early-onset treatment. The tolerability of Ginkgo biloba special extract EGb 761 was excellent, and in this respect the controlled clinical trials revealed little difference between drug-treated and

control groups.

Publication Types:
    English Abstract
    Review

PMID: 11217680 [PubMed - indexed for MEDLINE]

36: Int Tinnitus J. 1999;5(2):141-3.

Tinnitus program at Brasília University Medical School.

Oliveira CA, Venosa A, Araújo MF.

Department of Otolaryngology, Brasília University Medical School, Brasília, DF,
Brasil.

Over the last 6 months, all patients seen at the otologic clinic of Brasília
University Medical School answered a questionnaire designed to identify and
describe the symptom of tinnitus. A total of 500 patients reported and described
this symptom. They underwent physical examination, laboratory tests and
audiological evaluation. In their order of frequency, presbycusis, chronic otitis
media, otosclerosis, acoustic trauma, Menière's disease, ototoxicity, and
vestibular schwannoma were found. Tinnitus was rated as minor in 81%, moderate in
18%, and severely disabling in 1%. Those who requested treatment for tinnitus
were treated medically. Central vasodilators, vestibular suppressants, calcium
channel blockers, anticholinergic drugs, anticonvulsant drugs, and gingko biloba
were used with variable results. Tinnitus maskers were not used, but hearing
prostheses were fitted when indicated. Treatment failed in the 1% with severe
disabling tinnitus, and they were entered in a double-blind, randomized protocol
for intratympanic dexamethasone injection. Under topical anesthesia, 0.2 ml of a
4-mg/ml dexamethasone solution (0.8 mg per injection) or 0.2 ml of normal saline
was injected just posterior to the umbo. Patients remained supine for 20 minutes
with the injected ear up and received four injections at 1-week intervals.
Preliminary results are reported. Tinnitus is a very frequent symptom among our
otologic patients, but most of them would not mention the symptom spontaneously,
probably because for 81% it was mild. Curiously, the 5% of the severely disabling
type tend to exhibit no clear cause, whereas the mild and moderate cases usually
have an identifiable etiology.

Publication Types:
    Clinical Trial
    Randomized Controlled Trial

PMID: 10753434 [PubMed - indexed for MEDLINE]

37: BMJ. 2001 Jan 13;322(7278):73.

Comment in:
    BMJ. 2001 May 19;322(7296):1249.

Effectiveness of Ginkgo biloba in treating tinnitus: double blind, placebo
controlled trial.

Drew S, Davies E.

Pharmacology Department, Division of Neuroscience, University of Birmingham,
Birmingham B15 2TT, UK. s.j.drew@bham.ac.uk

OBJECTIVE: To determine whether Ginkgo biloba is effective in treating tinnitus.
DESIGN: Double blind, placebo controlled trial using postal questionnaires.
PARTICIPANTS: 1121 healthy people aged between 18 and 70 years with tinnitus that
was comparatively stable; 978 participants were matched (489 pairs).
Intervention: 12 weeks' treatment with either 50 mg Ginkgo biloba extract LI 1370
three times daily or placebo. MAIN OUTCOME MEASURES: Participants' assessment of
tinnitus before, during, and after treatment. Questionnaires included items
assessing perception of how loud and how troublesome tinnitus was. Changes in
loudness were rated on a six point scale. Changes in how troublesome were rated
on a five point scale. RESULTS: There were no significant differences in primary
or secondary outcome measures between the groups. 34 of 360 participants
receiving active treatment reported that their tinnitus was less troublesome
after 12 weeks of treatment compared with 35 of 360 participants who took
placebo. CONCLUSIONS: 50 mg Ginkgo biloba extract LI 1370 given 3 times daily for
12 weeks is no more effective than placebo in treating tinnitus.

Publication Types:
    Clinical Trial
    Randomized Controlled Trial
    Research Support, Non-U.S. Gov't

PMID: 11154618 [PubMed - indexed for MEDLINE]

38: MMW Fortschr Med. 2000 Nov 23;142(47):46.

[Ginkgo extract helps patients suffering from tinnitus. Review of the literature
shows: tinnitus decreases]

[Article in German]

Holstein N.

Hals-Nasen-Ohrenheilkunde, Allergologie, Chirotherapie, Stimm- und Sprachstörungen, Neuensteinstr. 14, D-76227 Karlsruhe.

PMID: 11143781 [PubMed - indexed for MEDLINE]

39: Arch Phys Med Rehabil. 2000 May;81(5):668-78.

Ginkgo biloba extract: mechanisms and clinical indications.

Diamond BJ, Shiflett SC, Feiwel N, Matheis RJ, Noskin O, Richards JA, Schoenberger NE.

Department of Research, Center for Research in Complementary and Alternative
Medicine, Kessler Medical Rehabilitation Research and Education Corporation, West
Orange, NJ 07052, USA.

OBJECTIVE: Ginkgo biloba may have a role in treating impairments in memory,
cognitive speed, activities of daily living (ADL), edema, inflammation, and
free-radical toxicity associated with traumatic brain injury (TBI), Alzheimer's
dementia, stroke, vasoocclusive disorders, and aging. The purpose of this review
is to provide a synthesis of the mechanisms of action, clinical indications, and
safety of Ginkgo biloba extract. DATA SOURCES: Empirical studies, reviews,
chapters, and conference proceedings were identified in the following databases:
Medline, the Research Council for Complementary Medicine based on the British
Library database, and Psychlnfo. Ginkgo biloba, EGb 761, Tanakan, Tebonin, Rokan,
and LI 1370 were the principal index terms. STUDY SELECTION AND DATA EXTRACTION:
Controlled clinical studies with both positive and negative findings are
included, in addition to animals studies illustrating mechanisms of activity.
DATA SYNTHESIS: Ginkgo has shown activity centrally and peripherally, affecting
electrochemical, physiologic, neurologic, and vascular systems in animals and
humans with few adverse side effects or drug interactions. Ginkgo shows promise
in patients with dementia, normal aging, and cerebrovascular-related disorders.
Clinical indications include memory, information processing, and ADL.
CONCLUSIONS: Ginkgo shows promise in treating some of the neurologic sequelae

associated with Alzheimer's disease, TBI, stroke, normal aging, edema, tinnitus,
and macular degeneration. Mechanisms of action may include antioxidant,
neurotransmitter/receptor modulatory, and antiplatelet activating factor
properties. While safe, caution is advised when recommending ginkgo to patients
taking anticoagulants. Future studies should examine dose effects, component
activity, mechanisms, and clinical applications.

Publication Types:
    Research Support, U.S. Gov't, P.H.S.
    Review

PMID: 10807109 [PubMed - indexed for MEDLINE]

40: Ann Pharm Fr. 1999 Jul;57 Suppl 1:1S8-88.

[Ginkgo biloba extract (EGb 761). State of knowledge in the dawn of the year
2000]

[Article in French]

Clostre F.

Institut Henri Beaufour, Les Ulis.

EGb 761 is a standardized extract of dried leaves of Ginkgo biloba containing 24%
ginkgo-flavonol glycosides, 6% terpene lactones such as ginkgolides A, B, C, J
and bilobalide. Its broad spectrum of pharmacological activities allows it to be
in adequacy to the numerous pathological requirements--hemodynamic,
hemorheological, metabolic--which occur in cerebral, retinal, cochleovestibular,
cardiac or peripheral ischemia. Moreover, EGb 761 has direct effects against
necrosis and apoptosis of neurons and improves neural plasticity as evidenced in
vestibular compensation. At the molecular and the cellular levels, some evidence
obtained with animal models indicates that EGb 761 can interact as a free
radical-scavenger and a inhibitor of lipid peroxidation with all, or nearly all
reactive oxygen species; maintains ATP content by a protection of mitochondrial
respiration and preservation of oxidative phosphorylations; exerts arterial and
venous vasoregulator effects involving the release of endothelial factors and the
catecholaminergic system. Moreover, EGb 761 regulates ionic balance in damaged
cells and exerts a specific and potent Platelet-activating factor antagonist
activity. Numerous well-controlled clinical studies, realized in Europe and in

USA, have revealed that EGb 761 is an effective therapy for a wide variety of disturbances of cerebral function, ranging from cerebral impairment of ischemic vascular origins (i.e. multi infarct dementia), early cognitive decline to mild-to-moderate cases of the more severe types of senile dementias (including Alzheimer's disease) or mixed origins (i.e. psychoorganic origin). Improvement of signs and symptoms have been demonstrated for cognitive functions, particularly for memory loss, attention, alertness, vigilance, arousal and mental fluidity.
Some clinical studies have showed that EGb 761 treatment may improve the capacity of geriatric patients to cope with the stressful demands of daily life. The explanation is a dual stress-alleviating action of EGb 761: its facilitates behavioral adaptation to stress and may decrease the excess of cortisol release to stress. Moreover, EGb 761 shows a specific neuroprotective effects to hippocampic cells. Regarding the visual system, experimental studies have shown that EGb 761 can inhibit or reduce the functional retinal impairments resulting from ischemia-reperfusion, photo-degeneration, diabetic or proliferative retinopathy. Clinical studies have revealed that EGb 761 may be useful in treating visual activity impairments and damages to the visual field associated with chronic cerebrovascular insufficiency, senile macular degeneration and diabete mellitus. Regarding the vestibular and auditory systems, experimental and clinical studies have shown the efficacy of EGb 761 in treating hypoacusis, tinnitus, vertigo, dizziness and other symptoms of vestibulocochlear disorders.
At least, adequatly controlled studies in patients with peripheral arterial occlusive disease have provided good evidence for therapeutic efficacy in intermittent claudication. The future of EGb 761 is undoubtedly in the promise in slowing the progression of Alzheimer's disease. Indeed, two recent american clinical studies have shown the efficacy and safety of EGb 761 in patients with mild to severe Alzheimer's disease and multi-infarct dementia. In clinical terms, progression of symptoms was delayed by approximately 6 months. Actually new clinical studies are undertaken in USA and Europe. At the dawn of the third millenium (the Sixth for Ginkgo biloba) we propose a state of art about it.

Publication Types:
    English Abstract
    Review

PMID: 10481350 [PubMed - indexed for MEDLINE]

41: Clin Otolaryngol Allied Sci. 1999 Jun;24(3):164-7.

Ginkgo biloba for tinnitus: a review.

Ernst E, Stevinson C.

Department of Complementary Medicine, School of Postgraduate Medicine and Health
Sciences, University of Exeter, UK. E.Ernst@exeter.ac.uk

Publication Types:
    Clinical Trial
    Randomized Controlled Trial
    Review

PMID: 10384838 [PubMed - indexed for MEDLINE]

42: Adv Ther. 1998 Jan-Feb;15(1):54-65.

Clinical improvement of memory and other cognitive functions by Ginkgo biloba:
review of relevant literature.

Søholm B.

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Ginkgo biloba is a plant extract used to alleviate symptoms associated with
cognitive deficits, e.g., decreased memory performance, lack of concentration,
decreased alertness, tinnitus, and dizziness. Pharmacologic studies have shown
that the therapeutic effect of ginkgo is based on several active constituents
with vasoactive and free radical-scavenging properties. The use of ginkgo extract
in either dementias of the Alzheimer or multi-infarct type or in the case of
cerebral insufficiency, a symptom complex related to age-dependent impairment of
cerebral circulation, is based mainly on positive results from good-quality
placebo-controlled studies that enrolled approximately 1,200 patients with
criteria established by International Classification of Diseases (9th and 10th
revisions, ICD-9 and ICD-10) or the 3rd revision of the Diagnostic and
Statistical Manual (DSM-III-R) (uncomplicated dementia). Effect on cognitive
symptoms was within the range of a 25% reduction. Memory, concentration, and
alertness were the first symptoms to be relieved, with tinnitus and dizziness

improving somewhat later. A minimum of 4 to 6 weeks were needed before a
pronounced effect could be expected. The pharmacologic advantage of ginkgo seems
to be a very tolerable side-effect profile, with a side-effect frequency at the
placebo level.

Publication Types:
    Review

PMID: 10178638 [PubMed - indexed for MEDLINE]

43: Audiol Neurootol. 1997 Jul-Aug;2(4):197-212.

Attenuation of salicylate-induced tinnitus by Ginkgo biloba extract in rats.

Jastreboff PJ, Zhou S, Jastreboff MM, Kwapisz U, Gryczynska U.

Department of Surgery, University of Maryland School of Medicine, Baltimore
21201, USA. pjastreboff@surgery2.ab.umd.edu

The effects of an extract from Ginkgo biloba, EGb 761, on tinnitus were tested
using an animal model of tinnitus. Daily oral administration of EGb 761 in doses
from 10 to 100 mg/ kg/day began 2 weeks before behavioral procedures and
continued until the end of the experiment. Tinnitus was induced by daily
administration of 321 mg/kg sodium salicylate s.c. (corresponding to 275
mg/kg/day of salicylate acid) in fourteen groups of pigmented rats, 6
animals/group. The results from salicylate- and EGb-761-treated animals were
compared to control groups receiving either salicylate, saline, or EGb 761 only
in doses of 100 mg/kg. Administration of EGb 761 resulted in a statistically
significant decrease of the behavioral manifestation of tinnitus for doses of 25,
50 and 100 mg/kg/ day.

Publication Types:
    Research Support, Non-U.S. Gov't
    Research Support, U.S. Gov't, P.H.S.

PMID: 9390833 [PubMed - indexed for MEDLINE]

44: Rev Laryngol Otol Rhinol (Bord). 1995;116(5):377-80.

Therapeutic effect of hyperbaric oxygenation in acute acoustic trauma.

Vavrina J, Müller W.

Depart. of Otorhinolaryngology, Kantonsspital, Luzern, Switzerland.

Retrospectively 78 patients with uni- or bilateral acute acoustic trauma (AAT)

were evaluated to assess the therapeutic effect of hyperbaric oxygenation (HBO).
All subjects received saline or dextran (Rheomacodrex) infusions with Ginkgo extracts (Tebonin) and prednisone. Thirty six patients underwent additional hyperbaric oxygenation at a pressure of 2 atmospheres absolute for 60 minutes once daily. Both treatment groups were comparable as far as age, gender, initial hearing loss and prednisone dose are concerned. The delay of therapy onset was 15 hours in both groups and treatment was started within 72 hours in all cases.
Control audiometry was performed after 6.5 days, when the HBO group had had 5 exposures to hyperbaric oxygenation. The average hearing gain in the group without HBO was 74.3 dB and in the group treated additionally with HBO 121.3 dB ($P < 0.004$). It is concluded, that hyperbaric oxygenation significantly improves hearing recovery after AAT. Therefore acute acoustic trauma with significant hearing threshold depression remains an otological emergency. Minimal therapy involving waiting for spontaneous recovery, which is mostly incomplete leaving a residual C5 or C6 and handicapping tinnitus, is not the treatment of choice.
Randomized prospective clinical trials with a larger patient series are needed and further experimental studies are required to understand the physiological mechanisms of HBO responsible for the clinical success in AAT.

Publication Types:
    Comparative Study

PMID: 8677379 [PubMed - indexed for MEDLINE]

45: An Otorrinolaringol Ibero Am. 1995;22(6):619-29.

[The effect of gingko biloba on cochleovestibulary pathology of vascular origin]

[Article in Spanish]

Cano Cuenca B, Marco Algarra J, Pérez del Valle B, Pellicer Pascual FJ.

The AA. of the present paper recall the clinical and functional results of this therapy in a group of 70 patients complaining of vertigo. The Gingko biloba extract (4 ml/12 h per mouth) has been continued during 6 months. Neck and vertebrobasilar insufficiency were predominant causes. Six months later statistically significant changes regarding the decrease of intensity of tinnitus

and vertigo crises were confirmed. Besides favorable alterations in the
peripherical symptomatology as a relative hearing improvement turned up.

Publication Types:
    English Abstract

PMID: 8579235 [PubMed - indexed for MEDLINE]

46: Adv Otorhinolaryngol. 1995;49:105-8.

Soft-laser/Ginkgo therapy in chronic tinnitus. A placebo-controlled study.

von Wedel H, Calero L, Walger M, Hoenen S, Rutwalt D.

ENT Department, University of Cologne, Germany.

Publication Types:
    Comparative Study

PMID: 7653340 [PubMed - indexed for MEDLINE]

47: Adv Otorhinolaryngol. 1995;49:101-4.

Results of combined low-power laser therapy and extracts of Ginkgo biloba in
cases of sensorineural hearing loss and tinnitus.

Plath P, Olivier J.

Department for ENT, Head and Neck Surgery of the Ruhr University Bochum, Prosper
Hospital Recklinghausen, Germany.

PMID: 7653339 [PubMed - indexed for MEDLINE]

48: Audiology. 1994 Mar-Apr;33(2):85-92.

Ginkgo biloba extract for the treatment of tinnitus.

Holgers KM, Axelsson A, Pringle I.

Department of Audiology, Sahlgren's Hospital, Göteborg, Sweden.

Previous studies have shown contradictory results of Ginkgo biloba extract (GBE)
treatment of tinnitus. The present study was divided into two parts: first an
open part, without placebo control (n = 80), followed by a double-blind
placebo-controlled study (n = 20). The patients included in the open study were
patients who had been referred to the Department of Audiology, Sahlgren's
Hospital, Göteborg, Sweden, due to persistent severe tinnitus. Patients reporting
a positive effect on tinnitus in the open study were included in the double-blind

placebo-controlled study (20 out of 21 patients participated). 7 patients
preferred GBE to placebo, 7 placebo to GBE and 6 patients had no preference.
Statistical group analysis gives no support to the hypothesis that GBE has any
effect on tinnitus, although it is possible that GBE has an effect on some
patients due to several reasons, e.g. the diverse etiology of tinnitus. Since
there is no objective method to measure the symptom, the search for an effective
drug can only be made on an individual basis.

Publication Types:
    Clinical Trial
    Randomized Controlled Trial

PMID: 8179518 [PubMed - indexed for MEDLINE]

49: Laryngorhinootologie. 1994 Mar;73(3):146-8.

[Hearing disorders after Bungee jumping?]

[Article in German]

Mees K.

Klinik und Poliklinik für Hals-Nasen-Ohren-Kranke, Klinikum Innenstadt,
Ludwig-Maximilians-Universität München.

Acceleration forces in bungee jumping acting on the head are different in nature
and extent from those in merry-go-round, looping and scooter rides. They act
mainly in the vertical plane, horizontal accelerations may develop only during
uncontrollable vibrations in different directions after slowing down. According
to our present knowledge the risks for injuries of the cervical spine and
functional disorders of the inner ear in bungee jumping are lower than in
merry-go-round, looping and scooter rides. They seem to be enhanced, however, in
individuals suffering from diseases of the cervical spine and disorders of the
heart and the blood circulation.

Publication Types:
    Case Reports
    English Abstract

PMID: 8172635 [PubMed - indexed for MEDLINE]

50: Laryngorhinootologie. 1994 Mar;73(3):149-52.

[Ginkgo extract EGb 761 (tenobin)/HAES versus naftidrofuryl (Dusodril)/HAES. A
randomized study of therapy of sudden deafness]

[Article in German]

Hoffmann F, Beck C, Schutz A, Offermann P.

Universitäts-HNO-Klinik Freiburg im Breisgau.

80 patients with idiopathic sudden hearing loss existing no longer than 10 days
were included in a randomised reference-controlled study. The therapeutic value
of Ginkgo EGb 761 (Tebonin) + HAES was compared to that of Naftidrofuryl
(Dusodril)+HAES. The main mechanisms of action of EGb 761 are a vasoregulating
activity (increased blood flow), the platelet activating factor antagonism and a
prevention of membrane damage caused by free radicals. Naftidrofuryl has
antiserotonergic and therefore vasodilatory properties. The statistical analysis
of the audiometric data was performed in measuring the relative hearing gain as
described by Eibach 1979. After one week of observation, 40% of the patients in
each group showed a complete remission of hearing loss. This was also observed by
other authors who had compared other drugs. Therefore, in these cases, it is most
likely that spontaneous recovery is the most important factor. After two and
three weeks of observation, measuring the relative hearing gain, there was a
significant borderline benefit of EGb 761 (p = 0.06) without any side effects.
Some patients of the reference group developed side effects such as orthostatic
dysregulation or headache or sleep disturbances. Minimising side effects should
be one of the most important goals in therapy of sudden hearing loss until the
efficiency of infusion therapy is proved.

Publication Types:
    Clinical Trial
    Comparative Study
    English Abstract
    Randomized Controlled Trial

PMID: 7513516 [PubMed - indexed for MEDLINE]

51: Laryngorhinootologie. 1993 Jan;72(1):28-31.

[Soft laser therapy in combination with tebonin i.v. in tinnitus]

[Article in German]

Partheniadis-Stumpf M, Maurer J, Mann W.

Univ. HNO-Klinik Mainz.

28 patients were treated with soft-laser therapy. Two-thirds of them had suffered
from tinnitus for more than six months and had undergone different therapies
before. Each patient was treated twelve times, treatment lasting ten minutes.
Before therapy six ml of Tebonin were given i.v. Four minutes later, the laser
was positioned at a distance of one centimetre from the patients' mastoid. The
laser beam was directed two fingers above the mastoid tip aiming at the lateral
wall of the contralateral orbit. Before and three weeks after treatment each
patient underwent pure tone audiometry and determination of the tinnitus
intensity. Patients were asked to score symptoms before and three weeks after
therapy. Hearing levels before and after soft-laser therapy did not show any
statistic difference. Three weeks after the last treatment, twenty patients
denied any change in tinnitus. Two patients felt an improvement of tinnitus and
one patient had recovered completely. Five patients remained undecided about the
outcome of therapy. To sum up, according to our results, the trial so far failed
to show clear benefits of soft-laser therapy for patients suffering from chronic
tinnitus.

Publication Types:
    English Abstract

PMID: 8439353 [PubMed - indexed for MEDLINE]

52: Clin Otolaryngol Allied Sci. 1988 Dec;13(6):501-2.

Trial of an extract of Ginkgo biloba (EGB) for tinnitus and hearing loss.

Coles R.

Publication Types:
    Letter

PMID: 3228994 [PubMed - indexed for MEDLINE]

53: Presse Med. 1986 Sep 25;15(31):1562-4.

[Multicenter randomized double-blind drug vs. placebo study of the treatment of
tinnitus with Ginkgo biloba extract]

[Article in French]

Meyer B.

This important multicenter study of 103 tinnitus out-patients during a 13-month

treatment period was carried out by ten E.N.T. specialists, using the double
blind, drug versus placebo method. The results were conclusive as regards the
effectiveness of Ginkgo biloba extract and made it possible to determine the
prognostic value of different parameters. Of special importance among these
parameters were site and periodicity of the disease. However, the Ginkgo biloba
extract treatment improved the condition of all the tinnitus patients,
irrespective of the prognostic factor.

Publication Types:
    Clinical Trial
    Comparative Study
    English Abstract
    Randomized Controlled Trial

PMID: 2947100 [PubMed - indexed for MEDLINE]

54: Ann Otolaryngol Chir Cervicofac. 1986;103(3):185-8.

[A multicenter study of tinnitus. Epidemiology and therapy]

[Article in French]

Meyer B.

A comparative, randomized multicenter study of 259 patients with tinnitus had
three objectives. First, to conduct an epidemiology survey of cases of tinnitus
of less than one year duration. Second, to determine prognostic factors to
establish profiles of patients with different courses of the disorder. Third, to
quantify therapeutic efficacy of three medicines of the same therapeutic class
but with different modes of action: Ginkgo biloba extract, almitrine-raubasine
and nicergoline. Statistical analysis of findings showed prognostic significance
for 3 parameters: chronicity, periodicity and uni- or bilateral nature of
symptom, as well as the value of Ginkgo biloba in the treatment of tinnitus
unrelated to its initial description.

Publication Types:
    Clinical Trial
    Comparative Study
    English Abstract
    Randomized Controlled Trial

PMID: 3530094 [PubMed - indexed for MEDLINE]