Effectiveness and safety of ginger in the treatment of pregnancy-induced nausea and vomiting

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CRD summary
The authors concluded that ginger may be a safe and effective option for the treatment of nausea and vomiting in pregnancy, but further research is required to confirm these findings. The authors' cautious conclusions seem reasonable, although the evidence base was small, and the stated need for further research appears justified.

Authors' objectives
To determine the safety and efficacy of ginger therapy for the treatment of nausea and vomiting in pregnancy.

Searching
MEDLINE, EMBASE and the Cochrane Library were searched from inception to June 2004, unrestricted by language; the search terms were reported. The references of relevant papers were also checked. Several manufacturers of ginger preparations were also contacted for published or unpublished material, and pregnancy information websites were checked.

Study selection
Study designs of evaluations included in the review
For the evaluation of efficacy, only double-blind, randomised controlled trials (RCTs) were eligible for inclusion. For the evaluation of safety, RCTs, uncontrolled trials, case reports and observational studies were eligible for inclusion.

Specific interventions included in the review
Studies evaluating the oral administration of a monopreparation of ginger were eligible for inclusion. In the efficacy studies, dosages ranged from 500 to 1,500 mg per day and the duration of treatment ranged from 3 days to 3 weeks. The comparators included placebo and vitamin B6.

Participants included in the review
Studies of women suffering from pregnancy-related nausea and vomiting, such as morning sickness and hyperemesis gravidarum, were eligible for inclusion. Studies with healthy volunteers, and individuals suffering from motion sickness, post-operative nausea and vomiting, inflammation, and drug-induced nausea and vomiting was excluded. The period of gestation in the efficacy studies ranged from less than 12 weeks to less than 20 weeks.

Outcomes assessed in the review
Several different outcomes were assessed: the severity of and relief of nausea and vomiting, the duration and number of occurrences of nausea and vomiting, change in health status, and the occurrence of side-effects. The included efficacy studies assessed nausea and vomiting using 4- or 10-point scales, visual analogue scales, the Likert scale and the Rhodes Index.

How were decisions on the relevance of primary studies made?
All reviewers independently selected papers for inclusion in the review; any disagreements were resolved through discussion.

Assessment of study quality
The quality of the RCTs included in the efficacy review were assessed using the Jadad scale, which evaluates the reporting of randomisation, blinding and withdrawals. All reviewers independently assessed the quality of the primary studies; any disagreements were resolved by discussion.
Data extraction
All reviewers independently extracted the data from the primary studies; any disagreements were resolved by discussion. Where additional data were required, attempts were made to contact the authors of the primary studies. The results data were extracted as text.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative.

How were differences between studies investigated?
Differences between the studies were highlighted in the body of the text.

Results of the review
Seven studies were included in the review: six RCTs (n=675) and one cohort study (n=187). Six RCTs assessed efficacy and five RCTs and one cohort study assessed safety.

Five of the six RCTs received a maximum score of 5 on the Jadad scale, while one RCT received a score of 3.

Four trials found a beneficial effect of ginger compared with placebo. One trial found that ginger was more effective than placebo in reducing or eliminating hyperemesis (severe nausea and vomiting) in pregnancy, whilst three trials reported that ginger was more effective than placebo in reducing the severity of nausea, vomiting or retching. One trial that reported a beneficial effect of ginger on nausea and retching reported no beneficial effect of ginger on vomiting symptoms compared with placebo.

Two trials compared ginger and vitamin B6 for the treatment of nausea and vomiting; no between-group differences were found.

The authors reported that four RCTs and a cohort study found no significant adverse events on pregnancy outcomes.

Authors' conclusions
Ginger may be a safe and effective option for the treatment of nausea and vomiting in pregnancy, but further research is required to confirm these findings.

CRD commentary
The review question was clear in terms of the intervention, population and study designs. The literature search was not limited by language and some attempt was made to locate unpublished material, thereby reducing the potential for publication and language biases. The methodological procedures undertaken to select studies, assess quality and extract the data were likely to have minimised reviewer error or bias. The results data were not reported for individual studies, which meant that it was not possible to confirm the reported results. The authors highlighted a number of limitations in their discussion, including the short duration of treatment and generalisability to pregnant women worldwide. The authors' cautious conclusions seem reasonable, but the evidence base was small. The stated need for further research appears justified.

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

Research: The authors stated that further observational studies and larger RCTs are required to confirm findings about the safety of ginger in pregnancy.
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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.