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File: ■ Ginger (*Zingiber officinale*, Zingiberaceae)
■ Mefenamic Acid
■ Dysmenorrhea

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RE: Ginger Rhizome Reduces Pain in Women with Moderate to Severe Dysmenorrhea

Shirvani MA, Motahari-Tabari N, Alipour A. The effect of mefenamic acid and ginger on pain relief in primary dysmenorrhea: a randomized clinical trial. *Arch Gynecol Obstet*. November 16, 2014; [epub ahead of print]. doi: 10.1007/s00404-014-3548-2.

Dysmenorrhea is the most common adverse symptom of menstruation and is the result of uterine contraction associated with an excess of prostaglandins within the uterus. Primary dysmenorrhea occurs in the absence of uterine pathology and is often treated with non-steroidal anti-inflammatory drugs (NSAIDs). NSAIDs are effective in approximately 70% of women with primary dysmenorrhea. The remaining 30% of women find these drugs either ineffective or accompanied by undesirable gastrointestinal side effects. The rhizome of ginger (*Zingiber officinale*, Zingiberaceae) has been found to be an anti-inflammatant, and previous studies suggest that ginger consumption reduces the severity of primary dysmenorrhea. In this randomized study, the effect of ginger rhizome was compared to mefenamic acid in women with primary dysmenorrhea.

Women ≥ 18 years old with moderate to severe dysmenorrhea were recruited from the dormitories at Mazandaran University in Babolsar, Iran. Women were excluded if they had an irregular menstrual cycle, exercised regularly, had secondary dysmenorrhea, had an intrauterine device, or were taking contraceptive medication. Patients were randomly assigned to either a ginger treatment group or a mefenamic acid treatment group. The ginger group took one 250 mg capsule of dried ginger rhizome (Zintoma; Goldaru Pharmaceutical Laboratory; Isfahan, Iran) every 6 hours during menstruation until pain relief occurred. The mefenamic acid group took one 250 mg capsule of mefenamic acid every 8 hours during menstruation until pain relief occurred. Patients recorded the most intense pain felt over the course of menstruation with a 100 mm visual analog scale (VAS). Date of each cycle, length of menstruation, and amount of bleeding were also recorded. Patients were allowed to use additional analgesics, if necessary, and were asked to record usage. Data were recorded for 2 menstrual cycles and analyzed with t-tests, chi-squared tests, and Fisher exact tests.

Each treatment group contained 61 patients. Pain associated with dysmenorrhea decreased significantly in both treatment groups over the study period ($P < 0.05$ for both). In the ginger treatment group, the level of pain went from 58.01 ± 14.52 to 38.19 ± 20.47, while the level of pain in the mefenamic acid group went from 55.03 ± 14.95 to 33.75 ± 17.71. There was no difference in pain reduction between the treatments. The number of days of menstruation was significantly greater in the ginger treatment group (6.67 ± 1.24) than in the mefenamic acid treatment group (6.21 ± 1.19) at the end of the study ($P = 0.03$). The patients in the ginger treatment group used more supplemental analgesics than the patients in the mefenamic acid treatment group, but this difference was not significant ($P = 0.07$). By the end of the study, approximately half of the patients in each group had moved from a classification of moderate/severe dysmenorrhea to a classification of mild dysmenorrhea. Fewer patients had severe dysmenorrhea in the mefenamic acid treatment group (n = 2) than in the ginger treatment group (n = 7) at the end of the study. Side effects of the treatments were not noted.

Both ginger rhizome and mefenamic acid reduced the pain associated with menstruation to a similar extent in women with moderate to severe dysmenorrhea. The greater use of supplemental analgesics, increased time of menstruation, and higher incidence of severe dysmenorrhea in the ginger treatment group suggests that mefenamic acid may be more effective for treating dysmenorrhea. Previous studies have found the effect of ginger supplementation on dysmenorrhea to be similar to NSAIDs, and that the effect is more pronounced if supplementation begins before menstruation. The ginger dosage used in previous studies was between 1000 and 2000 mg per day. This is similar to the maximum dosage (1000 mg/day) used in this study. Some studies have found that dosages higher than 2000 mg/day can lead to adverse effects. Ginger contains the compounds gingerol and gingerdione. These compounds are thought to lead to a decrease in inflammation and a concomitant decrease in prostaglandins. Ginger also contains salicylate which would serve directly as an analgesic. Further studies that begin ginger treatment before menstruation may show an even greater effect of ginger on dysmenorrhea.

–Cheryl McCutchan, Ph.D.

The American Botanical Council has chosen not to include the original article.