The effectiveness of Hibiscus sabdariffa in the treatment of hypertension: a systematic review
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CRD summary
This well-conducted review concluded that there was no reliable evidence to recommend Hibiscus sabdariffa as a treatment for primary hypertension in adults. This conclusion is likely to be reliable.

Authors’ objectives
To determine the effectiveness and safety of hibiscus in the treatment of hypertension.

Searching
MEDLINE, EMBASE, CINAHL, Cochrane Central Register of Controlled Trials (CENTRAL), the Cochrane Hypertension Group's Trials Register, the Cochrane Database of Systematic Reviews, and ClinicalTrials.gov were searched for articles from inception to January 2009. An internet search was carried out using Google and the search terms were reported. Reference lists of retrieved studies were screened and authors were contacted for additional information, when required. No language restrictions were applied.

Study selection
Randomised controlled trials (RCTs) that compared hibiscus against placebo, another herbal or pharmacological intervention, or no intervention, in the treatment of primary hypertension in adults (18 to 70 years) who had a diagnosis of pre-hypertension (130 to 139 over 85 to 89) or primary hypertension (stage I or II of the Joint National Committee, JNC 7, classification), were eligible for inclusion. The primary outcome was the mean reduction in systolic or diastolic blood pressure or both.

Hibiscus was administered as hibiscus extract or sour tea; the quantity and method of preparation of hibiscus varied between trials. Comparator interventions were black tea, captopril, and lisinopril. Participants in the included trials had pre-hypertension, stage I hypertension, or stage II hypertension. Study duration ranged from two to four weeks.

Two reviewers independently assessed trials for inclusion and disagreements were resolved through discussion.

Assessment of study quality
Two reviewers independently assessed trial quality, using the Jadad scale, which has a maximum quality score of five points. Trials were also assessed for concealment of treatment allocation and adequacy of addressing incomplete data.

Data extraction
Two reviewers independently extracted the data as means and standard deviations.

Methods of synthesis
A narrative synthesis was provided.

Results of the review
Four trials (n=390 participants) were included and their quality scores ranged from zero to greater than three on the Jadad scale. Three trials were appropriately randomised; concealment of the treatment allocation was unclear in one trial and not done in the other trials; one trial was double blinded, but the others were not blinded or it was not reported; and only one study addressed incomplete data.

Two trials compared hibiscus with black tea and suggested a modest reduction in both diastolic and systolic blood pressure associated with hibiscus. Two trials compared hibiscus with angiotensin-converting enzyme (ACE) inhibitors and showed similar decreases in blood pressure with hibiscus, but greater decreases with ACE inhibitors. None of the trials provided data on adverse events.
Authors' conclusions
There was no reliable evidence to recommend *Hibiscus sabdariffa* as a treatment for primary hypertension in adults.

CRD commentary
This review addressed a focused question and the inclusion criteria were clearly defined. An appropriate literature search was conducted and it included attempts to minimise language and publication bias. Appropriate steps were taken to minimise bias at all stages of the review process. Trial quality was assessed, using appropriate criteria, and the results were clearly presented. A narrative synthesis was appropriate, but it might have been helpful to have presented the effect sizes, such as mean differences in blood pressure between treatment groups, rather than presenting the data separately for each group.

This was generally a well-conducted review. The authors’ conclusion takes into account the small number and poor quality of the included trials and is likely to be reliable.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that there was a need for robust high-quality trials evaluating a standardised dose of the active ingredient of *Hibiscus sabdariffa* in pre-hypertension and stage 1 hypertension. These should include a long follow-up to detect any adverse events.

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