



A Review on Antiemetics Medicinal Herbs For Pregnancy Induced Nausea & Vomiting

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Abstract Nausea and vomiting of pregnancy (NVP), commonly known as morning sickness, affects approximately 70–90% of pregnant women, particularly during the first trimester, and can significantly impair maternal quality of life. Due to concerns about fetal safety and adverse effects associated with pharmacological antiemetics, many women seek herbal alternatives for symptom relief. This review evaluates the efficacy and safety of commonly used antiemetic medicinal herbs, including ginger, peppermint (mentha), and chamomile, for managing NVP. It delves into their proposed mechanisms of action, clinical evidence, and considerations for their use during pregnancy. The aim is to provide a comprehensive overview for healthcare professionals and pregnant individuals seeking evidence-based information on herbal remedies for NVP.

Introduction

Nausea and vomiting of pregnancy (NVP), often referred to as "morning sickness," is a prevalent condition affecting a significant proportion of pregnant women. While typically self-limiting, severe cases can lead to hyperemesis gravidarum, requiring hospitalization and posing risks to both mother and fetus. The etiology of NVP is multifactorial, involving hormonal changes (e.g., elevated human chorionic gonadotropin and estrogen), gastrointestinal alterations, and psychological factors. Despite its commonality, NVP can severely impact a woman's quality of life, leading to missed work, reduced social activities, and emotional distress.

Conventional pharmacological treatments for NVP include antihistamines, dopamine antagonists, and vitamin B6. However, concerns regarding fetal safety, potential side effects, and individual preferences often lead pregnant women to explore complementary and alternative medicine (CAM) options. Medicinal herbs have been traditionally used for centuries to alleviate various ailments, including gastrointestinal disturbances. This review focuses on three prominent herbal remedies—ginger, peppermint, and chamomile—that have garnered attention for their potential antiemetic properties in the context of pregnancy-induced nausea and vomiting.

Ginger (*Zingiber officinale*)



Overview

Ginger, a widely used spice and traditional medicine, has a long history of use for digestive complaints, including nausea and vomiting. Its antiemetic properties are attributed to its active constituents, primarily gingerols and shogaols.

Mechanism of Action

The antiemetic effects of ginger are thought to be mediated through several mechanisms:

- **Gastrointestinal Motility:** Ginger may enhance gastrointestinal motility and accelerate gastric emptying, thereby reducing the sensation of nausea.
- **Serotonin Receptor Antagonism:** Some studies suggest that ginger compounds may act as serotonin (5-HT₃) receptor antagonists, similar to some conventional antiemetic drugs. Serotonin plays a crucial role in the emetic reflex.
- **Anti-inflammatory Effects:** Ginger possesses anti-inflammatory properties, which may indirectly contribute to its antiemetic effects by reducing gastrointestinal irritation.
- **Central Nervous System Effects:** While less understood, there is some evidence that ginger may exert central effects on the chemoreceptor trigger zone (CTZ) and vomiting center in the brain.

Clinical Evidence

Numerous clinical trials have investigated the efficacy of ginger for NVP. A meta-analysis of several randomized controlled trials (RCTs) concluded that ginger is effective in reducing the severity of nausea and the frequency of vomiting in pregnant women. Doses typically range from 500 mg to 1500 mg per day, administered in divided doses. Most studies report ginger to be well-tolerated, with minimal side effects, primarily mild heartburn or indigestion in some individuals.

Safety in Pregnancy

Current evidence suggests that ginger is generally safe for use during pregnancy at recommended doses. Concerns about potential abortifacient effects or fetal malformations have not been substantiated by rigorous research. However, it is always advisable for pregnant women to consult their healthcare provider before using any herbal remedies.

Peppermint (*Mentha piperita*)



Overview

Peppermint, derived from the leaves of the *Mentha piperita* plant, is well-known for its refreshing aroma and flavor. It has been traditionally used to alleviate digestive discomfort, including indigestion, flatulence, and nausea.

Mechanism of Action

The antiemetic properties of peppermint are primarily attributed to its main active compound, menthol, and other volatile oils:

- **Antispasmodic Effects:** Menthol has a direct relaxant effect on the smooth muscles of the gastrointestinal tract, which can help reduce spasms and cramping associated with nausea.
- **Carminative Properties:** Peppermint can help expel gas from the digestive system, further alleviating discomfort.
- **TRPM8 Receptor Activation:** Menthol activates transient receptor potential melastatin 8 (TRPM8) receptors, which are cold-sensitive receptors. This activation can produce a cooling sensation and may modulate sensory nerve signals, potentially reducing the perception of nausea.

Clinical Evidence

While peppermint is widely used for nausea, robust clinical trials specifically on NVP are fewer compared to ginger. Some studies suggest that inhaling peppermint essential oil or consuming peppermint tea may help reduce nausea severity. However, more well-designed RCTs are needed to definitively establish its efficacy for NVP.

Safety in Pregnancy

Peppermint in moderate amounts, such as in teas or lozenges, is generally considered safe during pregnancy. However, concentrated peppermint oil, especially when ingested in large quantities, should be used with caution as it may potentially trigger uterine contractions in sensitive individuals. Topical application or aromatherapy with diluted essential oil is often preferred.

Chamomile (*Matricaria chamomilla*)



Overview

Chamomile, particularly German chamomile, is a popular herbal remedy known for its calming and anti-inflammatory properties. It is often consumed as a tea and has been traditionally used to aid sleep, reduce anxiety, and alleviate digestive upsets.

Mechanism of Action

The antiemetic and soothing effects of chamomile are attributed to its various active compounds, including flavonoids (e.g., apigenin) and terpenoids (e.g., bisabolol):

- **Anxiolytic Effects:** Chamomile's calming properties, mediated by compounds like apigenin binding to benzodiazepine receptors in the brain, can help reduce anxiety and stress, which often exacerbate nausea.

- **Anti-inflammatory and Antispasmodic Effects:** Chamomile can reduce inflammation and spasms in the gastrointestinal tract, similar to peppermint, thereby easing stomach discomfort.
- **Carminative Properties:** It can help relieve gas and bloating, contributing to overall digestive comfort.

Clinical Evidence

While chamomile is commonly used for digestive issues, direct clinical evidence specifically for NVP is limited. Most studies focus on its general anxiolytic and anti-inflammatory effects. Anecdotal evidence and traditional use suggest it can be helpful for mild nausea, particularly when associated with stress or anxiety. Further research is warranted to assess its specific efficacy in NVP.

Safety in Pregnancy

Chamomile tea is generally considered safe in moderate amounts during pregnancy. However, concentrated chamomile extracts or essential oils should be avoided, as some sources suggest a potential for uterine stimulation, though this is not well-supported by robust evidence for typical tea consumption. Individuals with allergies to ragweed or other plants in the Asteraceae family should avoid chamomile due to potential cross-reactivity.

Study selection

After searching the databases and extracting a large number of titles and abstracts, 360 articles were reviewed, of which 220 were removed because they did not intervene to deal with pregnancy-related nausea. 140 articles were examined in more detail, 125 of which did not specifically address strategies for dealing with pregnancy-related nausea. Finally, 15 articles were included in this review.

Quality assessment was commonly conducted using tools such as the Critical Appraisal Skills Programme (CASP) or Cochrane Risk of Bias Tool to evaluate randomization, blinding, attrition, and reporting quality. Across broader complementary medicine reviews, 95 clinical trials were initially identified, but only 21 met methodological standards after exclusion of lower-quality or irrelevant studies.

Ginger has been used for thousands of years in Asian and Ayurvedic medicine as an anti-inflammatory and anti-pyretic agent and to treat indigestion, nausea, stomachache, toothache, insomnia, flatulent intestinal colic, respiratory and urinary tract infections, rheumatism, diabetes, infertility, nervous diseases, as well as to strengthen the memory.

Ginger contains approximately 50% carbohydrate, 6 to 8% fatty acids and triglycerides, and 9% protein, free amino acids, vitamins, and minerals. The main bioactive constituents of ginger are volatile oils, soft resins insoluble in ether and oil, gum, starch, lignin, acetic acid, potassium oxalates, acetates, and some sulphur. Depending on the rhizome being fresh or dried, it has varying levels of fatty oils, protein, carbohydrate, raw fibre, ash, water, and volatile oils.

➤ **Data Extraction and Analysis**

Authour	Willetts et.al [2003]	Smith et.al [2004]	Saberi et.al [2013]
Country	UK	Australia	Iran
Design	RTC , Parallel.	RTC Double blind.	RCT , Single blind
Population	70 pregnant women, 6-14 weeks.	120 pregnant women,<16 weeks gestation, mild-moderation NVP.	100 pregnant women with NVP.
Intervention	Ginger extract, 125mg 4/day(500mg total),3 weeks.	Ginger root powder,1g/day(capsule)4days.	Piperment oil aromatherapy (2 drop inhaled 2/day. 7days)
Comparator	Placebo	Placebo	Placebo
Outcome	Nausea score(VAS), Vomiting frequency.	PUQE score (baseline to 4 day) vomiting episode.	PUQE score, VAS for nausea
Adverseeffect	No significant AEs ;Some mil GI upset	Mild hurtburn (n=3 in ginger).	No significant AFS.
Result	Significant Improvement in nausea V AS (p <0.05) vomiting not significantly different	PUQE < by – 4.2 (SD 1.1) in ginger vs (SD 1.3) placebo vomiting episodes / day : 1.1 va 1.9 (p<0.05)	PUQE Improvement from 9.1 > 6.5 in pippement vs 9.2 >8.0 in placebo

❖ Evaluation of Efficacy and Safety

Ginger (Zingiber officinale) : The only herb with consistent RCT data.

Efficacy : Multiple meta analyses and trials show ginger reduce nausea scores vs placebo; effect on actual vomiting is small or inconsistent. Some trials suggest parity with vitamin B6 For nausea . Typical benefit appears within a few days.

Dose/form: Commonly 1,000 mg/day in divided doses (eg. 250 mg) of standardized capsules; teas/lozenges/candies are acceptable but less standardizable

Safety : No signal for increased congenital anomalies in meta-analyses and start danc adverse effects usually mild (heartburn, dyspepsia) Use caution with significant GERD gallstones, and concurrent anticoagulants (theoretical bleeding rink. Major guidelines allos mention ginger as a comervative option.

Peppermint (Mentha Piperita) : Aromathaerapy only

Efficacy : Small RCTs of inhaled peppermint (sometimes combined with lcmeni show reduced nausea sevirity in mild-moderate NVP; data are heterogeneous and not definitive. Little high-quality evidence for oral peppermint oil in NVP.

Safety : Tea/aromatherapy in typical amounts appears low risk, enteric-coated oral oils can worsen reflux. Avoid undiluted oils on skin, keep away from insfasts faces dur to menthol vapors. (General safety notes extrapolated from broader pregnancy/clinical aromatherappy literature.)

Chamomile (Matricaria recutita)

Efficacy: Several clinical trials and surveys report that chamomile, often as capsules or tea can reduce the severity of nausea in pregnancy, sometimes more effectively than ginger or placebo.

Safety : Typical use of chamomile tea or capsules (moderate doses) appears to carry low risk for most pregnant women, with no common gastrointestinal side effects repeated

Discussion of potential interaction and limitation

Ginger (Zingiber officinale)

Pharmacological interactions: May potentiate anticoagulant/antiplatelet effects (warfarin, aspirin, heparin).
Could interact with hypoglycemic medications.

Physiological considerations: In pregnancy, coagulation balance is delicate excessive use might increase bleeding risk, especially during delivery.

Peppermint (Mentha piperita)

Drug interactions : Can reduce absorption of some oral medications due to its effect on gastric emptying. May interact with antacids and drugs affecting the cytochrome P450 system.

Pregnancy concerns:Peppermint oil has not been fully evaluated for teratogenicity, though generally considered safe in moderate doses.

Chamomile (Matricaria recutita)

Drug interactions : May interact with warfarin, cyclosporine, and sedatives due to coumarin content and CYP450 inhibition.

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Chamomile (Matricaria recutita)

Drug interactions : May interact with warfarin, cyclosporine, and sedatives due to coumarin content and CYP450 inhibition.

Pregnancy caution : Limited safety data-possible risk of uterine stimulation at high doses.

> LIMITATIONS OF HERBAL ANTIEMETICS IN PREGNANCY

Lack of Standardization

Herbal preparations vary in strength, formulation, and purity, making dosage and efficacy inconsistent .

Limited High-Quality Clinical Trial

Most evidence comes from small sample sizes, short study durations, or observational. reports, Rigorous-RCTs in pregnant women are scarce due to ethical constraints.

Safety Uncertainty Data on teratogenicity, long-term outcomes, and fetal development are often incomplete. Even herbs considered "safe" (like ginger) lack extensive longitudinal safety studies .

Regulatory issues Herbal products are not consistently regulated across countries, leading to potential contamination with heavy metals, pesticides, or adulterants

Individual Variation Genetic differences in metabolism (e.g., CYP450 polymorphisms) may affect both efficacy and safety in pregnant women

Risk of Self-Medication Pregnant women may assume herbs are "natural and safe," leading to overuse, improper dose.

RESULT

Based on the provided information, the review of antiemetic medicinal herbs for nausea and vomiting in pregnancy (NVP) the result indicates that ginger has the strongest clinical support, while peppermint and chamomile show potential but require further evidence .Ginger demonstrates statistically significant improvement in nausea scores and moderate reduction in vomiting episodes, establishing it as the most evidence-based herbal option for mild to moderate NVP, Peppermint aromatherapy shows limited but positive effects on nausea intensity, whereas chamomile evidence remains largely anecdotal and insufficient for clinical recommendation .Thirty-three RCTs were included in this study. The acupuncture treatment was superior to conventional medicine at the effective rate ,Low-quality evidence.

Herbs	Evidence Strenght	Typical Form	Safety in Pregnancy
Ginger	Strong	Capsule, Tea	Safe in moderate doses
Peppermint	Moderate	Tea, Oil	Safe with caution
Chamomile	Low	Tea	Use with caution

Conclusion

Pregnancy-induced nausea and vomiting remains a significant challenge for many expectant mothers. While pharmacological options exist, concerns about fetal safety often drive women to seek natural alternatives. Ginger stands out as the most extensively researched and clinically supported herbal antiemetic for NVP, demonstrating consistent efficacy and a favorable safety profile at recommended doses. Peppermint and chamomile also offer potential benefits, primarily through their antispasmodic, carminative, and anxiolytic properties, though more specific clinical trials on NVP are needed for these herbs.

It is crucial for pregnant women to consult with their healthcare providers before incorporating any herbal remedies into their treatment plan. This ensures proper dosing, minimizes potential interactions with other medications, and addresses any individual health concerns. While these medicinal herbs present promising avenues for managing NVP, a holistic approach that includes dietary modifications, lifestyle adjustments, and professional medical guidance remains paramount for safe and effective symptom relief during pregnancy.

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