Available online at www.sciencedirect.com

Journal of Acupuncture and Meridian Studies

journal homepage: www.jams-kpi.com

ORIGINAL ARTICLE

Acupuncture in the Management of Acute Dental Pain

Cássia Maria Grillo, Ronaldo Seichi Wada, Maria da Luz Rosário de Sousa*

Department of Social Dentistry, Piracicaba Dental School, University of Campinas, Piracicaba, São Paulo, Brazil

Available online 11 April 2013

Received: Jul 4, 2012
Revised: Feb 26, 2013
Accepted: Mar 5, 2013

KEYWORDS
acupuncture analgesia;
alternative medicine;
dentistry;
toothache

Abstract
Acute dental pain is the main reason for seeking dental services to provide urgent dental care; there is consensus about the use of alternative therapies, such as acupuncture, to control dental pain in pre-dental care. This study aimed to evaluate the use of acupuncture in reducing the intensity of acute dental pain in pre-dental care in patients waiting for emergency dental care, and was conducted at the After-Hours Emergency Dental Clinic of Piracicaba Dental School, and at the Emergency Center Dental Specialties I in Piracicaba, São Paulo, Brazil. The sample consisted of 120 patients. The Visual Analog Scale (VAS) was used to measure pain intensity. All patients underwent one session of acupuncture; the points LI4, ST44 and CV23 were selected and were used alone or in combinations. Reduction in pain was observed in 120 patients (mean initial VAS $= 6.558 \pm 1.886$, $p < 0$; mean final VAS $= 0.962 \pm 2.163$, $p < 0.00001$). The results of this study indicate that acupuncture analgesia could be a technical adjunct to pain control in patients with acute dental pain, contributing to the restoration of health with social benefit.

1. Introduction

Acute dental pain, experienced by many people, without distinction of sex, age, or race, is the most common reason for the demand for health care, especially urgent dental care provided at emergency care centers [1].

Pain is considered a common symptom of an oral condition [2], and to control it, there is consensus about the use alternative therapies combined with conventional treatment. Conventional treatment for acute dental pain management involves diagnosis of the condition causing the pain, dental treatment, and drugs [3]. Two groups of drugs

* Corresponding author. Department of Social Dentistry, Piracicaba Dental School University of Campinas, Av. Limeira, 901 — Areão, Piracicaba CEP 13414-903, São Paulo, Brazil.
E-mail: luzsousa@fop.unicamp.br

pISSN 2005-2901 eISSN 2093-8152
http://dx.doi.org/10.1016/j.jams.2013.03.005

are used: non-narcotic analgesics, including anti-inflammatory steroids, non steroidal anti-inflammatory drugs (NSAIDs, e.g., ibuprofen, aspirin, mefenamic acid) and paracetamol (acetaminophen) and narcotics (e.g., tramadol) [3,4].

At present, acupuncture is an alternative therapy [5], the value of which has been recognized as a treatment for pain [6,7]. In the Geneva WHO 2003 report, pain in dentistry, including dental pain, facial, and postoperative pain, were listed among the conditions for which acupuncture appears to be an effective treatment [8,9].

No scientific literature was found on the use of acupuncture in the management of acute dental pain in pre-dental care, among the clinical trials published in the past 10 years. However, in a systematic literature review [10], according to data analysis, acupuncture can be effective in relieving dental pain, either during surgical procedures or after surgery.

Acupuncture involves inserting thin needles in some points on the surface of the body, known as acupuncture points, in order to obtain a therapeutic response, with the aim of treatment and prevention of disease [11].

When a needle is inserted into the acupoint, a specific feeling called *De qi* is felt, which can present as pain, numbness, heat, weight, or distention around the area where the needle was inserted, and this feeling can radiate along the path of the meridian that belongs to the point stimulated. It is a desired and necessary effect for acupuncture to be effective [12,13].

The exact mechanism of action of acupuncture has not yet been established [13]. According to the literature [14], inserting a needle into an acupoint creates a small inflammatory process, with the release of neurotransmitters such as bradykinin and histamine. Then, the stimuli are conducted to the central nervous system through the thick and myelinated A-delta fibers, and the thin and unmyelinated C fibers, located in the skin and muscles. When the stimuli end on the posterior horn of the spinal cord, they stimulate enkephalinergic neurons, through synapses, to release enkephalin, a blocker of substance P (a neurotransmitter that stimulates pain), thus inhibiting the pain sensation. The stimuli continue mainly through the lateral spinothalamic tract until the brainstem, releasing serotonin, which is responsible for increased levels of endorphin and ACTH (adrenocortical hormone), and increasing cortisol in the adrenal glands, thus ensuring the beneficial effect on the patient's stress and anxiety [14].

Acupuncture is considered a safe procedure [12], if performed by a professional with proper training [5,11,14,15]. It is a natural, low cost therapeutic resource, which has an advantage, because the use of conventional drugs to treat acute dental pain can have adverse effects such as stomach ulcers and bleeding problems (ibuprofen), dizziness, constipation, sleep disorders (tramadol) [4], and hives, skin rashes, and blood dyscrasias (paracetamol) [3].

Acupuncture does not replace conventional surgical procedures [14]. According to current evidence suggesting that acupuncture is effective as a symptomatic treatment of dental pain [16], its use in pain patients awaiting dental care generates a social benefit and improves the patient's physical and emotional condition, thereby contributing to the success of the professional service.

In view of the foregoing discourse, the objective of this study was to evaluate the effect of acupuncture on reducing acute dental pain in patients awaiting care at the after-hours emergency dental care centers.

2. Material and methods

This study was conducted at the after-hours emergency dental care center of the Piracicaba Dental School, University of Campinas and at the Emergency Center Dental Specialties I in Piracicaba (São Paulo), from September 2009 to July 2010.

The study was conducted in accordance with ethical criteria, in compliance with the standards required by the Declaration of Helsinki and was approved by the Research Ethics Committee of the Piracicaba Dental School FOP/UNICAMP (number 020/2009).

A convenience sample was used, which included all patients with acute dental pain, who were waiting for dental care, aged between 18 years and 90 years and who agreed to participate in the study by signing the terms of free and informed consent. Pregnant women and patients participating in other researches were excluded from the sample.

The survey was carried out in the dental office of the emergency dental care centers, prior to the activities of doctors on duty began. To undergo the procedure, the patient was accommodated in the dental chair. After acupuncture, all patients were asked whether they would recommend the procedure to another patient in the same situation.

During the study, the intensity of pain reported by patients was measured by a Visual Analog Scale (VAS), ranging from 0 (VAS 0 = no pain) to 10 (VAS 10 = maximum pain); the initial VAS score was measured at the time of invitation to participate, and the final VAS score, on completion of the acupuncture treatment.

The acupoints selected for the study were according to the therapeutic indication, related to orofacial pain and dental pain, according to Traditional Chinese Medicine (TCM).

2.1. Description of points

LI4 (Hegu): fourth point of the large intestine meridian (LI), located in the back of the hand; point of analgesia in painful disorders of the face and teeth. It is a point of great analgesic importance [17]. In its internal pathway, the meridian is strongly associated with the oral cavity.

ST44 (Nei Ting): penultimate point of the stomach meridian (ST), located in the foot, between the second and third metatarsal; indicated for toothache and in the reduction of edema. The stomach meridian runs through the area around the mouth, mandible, and gums of the maxilla [18].

CV23 (Lian Quan): penultimate point of the conception vessel. It is located in the midline of the ventral depression above the hyoid bone, with the patient sitting with the neck in extension; indicated for facial pain [18].

Points elected were used individually or combined, with the aim of reducing the intensity of acute dental pain (VAS).