Efficacy of kava extract for treating anxiety: systematic review and meta-analysis

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Authors' objectives
To assess the efficacy of kava extract for treating anxiety.

Searching
Computerised searches were conducted of the following databases from their respective inceptions to June 1998: MEDLINE; EMBASE; BIOSIS Previews; AMED (British Library); CISCOM; and the Cochrane Library. Search terms were 'kava', 'kawa', 'kavain', 'Piper methysticum', and 'Rauschpfeffer'. A manual search was performed using the bibliographies of studies and reviews and by scanning the authors' own files. Experts on kava and leading manufacturers were contacted and asked to contribute published and unpublished material. No language restrictions were applied.

Study selection
Study designs of evaluations included in the review
Double-blind, placebo-controlled randomised clinical trials (RCTs) were included.

Specific interventions included in the review
Oral kava monopreparations with daily kavapyrone content ranging from 60 to 240 mg was compared with placebo. Doses of kava extract were generally given between two and four times daily. Duration of studies ranged from night before and morning of operation to 24 weeks. Settings included university outpatient clinic, gynaecological practice, general practice, university, university hospital, and general hospital. One study in which kava extract was combined with benzodiazepines and studies using kavain were excluded.

Participants included in the review
The following groups of patients with anxiety were included: outpatients with anxiety of nonpsychiatric origin including those with anxiety according to American Psychiatric Association DSM-III-R criteria; females; anxiety diagnosed on State Trait Anxiety Inventory; preoperative patients; and female patients between taking tissue sample and diagnosis.

Outcomes assessed in the review
Anxiety was measured using the total score on the Hamilton Rating for Anxiety (HAM-A), Zung anxiety status inventory, State Trait Anxiety Inventory, and a 10-item anxiety scale. Adverse reactions were also assessed.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
Validity was assessed and scored using the Jadad criteria of randomisation, blinding and withdrawals (see Other Publications of Related Interest no.1). Two reviewers independently scored validity for studies from which identifiers (names of authors, institutions, journals, and addresses) had been removed. Disagreements were resolved by discussion and consensus reached in all such cases.

Data extraction
Two reviewers independently extracted the following data from studies from which identifiers had been removed: first author; setting; study design; patient characteristics; number of patients per treatment group; medication dose; mean baseline HAM-A Total Score or assessment instrument; and adverse effects. The mean change compared with baseline was calculated. Disagreements were resolved by discussion and consensus reached in all such cases.
Methods of synthesis
How were the studies combined?
Three trials that assessed a common outcome measure (HAM-A) were combined in a meta-analysis in which weighted mean differences and 95% confidence intervals were calculated using a random-effects model. The 4 other trials were combined in a narrative review.

How were differences between studies investigated?
Differences and 95% CI for studies in the meta-analysis were graphically displayed and results for all studies were compared in the text.

Results of the review
A total of 7 double-blind RCTs were included (377 patients).

6 trials scored at least 3/5 points on Jadad criteria. All trials reported a significant benefit for kava compared to placebo with none of the lower limits of 95% CI over lapping zero. Meta-analysis (three RCTs, 198 patients treated with equivalent of 210mg kavapyrones per day): Jadad scores 3, 5 and 5. Significant difference in the reduction of HAM-A total score from baseline in favour of kava extract with weighted mean difference = 9.69 (95% CI:3.54, 15.83). No evidence of heterogeneity was seen in the plot of differences and 95% CI. Narrative review of trials unsuitable for meta-analysis (four RCTs, 179 patients): all demonstrated significant reduction in anxiety in favour of kavaextract. 3 RCTs reported significant intergroup differences favouring kava and one RCT reported beneficial effects compared to baseline findings. Adverse reactions. Adverse reactions reported in 5 RCTs included stomach complaints, restlessness, drowsiness, tremor, headache, and tiredness. 2 RCTs (31% of review patients) reported the absence of adverse reactions while taking kava.

Authors' conclusions
The evidence suggests that kava extract is relatively safe and more efficacious than placebo in the symptomatic treatment of anxiety. Important caveats exist, which prevent firm conclusions. The findings warrant further and more rigorous investigation of the risk-benefit relation of kava.

CRD commentary
The aims were stated and inclusion criteria defined in terms of study design, patients, intervention and outcome. The search included several relevant databases and attempts were made to locate unpublished data. No language restrictions were applied. Primary studies were limited to double-blind RCTs and validity was assessed and scored using defined criteria. Methods used to assess validity and extract data were described. Relevant details of the primary studies were presented in tabular format. Heterogeneity of studies was assessed graphically and attention was drawn to the small sample size and lack of power calculation in the discussion. Pooling of trials was appropriate, with meta-analysis performed only for trials using similar outcome measures and homogeneous doses of kava and the remaining trials combined in a narrative review. Adverse reactions were listed, though the difference in rates of adverse reactions between intervention groups was not reported. The discussion included consideration of the potential for publication bias, preponderance of trials from one country, and methodological flaws in the primary studies including small sample size and lack of power calculation, and omission of randomisation and blinding process details. No mention is made however of the short duration of most of the trials, only one of which lasted more than 8 weeks. Evidence supports the authors' conclusion.

Implications of the review for practice and research
Practice: The authors report that kava extract is a herbal treatment option for anxiety that is worthy of consideration.

Research: The authors report that the review findings warrant further and more rigorous investigation of the risk-benefit relation of kava.
Bibliographic details

PubMedID
10653213

Other publications of related interest

This additional published commentary may also be of interest. Gundling K. Promising results for kava in the treatment of anxiety. FACT 2000;5:126-7.

Indexing Status
Subject indexing assigned by NLM

MeSH
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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.