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File: ■ Lavender (*Lavandula* spp., Lamiaceae)
■ Renal Colic
■ Aromatherapy

HC 101541-543

Date: April 30, 2016

RE: Lavender Essential Oil Reduces Renal Colic Pain in Female Patients

Irmak Sapmaz H, Uysal M, Taş U, et al. The effect of lavender oil in patients with renal colic: a prospective controlled study using objective and subjective outcome measurements. *J Altern Complement Med*. October 2015;21(10):617-622.

Renal colic, with severe flank, side, pelvic, abdominal, and/or back pain, develops secondary to stone formation in the ureter. About half of patients presenting with renal colic require acute hospital care, generally in emergency departments. There is currently no consensus on the ideal treatment protocol, but nonsteroidal anti-inflammatory drugs (NSAIDS) are the first-line treatment, with opioid analgesics used if response to NSAIDS is inadequate. Essential oil of lavender (*Lavandula* spp., Lamiaceae) has long been used in aromatherapy to decrease moderately severe depression, anxiety, and pain, and to support restful sleep. It has known comforting, anti-inflammatory, antiseptic, anticonvulsant, anxiolytic, and analgesic effects. While many studies have examined medical treatments that decrease the pain of renal colic, few have focused on alternative therapies like aromatherapy. The goal of this double-blind, randomized, placebo-controlled, interventional study was to evaluate the effects of lavender essential oil on renal colic.

The study, conducted in Tokat, Turkey, included 100 patients (59 men and 41 women) aged 19-64 years. Recruitment methods and study time frame were not reported, but all patients at the time of inclusion had flank pain and kidney stones. Patients were randomly divided into 2 groups and assigned to treatment in 1 of 2 separate but identical rooms. Patients in room 1 (group 1; 29 men and 21 women) received 75 mg intramuscular diclofenac and a placebo physiologic serum administered via electronic vaporizer. Patients in room 2 (group 2; 30 men and 20 women) received 75 mg intramuscular diclofenac and aromatherapy consisting of 2% lavender oil (LO; manufacturer not indicated) dispersed via electronic vaporizer. Degree of pain was evaluated by patients before treatment and at 10 and 30 minutes after treatment using a visual analog scale (VAS), with 0 representing no pain and 10 representing the most severe pain. Mean arterial pressure (MAP) and heartbeats per minute (BPM) also were recorded at the same time. Comparisons were made between groups and between male and female patients.

VAS scores before treatment and at 10 minutes after treatment did not differ significantly between the groups. However, group 2 VAS scores at 30 minutes after treatment were significantly lower than group 1 (P=0.022). When female and male patients' VAS scores were analyzed separately, there was no difference between group 1 and group 2 before treatment or, for men, at 10 or 30 minutes after; however, for women in group 2, VAS scores at 30 minutes after treatment were significantly lower than those of women in group 1 (P=0.0001). In vivo, aromatherapy has been observed to reduce pain-indicating behaviors in female rats more than male rats, perhaps due to the LO's effect on acetylcholine secretion, induced by pain stimuli. Additionally, it is known that estrogens have important limbic system effects. MAP and BPM before and at 10 and 30 minutes following treatment did not differ significantly between groups.

The authors conclude that these results are similar to other studies and that the effects may be due to linalool and linalyl acetate found in lavender essential oil. Both exhibit analgesic and anti-inflammatory properties in human and in vivo studies, and linalool inhibits prostaglandin production. Additionally, olfactory pathways are connected to the limbic system, the stimulation of which leads to emotional changes that may also be effective in reducing pain. This study was not truly blind since LO is easily distinguishable by smell and this may have impacted the results. In conclusion, the authors surmise that while additional research is needed, aromatherapy with LO can be used as an adjuvant therapy, with NSAIDS or opioid analgesics, in cases of renal colic.

—Mariann Garner-Wizard

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