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**File: ■ Lavender (*Lavandula angustifolia*, Lamiaceae)
■ Postoperative Pain
■ Coronary Artery Bypass Grafting**

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RE: Lavender Aromatherapy Helps Reduce Postsurgical Pain

Heidari Gorji MA, Ashrastaghi OG, Habibi V, Charati JY, Ebrahimzadeh MA, Ayasi M. The effectiveness of lavender essence on sternotomy related pain intensity after coronary artery bypass grafting. *Adv Biomed Res.* June 4, 2015;4:127. doi: 10.4103/2277-9175.158050.

Coronary artery disease is a leading cause of death in developing countries. Coronary artery bypass grafting (CABG) is used to relieve angina pain and to keep the heart muscle functioning in those with coronary artery disease. Postsurgical pain is common in CABG and inadequate pain relief leads to sympathetic stimulation, which can cause tachycardia, hypertension, increased catabolism, agitation, and other complications. A variety of methods, both pharmacological and nonpharmacological, are used to control pain and associated distress after CABG. Among the alternative and complementary techniques used to relieve pain is aromatherapy. Lavender (*Lavandula angustifolia*, Lamiaceae) is used as a painkiller, sedative, narcotic, anti-inflammatory, and antidepressive, and for strengthening the heart, stimulating blood circulation, and healing burns and insect bites. The goal of this single-blind, randomized, controlled, clinical trial was to assess the effects of lavender aromatherapy on pain severity in patients recovering from CABG.

This study included 50 patients who had undergone open-heart surgery at Fatemeh-Zahra Hospital in Sari, Iran. The patients had no addictions, were fully aware 24 hours after surgery, were not allergic to lavender or other plants, and had undergone heart surgery for the first time. The patients were divided randomly into 2 groups of 25. Mean age of the lavender group was 62.6 ± 4.86 years and of the control group, 60.04 ± 8.92 years. Average body mass index was 27.37 ± 4.86 kg/cm² for the lavender group and 26.84 ± 4.46 kg/cm² for the control group. No significant between-group differences were seen in clinical or demographic characteristics at baseline. A 2% essence of lavender (Barij Essence Pharmaceutical Company; Mashhad-e Ardahal, Iran), produced by distilling closed blossoms, was used in the study, with olive (*Olea europaea*, Oleaceae) oil as the carrier oil.

The visual analog scale was used to rate pain intensity and was administered before intervention and 5, 30, and 60 minutes after intervention. A presurgical interview also was conducted to collect demographic information on each patient. Intervention was administered to patients at least 4 hours after the last dose of pharmacological painkiller was received. All patients' vital signs were collected at baseline.

In the lavender group, the patients received a mixture of oxygen and lavender essence for 15 minutes through a breathing face mask, whereas patients in the control group received only oxygen. The oxygen flow rate was between 5 and 6 liters per minute with 40% fraction of inspired oxygen.

If a patient experienced an allergic reaction to the lavender essence or could not tolerate it, he or she was removed from the study. If a patient felt severe pain during the 1-hour intervention, he or she received medication for the pain and was removed from the study. No dropouts were mentioned.

Significant between-group differences were found at the 4 phases of measurement, with the lavender group reporting lower pain intensity than the control group. The greatest differences occurred before intervention and at 60 minutes after intervention ($P=0.001$ for both). At 5 and 30 minutes after intervention, the between-group differences were also significant ($P=0.005$ for both). Results of the *t*-test revealed significantly less severe pain in the lavender group compared with the control group at 5 minutes ($P=0.001$), 30 minutes ($P=0.002$), and 60 minutes ($P=0.001$) after intervention.

Aromatherapy has both psychological and physiological effects. According to the authors, it stimulates the olfactory system, sending a message to the limbic system, which can in turn affect heartbeat, blood pressure, and respiration. When reacting to stress, the limbic system secretes endorphins, enkephalin, and serotonin, leading to calmness and relaxation.

In this study, inhaling lavender essence was effective in reducing pain related to sternotomy in patients recovering from CABG. "The results of the current and similar previous scientific researches suggest applying lavender essence in order to reduce the pain level in several kinds of pain, including global burden of disease (GBD), as it is a safe, low-risk, and cost-effective pain killer," conclude the authors. This study was limited by its small sample size. The paper includes several misspellings and poor English.

—*Shari Henson*

Referenced article can be accessed at <http://www.advbiores.net/article.asp?issn=2277-9175;year=2015;volume=4;issue=1;spage=127;epage=127;aulast=Gorji>.

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