Complementary, Holistic, and Integrative Medicine Chamomile

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Complementary, Holistic, and Integrative Medicine: Chamomile

Paula Gardiner, MD*

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NOTE: The agents discussed in this series are designated as dietary supplements rather than drugs. Although dietary supplements are regulated by the United States Food and Drug Administration (FDA), their manufacturers may make claims with little evidence and need not prove safety prior to marketing. The burden is on the FDA to monitor safety after the product is on the market. Readers are referred to the 1994 Dietary Supplement Health and Education Act (www.cfsan.fda.gov/~dms/dietsupp.html).

Definition and Description

Chamomile is a common flowering plant and a member of the daisy family. There are two primary types: German chamomile (*Matricaria recutita*) and Roman chamomile (*Anthemis nobilis*). Most research has focused on German chamomile. Chamomile is one of the most widely used herbs in the world, especially in children. (1)(2) It is used topically for rashes, eczema, and hemorrhoids or orally as a mild sedative or for indigestion, diarrhea, and colic. (3)(4)(5)(6)

Evidence of Efficacy in Pediatrics

Colic

Only two clinical trials have evaluated the efficacy of chamomile for the treatment of colic in children, and both combined chamomile with other herbs. In a prospective, randomized, double-blind, placebo-controlled study, 68 healthy term infants who had colic (2 to 8 weeks old) received either herbal tea (German chamomile, vervain, licorice, fennel, balm mint) or placebo tea (glucose, flavoring). (7) Each infant was offered treatment with every bout of colic, up to 150 mL/dose, no more than three times a day. After 7 days of treatment, parents reported that the tea eliminated the colic in 57% of the infants, whereas placebo was helpful in only 26% ($P<0.01$). No adverse effects were noted in either group.

A randomized, double-blind, placebo-controlled trial of 93 breastfed colicky infants compared a standardized extract of chamomile (*M recutita*), fennel (*Foeniculum vulgare*), and lemon balm (*Melissa officinalis*) with placebo twice a day for 1 week. (8) Crying time was reduced in 85.4% of the chamomile/fennel/lemon balm group and in 48.9% of the placebo group ($P<0.005$). No adverse effects were reported.

Dyspepsia

Chamomile often is combined with peppermint, anise, fennel, and other carminative herbs to treat stomachaches, gas, indigestion, and bloating. German chamomile has anti-inflammatory and spasmolytic effects on the stomach and duodenum. (9) No single product studies of chamomile as a treatment for upper gastrointestinal (GI) symptoms in children have been published.

Diarrhea

Although oral rehydration therapy remains the mainstay of treatment for diarrhea in children, a few clinical trials have evaluated the efficacy of chamomile. In a prospective, double-blind, randomized, controlled multicenter study, 79 children from the ages of 6 months to 5.5 years who had acute, noncomplicated diarrhea were given either a liquid preparation containing apple pectin and chamomile fluid extract standardized to 2.5 g/100 g of chamazulene or placebo for 3 days. (10) Both groups received standard medical treatment of hydration and electrolyte repletion. The chamomile and apple pectin combination decreased the diarrhea more frequently than did the placebo ($P=0.05$). There was a nonsignificant trend in satisfaction of parents in the apple pectin/chamomile group.

A follow-up multicenter, randomized, double-blind, placebo-controlled parallel study of 255 children who had acute diarrhea demonstrated that the chamomile and apple pectin combination was superior to placebo in significantly reducing stool frequency. (3) Treatment was well tolerated, with the incidence of adverse effects similar to that of placebo.

*Division for Research and Education in Complementary and Integrative Medical Therapies, Harvard Medical School, Boston, Mass.

Dermatologic Conditions

Chamomile has been used to treat conditions other than diaper rash. Clinical studies have consistently shown positive results in the treatment of atopic dermatitis, acute weeping skin disorders, decubitus ulcers, and radiation- and chemotherapy-induced oral mucositis. (11)(12)(13)(14)(15)(16) Most of the studies are small and of poor quality. Therefore, more research is needed to assess the efficacy of chamomile for the treatment of skin conditions. Clinical trials and systematic reviews did not find that chamomile was effective in preventing acute radiation dermatitis. (17)(18)

Safety

Adverse Events

A few case reports have documented atopic and contact dermatitis with the use of chamomile. (19)(20)(21)(22) Some individuals allergic to other members of the aster family (ragweed, asters, chrysanthemums) are allergic to chamomile. (19) There are case reports of chamomile eyewashes causing allergic conjunctivitis. There have been rare cases of anaphylaxis to chamomile. (4)(23)(24)(25)(26) No long-term problems have been identified from taking chamomile.

Drug Interactions

Three cases of chamomile interacting with cyclosporine in patients who have had renal transplants have been reported. (27) The mechanism is inhibition of the activity of P450 CYP1A2 and 3A4. (28)(29) Potential interactions with warfarin have been reported, theoretically through the same mechanism of inhibition of P450. (30)(31) There is a theoretical additive effect with other sedative and anxiolytic medications.

Use in Pregnancy and Lactation

No studies have reported the safety of using chamomile for women who are pregnant or breastfeeding, although chamomile is widely consumed during pregnancy as a beverage to treat morning sickness. (32)(33)

Pharmacologic Action

A total of 120 chemical constituents have been identified in chamomile, including terpenoids (chamazulene), flavonoids (apigenin and luteolin), and coumarins (umbelliferone, alpha-bisabolol). (34)(35) The flavonoids apigenin and luteolin possess anti-inflammatory, carminative, and antispasmodic properties. (34) The anti-inflammatory, wound-healing, and antimicrobial effects of German chamomile are attributed to a blue essential oil that contains sesquiterpene alcohol, alpha-bisabolol, chamazulene, and flavonoids. (36)(37)(38)

Administration/Dosage Forms

Adult doses of chamomile usually are one cup of tea or 1 to 4 mL of tincture (1:1 in 45% alcohol), three times daily by mouth. The pediatric dose of flower head is 2 g three times daily and for a single dose of fluid extract (ethanol 45% to 60%) is 0.6 mL to 2 mL. (39)

Summary

As part of any medication history, pediatricians always should ask a child's caregiver about the child's use of over-the-counter remedies and herbal products. Chamomile is used widely to treat children who have GI disorders such as colic, dyspepsia, and diarrhea and to treat skin conditions such as dermatitis. Clinical studies have demonstrated that chamomile may have a positive effect in the treatment of atopic dermatitis, colic, and diarrhea. There are few adverse effects in children. However, children who are allergic to ragweed, asters, and chrysanthemums should use chamomile with caution.

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