

FPIN's Clinical Inquiries

Ginger for the Treatment of Nausea and Vomiting in Pregnancy

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Clinical Inquiries provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (<http://www.cebm.net/?o=1025>).

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Clinical Question

Is ginger effective and safe for the treatment of nausea and vomiting in pregnancy?

Evidence-Based Answer

Ginger can be safely used to reduce nausea and vomiting in pregnancy. (Strength of Recommendation [SOR]: B, based on small, heterogeneous trials comparing ginger with placebo and unproven comparators). Ginger's effectiveness appears to be similar to dimenhydrinate and pyridoxine (vitamin B₆), and it is likely as safe as placebo. Ginger causes less drowsiness than dimenhydrinate. (SOR: B, based on a single randomized controlled trial [RCT]).

Evidence Summary

A 2010 Cochrane review assessed the effectiveness and safety of interventions for nausea and vomiting in pregnancy before 20 weeks' gestation. The interventions included acupressure, acustimulation, acupuncture, ginger, vitamin B₆, and antiemetic medications.¹ The review evaluated nine RCTs involving ginger. Ginger was compared with placebo in four studies (n = 283), with pyridoxine (vitamin B₆) in four studies (n = 624), and with dimenhydrinate in one study (n = 170). The Cochrane review found that pyridoxine and one antihistamine (hydroxyzine [Vistaril]) reduced nausea more than placebo; however, the authors cautioned that the evidence was not high quality.

Four trials of ginger versus placebo demonstrated a greater reduction of nausea with ginger use,²⁻⁵ and three studies showed reduced vomiting with ginger use.³⁻⁵ However, only two of the four studies reported

statistically significant differences.^{3,4} Cochrane reviewers could not perform a meta-analysis because of the heterogeneous outcomes used in the studies, although they were able to perform a meta-analysis of four RCTs that compared ginger (975 to 1,500 mg per day) with pyridoxine (30 to 75 mg per day), divided three or four times per day for up to three weeks.¹ Two trials (n = 251) found no difference in nausea and vomiting by day 3 (standard mean difference = 0.0; 95% confidence interval, -0.25 to 0.25). The other two trials (n = 361), surveying the percentage of women reporting no relief, also found no statistically significant difference between ginger and pyridoxine (relative risk = 0.84; 95% confidence interval, 0.47 to 1.5). The study comparing ginger with dimenhydrinate found that they were similar in effectiveness.⁶ *Table 1* summarizes the results of the studies.¹⁻⁶

Some of the trials reported on the safety of ginger. One RCT (n = 120) reported gestational age at delivery, birth weight, stillbirth frequency, and congenital anomalies in newborns delivered to patients participating in a ginger trial and compared the data with hospital norms.² There were no statistically significant differences, although the study was underpowered to analyze rare events. In an RCT of ginger versus placebo (n = 70), there was one spontaneous abortion in the ginger group and three in the placebo group (P = .62).³ No congenital anomalies were detected. In the single trial of ginger versus dimenhydrinate, ginger was much less likely to cause drowsiness (6 versus 78 percent; P < .01).⁶ The Cochrane review identified no statistically significant differences in safety

Table 1. Summary of Research on Ginger for Treating Nausea and Vomiting in Early Pregnancy

Study	No. of participants	Ginger dosage (form)	Comparator	Effect on nausea scores	Effect on vomiting frequency
Four-day, double-blind RCT ²	120	125 mg four times per day (liquid extract)*	Placebo (pure soy oil)	Less nausea with ginger three days out of four†	No change
Four-day, double-blind RCT ³	70	250 mg four times per day (powder capsules)	Placebo	63 percent decrease with ginger versus 42 percent decrease with placebo ($P = .014$)	47 percent decrease with ginger versus 25 percent decrease with placebo ($P < .001$)
Four-day, single-blind RCT ⁴	67	250 mg four times per day (powder capsules)	Placebo	85 percent decrease with ginger versus 56 percent decrease with placebo‡ ($P < .01$)	50 percent decrease with ginger versus 9 percent decrease with placebo ($P < .05$)
Fourteen-day, double-blind RCT ⁵	26	250 mg four times per day (syrup in water)§	Placebo (with lemon oil)	77 percent decrease with ginger versus 20 percent decrease with placebo	By day 6, vomiting resolved in 67 percent of the ginger group versus 20 percent of the placebo group
Seven-day, double-blind RCT ⁶	170	500 mg twice per day (powder capsules)	Dimenhydrinate (50 mg twice per day)	No change	10 to 20 percent less in the dimenhydrinate group on days 1 to 2 ($P < .05$), but no difference on days 3 through 7¶
Meta-analysis of RCTs up to 21 days ¹	251	975 to 1,500 mg per day (various)	Pyridoxine (30 to 75 mg per day)	No difference in combined nausea and vomiting scores at day 3 (standard mean difference = 0.0; 95% confidence interval, -0.25 to 0.25)	

RCT = randomized controlled trial.

*—Extract flavor may have unmasked trial. Extract is approximately 12 times more concentrated than dried powder ginger.

†—Means and standard deviations for daily nausea scores given in graphic form.

‡—“Significant” decrease was a change in nausea rank (e.g., severe, moderate, mild, none).

§—Syrup flavor may have unmasked trial.

||—No statistical analysis was performed because of small sample size.

¶—Baseline vomiting frequency in the two groups was not stated.

Information from references 1 through 6.

outcomes in the four studies that compared ginger with pyridoxine.¹

Recommendations from Others

The American College of Obstetricians and Gynecologists (ACOG) states that “treatment of nausea and vomiting of pregnancy with ginger has shown beneficial effects and can be considered as a nonpharmacologic option.”⁷ However, ACOG acknowledges that the recommendation is based on limited or inconsistent scientific evidence. The U.K. National Health Service, through the National Institute for Health and Clinical Excellence, has included ginger in its list of acceptable therapies for the treatment of nausea and vomiting during early pregnancy.⁸

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