



*Int. J. New. Chem., Special 2022. (Winter)*

## International Journal of New Chemistry

Published online in <http://www.ijnc.ir/>  
Open Access



Print ISSN: 2645-7237

Online ISSN: 2383-188x

### Original Research Article

## The Ear Acupressure Effective on Pain Intensity before Surgery in Patients Undergoing Appendectomy

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*Received: 2022-03-04*

*Accepted: 2022-04-23*

*Published: 2022-04-29*

### ABSTRACT

**Introduction:** Treatment of acute appendicitis is surgery and is the most common emergency surgery worldwide. In more than half of patients with appendicitis, the clinical symptoms are a definite history of vague abdominal pain, nausea, and sometimes vomiting. Currently, the tendency of people to use alternative complementary therapies is increasing rapidly. Also, a study in Iran showed that about 80% of patients sought complementary therapies through physicians. **Material and Methods:** This study was performed during 2018 with the participation of appendectomy candidates in Tabriz University of Medical Sciences. Ear acupressure was used for patients and the severity of acute pain after surgery was evaluated in all of them and the effectiveness of this method was evaluated. **Results:** According to the results, there was no statistically significant relationship between acupressure and pain intensity of the subjects after and 15 minutes after the intervention in the three groups, but reduced the mean pain intensity at 30 minutes after the intervention in the intervention group compared to the two placebo groups. **Conclusion:** The results of the present study showed that acupressure in the thalamus of the ear is a practical and acceptable method for patients and reduces the severity of preoperative pain. On the other hand, pain relief is of clinical importance in nursing care.

**Keywords:** Ear Acupressure, Pain, Appendectomy, Patient

## Introduction

Pain is not a trivial phenomenon, but a health problem. Pain stimulates the sympathetic response, thereby causing tachycardia, hypertension, narrowing of arterial vessels, reduced blood flow to the wound, and decreased relative tissue pressure. In cases where the client is in pain, the nurse can use pharmacological and non-pharmacological strategies to control the pain [1-3]. In general, less aggressive and safer methods are used to control pain first. To relieve pain, depending on the cause of the pain, various drugs such as nonsteroidal anti-inflammatory drugs and narcotics are used. In addition to their therapeutic properties, these drugs have many side effects [4-6]. Long-term use of nonsteroidal anti-inflammatory drugs [NSAIDs] is associated with complications such as gastrointestinal bleeding and renal impairment. Drugs weaken the respiratory system, nausea, vomiting, constipation and reduce thought processes [7-9]. Painkillers used to control patients' pain have many side effects on patients' bodies and minds. In addition to the risk of addiction and drug dependence, painkillers lower blood pressure, impair vital functions, drowsiness, nausea, vomiting, and even shock, and impose high costs on the health care system. Therefore, the need to use non-pharmacological methods to control patients' pain is fully justified [10-13]. The appendix is a small, finger-like appendix that becomes inflamed and swollen due to a sprain or obstruction, called appendicitis. Appendicitis is most common in patients in the second to fourth decades of life. About 7% of the population develops appendicitis during their lifetime [14]. The age range observed in this disease varies from 1 to 89 years. Treatment of acute appendicitis is surgery and is the most common emergency surgery worldwide. In more than half of patients with appendicitis, the clinical symptoms are a definite history of vague abdominal pain, nausea [15], and sometimes vomiting. Currently, the tendency of people to use alternative complementary therapies is increasing rapidly. Also, a study in Iran showed that about 80% of patients sought complementary therapies through physicians [16].

## Material and Methods

### Study design

This study is a one-blind and three-group clinical experience that was conducted in 2018 to determine the effect of acupressure on the pain intensity of appendectomy candidates. For this

purpose, first the researchers [female researcher and male researcher] received the necessary training on determining the points and how to apply acupressure under the supervision of a traditional Chinese medicine specialist. The researchers, after confirming the expert, placed 72 candidate patients for appendectomy randomly assigned to permutation blocks with hexagonal blocks in three groups of intervention, placebo and control. Based on a study [28], using the formula for comparing means for two independent societies, taking into account  $\alpha = 0.05$  and  $\beta = 0.2$ , 21 people in each group were estimated. For a possible sample drop with a 10% probability of sample drop, 24 people in each group were considered.

### **Inclusion / Exclusion Criteria:**

Inclusion criteria were candidates for appendectomy after ultrasound and general surgeon diagnosis, no order for emergency appendectomy, willingness to participate in the intervention, no known complications and other medical problems leading to Severe pain, no lesion or skin problem in the ear and acupressure area, full consciousness and ability to report symptoms and severity. Prior to the intervention, demographic and disease-related characteristics of all three research units were recorded in the relevant form. In this study, a ten-point scale of perceived pain, which is a standard tool, was used to measure pain.

### **Methodology**

The research method was that the researcher, after identifying candidate appendectomy specimens, based on inclusion criteria, selected eligible patients to study and after giving the necessary explanations about how to conduct the research and the possibility of being in the intervention, placebo or control group and obtaining informed consent measured and recorded the severity of preoperative pain in patients. It is noteworthy that in order to observe ethical issues, acupressure in female patients was applied by a female researcher and in male patients by a male researcher. Acupressure was performed for each patient using a finger and ear pad [to transfer and concentrate pressure]; Thus, the patients in the acupressure intervention group received the acupressure in real points, which in this study was the thalamus point in the right ear, and the placebo group received acupressure in the false points, where pressure has no sedative effect. Immediately after the

application of acupressure and detachment of the ear pad and 30 minutes after the intervention, the pain intensity of the studied patients was measured and recorded again.

### **Ethical considerations**

This project was carried out in Tabriz University of Medical Sciences. No costs were charged from the study participants and they entered the study with full and informed consent.

### **Data analysis**

It should be noted that the research assistant who evaluated and recorded the symptoms in this study had no other role and was blind to the study hypothesis. All calculations were performed using SPSS software version 19 and using descriptive statistics and Chi-square tests, analysis of variance with repeated measures, and one-way analysis of variance.

### **Results**

A total of 72 samples were included in the study, of which 50% were male and 50% were female. Chi-square test and one-way analysis of variance showed that there was no significant difference between participants in the three groups in terms of age, sex, level of education, leukocytosis, temperature and duration of fasting and the three groups were homogeneous before the intervention. According to the results, there was no statistically significant relationship between acupressure and pain intensity of the subjects after and 15 minutes after the intervention in the three groups, but reduced the mean pain intensity at 30 minutes after the intervention in the intervention group compared to the two placebo groups.

### **Discussion**

In the present study, the effect of ear acupressure on pain intensity in appendectomy candidates was investigated. In the present study, all three groups were homogeneous in terms of demographic characteristics [17-19]. The results showed that the mean pain intensity between the three groups before the intervention and 15 minutes after the intervention was not statistically significant [20-22]. However, in the intervention group, the mean pain intensity of 30 minutes was significantly reduced compared to before the intervention [23-25]. The results of a study showed that

acupressure in patients after lumbar spine surgery reduced pain in the intervention group compared to before the intervention. The results of this study are consistent with the present study [26-28]. In addition, in a study that examined the effect of ear acupressure on pain in patients with osteoarthritis, researchers found that acupressure reduced the average pain score at 6 and 24 hours after the intervention [29-31]. Researchers studied the effect of acupressure on chronic low back pain for four weeks and found that acupressure reduced pain by 70 percent and overall pain by 75 percent. Also, similar to the results of the present study, the results of another study showed that the application of acupressure at different points affecting pain simultaneously reduces pain in the intervention group compared to the placebo and control groups [32-34]. In another study that performed the effect of acupressure on the pain of 62 patients undergoing full knee replacement surgery for three days, the results showed that there was no statistically significant difference between the pain scores of the placebo and intervention groups, although the dose of analgesics The intervention group was significantly smaller than the placebo group [35-37]. In this study, acupressure was performed on the subcortex and the ear for 1 minute three times a day for three days, while in the present study, acupressure was applied for 15 minutes at the thalamus, which can be one of the Known possible causes of differences in results [38].

## Conclusion

The results of the present study showed that acupressure in the thalamus of the ear is a practical and acceptable method for patients and reduces the severity of preoperative pain. On the other hand, pain relief is of clinical importance in nursing care. Also, improving pain and providing comfort to patients in the important stage before surgery will be associated with reducing many complications during and after surgery, so the use of acupressure, which does not require special equipment and does not have a significant cost, for patients with appendectomy in Surgical wards are recommended.

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### How to Cite This Article

Abdolreza Mehdinavaz Aghdam, Solmaz Fakhari, “**The ear acupressure effective on pain intensity before surgery in patients undergoing appendectomy**” *International Journal of New Chemistry.*, 2022; DOI: 10.22034/ijnc.2022.5.5.