KAVA

(*Piper methysticum*)

An Overview of the Research and Clinical Indications

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This herb research review is intended to be used by authorized health care practitioners, clinicians, pharmacists, physicians, and any other professionally trained persons who may provide medical advice to patients or consumers. The information presented has been obtained from research of reference books, clinical and scientific published papers, and other published works. The lay reader is advised to consult a licensed health care practitioner regarding the information contained herein.

BACKGROUND AND USES

Kava, also known as Kava Kava or Piper methysticum, is an indigenous plant in Polynesia and throughout the South Pacific, including Melanesia and Micronesia. It has been safely used for over a millennia (over 1,500 years) in these cultures as a beverage for both ceremonial and casual consumption. Its usage in Europe dates back to the 1700s. The popularity of Kava has recently significantly increased among the Aborigines of Australia. In modern Fijian culture, Kava is used as a welcome beverage for visitors, and used in some religious contexts as well. These beverages are prepared from either the fresh or dried roots of the plant.

Its contemporary uses include treating anxiety, generalized anxiety disorder, stress, insomnia and mood improvement.

In the past, the German expert panel, the Commission E, has approved Kava for nervous anxiety, stress, and restlessness.

ACTIVE CONSTITUENTS

A significant number of active constituents of Kava have been identified; these include kavalactones, pyrones, flavonoids and alkaloids. The kavalactones include kavain, dihydrokavain, methysticin and dihydromethysticin. Kavain is considered a principal active constituent of Kava.

MECHANISM OF ACTION

Kava is thought to provide anxiety relief without mediation via the benzodiazepine binding site on the GABA(A) receptor complex [1]. A study using mice demonstrated statistically significant dose-dependent improvement in anxiety behaviors [1]. Kava may promote anxiolysis without causing sedation via selective action on limbic structures in the brain, as shown in a study using cats [2].

RESEARCH SUMMARY

Anxiolytic and stress reduction properties

As determined via research studies, extracts of Kava have shown benefit in reducing anxiety and promoting calmness. A study using chicks experiencing social stress suggested that a particular constituent of Kava, dihydrokavain, may be enough to produce the anxiolytic properties of Kava extract [3]. The amount of anxiety reduction

and calmness observed was dose-dependent, with improved benefits observed as the dose concentration increased.

Studies of mice show similar benefits with regards to reducing anxiety. Dose-dependent, statistically significant behavioral changes of decreased anxiety were shown with the use of Kava extract [1]. With the use of the Kava extracts, the mice exhibited significant anxiolytic-like behavioral changes and sedation that were not mediated through the benzodiazepine binding site on the GABA(A) receptor complex [1]. Kavain, one of the main active components of Kava, may effectively modulate excitatory signals in the hippocampus of guinea pigs [4].

Neurologic effects

Kava extract exhibited neuroprotective activity, which was probably mediated by its constituents methysticin and dihydromethysticin [5]. Pyrones constituents have been noted for their inhibition of noradrenaline uptake [6]. Kava does not appear to interact with benzodiazepine/GABA receptors in rats [7, 8]. Kava seems to facilitate GABA transmission K [9, 10]. Neuro-physiologic studies with EEG have demonstrated similar activity of Kava to GABA agonists [9, 10]. Neither chronic administration nor high single doses of kavain, from the lipophilic fraction of Kava, alters serotonergic or dopaminergic tissue levels in rats [11]. Therefore, serotonergic or dopaminergic effects may reside in the water-soluble fraction of Kava [12, 13]. Interactions with glutamate [14], dopamine [15], noradrenaline [6], serotonin [15, 16, 17], and their respective receptors may mediate the anxiolytic effect of Kava.

CLINICAL INDICATIONS, PRACTITIONER DOSING, CONTRAINDICATIONS AND TOXICITY

Clinical Indications

- Anxiety
- Social anxiety
- Generalized anxiety disorder
- Stress
- Mood improvement
- Mood stabilization
- Insomnia

Dosage range

General preventive therapy for stress reactions: the dosage range recommended in review literature reported as efficacious and well-tolerated in multiple clinical trials is 300 mg per day of Kava extract (standardized to WS 1490) in three divided doses [18, 19, 20, 21]. Many practitioners start at lower doses and titrate up as needed. Doses in the range of 800 mg daily of Kava extract have been tolerated for short periods but have not been extensively studied.

Anxiety: In research review literature, daily doses for the treatment of anxiety range from 50-400 mg daily. 50 mg of WS 1490 three times daily has been used to treat patients with non-psychotic anxiety without adverse effects for up to four weeks [22]. In the acute treatment of outpatients with general anxiety disorder, 400 mg of Kava Kava LI150 daily has been shown to be well tolerated and as effective as both buspirone and opripramol [23]. Other studies show similar anxiolytic benefits for study participants with dosage ranges of 100 mg three times daily [19], and dosage of 100 mg the night before surgery and another dosage of 100 mg 1 hour before surgery [24].

Insomnia: Kava extract at a dosage of 120 mg, taken daily for six weeks, showed improvement in insomnia [25, 26]. At daily doses of 200 mg, Kava extract has been studied in sleep disturbances associated with non-psychotic anxiety disorders [27].

Contraindications

Patients with known allergy/hypersensitivity to Kava (*Piper methysticum)*, Kavapyrones, or any of its constituents, or to members of the Piperaceae family, should avoid using this botanical agent.

Patients with known or suspected liver disease, hepatotoxicity or hepatitis should not use Kava. Patients taking hepatotoxic agents (e.g., acetaminophen, HMG CoA reductase inhibitors, isoniazid, methotraxate, etc.) should not use Kava. Drowsiness or sedation has been reported in clinical trials, although no effect on driving motor vehicles has been found in two double-blind, placebo controlled trials. Avoid driving or using heavy machinery while taking Kava.

Long-term use (>1-2 months) or doses greater than recommended (>300 mg per day) should be avoided based on reports of significant hepatotoxicity, skin changes and neurotoxicity and possible pulmonary hypertension.

Prior to some surgery, discontinuation should be considered due to MAOI-like activity; Kava may theoretically prolong the effects of anesthesia. There are both anecdotal and research trial reports of feelings of sedation. However, studies have found that when

taken at recommended doses, Kava does not impair neurological-psychological functioning.

Skin reactions have been reported, including allergic skin reactions, systemic/contact-type dermatitis, sebotropic reactions, urticaria and generalized erythema with papules following 2-3 weeks of use or use at up to 100 times the recommended dosage.

Avoid concomitant use with other CNS depressants, such as alcohol or benzodiazepines.

Based on laboratory investigation, use cautiously in:

- Patients with elevations in liver function tests, including serum transaminases.

Toxicity

Used with the standard dosing range, Kava appears to be safe, if there are no concomitant conditions that warrant caution. See notes on Contraindications above.

CONCLUSIONS

The overall botanical medicine benefit profile for Kava makes it a viable botanical agent for promoting relief from stress, stress-induced anxiety, generalized anxiety, insomnia and for mood improvement.

It appears to be a safe herb for medicinal use when used within the established dosage guidelines and with regard for pertinent contraindications.

ABOUT THE AUTHOR

Dr. Beverly Yates, Naturopathic Physician, graduated from the National College of Naturopathic Medicine in 1994. She is also a graduate of the Massachusetts Institute of Technology with a B. S. degree in Electrical Engineering. Dr. Yates served as the lead supervising doctor for the first ever fully accredited Naturopathic and Integrative medical residency in the state of California. Dr. Yates was a Featured Speaker for the California Naturopathic Doctors Association Integrative Medicine conference on Cardiology, presenting continuing medical education on Women and Cardiovascular Disorders.

Dr. Yates serves as a National Media Representative for the American Association of Naturopathic Physicians, appearing as an expert in natural medicine on TV shows in select metropolitan areas. She is a member of the Medical Advisory Board for Schwabe North America, and is on the Scientific Advisory Board for Gaia Herbs, Inc. and BSP

Pharma, Inc. Recently, in response to Dr. Yates' contributions to community health, she provided testimony for the Tri-Caucus of the California legislature concerning the growing impact of obesity and diabetes in communities of color around the state and the country.

Sought after for her ability to provide concise, clear explanations about medical processes and natural medicine, Dr. Yates has appeared on numerous TV broadcast networks including ABC, CBS, CNN, CW, Fox, NBC, and PBS; her radio interviews include NPR, CNN Radio, and Sirius International Satellite; and her print interviews include Essence Magazine, Good Housekeeping Magazine and Women's World newspaper. She presents continuing medical education (CME) to physicians and other health professionals all over the country.

Dr. Yates is a nationally recognized author [book: Heart Health for Black Women: A Natural Approach to Healing and Preventing Heart Disease, Marlowe & Co., 2000] and contributing author [medical textbook: Maternal Newborn and Child Nursing: Family Centered Care, Prentice Hall, 2003].

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