

• Commentary

Puncturing the myths of acupuncture

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ABSTRACT

Acupuncture is a widely practiced system of medicine that has been in place for thousands of years. Consumer interest and use of acupuncture are becoming increasingly popular in the United States, as it is used to treat a multitude of symptoms and disease processes as well as to maintain health and prevent illness. A growing body of evidence increasingly validates the practice of acupuncture. Further developing scientific data will play an important role in the future of acupuncture and other complementary and alternative medicines in public health. Acupuncture is commonly used concurrently with conventional medicine. Although acupuncture is embraced by consumers and medical professionals, misconceptions abound. We have explored and dispelled ten misconceptions common to the practice of acupuncture, utilizing an evidence-based approach. As the trend of merging conventional medical care with acupuncture treatment grows, it is important to develop a conceptual model of integrative medicine. Using a scientific evidence approach will create a structure from which to begin and grow confidence among conventional medical providers. Acupuncture is a safe and effective modality when performed properly by trained professionals. Educating both the consumer and medical community is important to enable appropriate and evidence-based applications of acupuncture and integration with conventional medicine for high-quality patient care.

Keywords: acupuncture; complementary therapies; education; quality of life; safety

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1 Introduction

Acupuncture, one of the world's oldest recognized medical treatments, has been used for thousands of years to treat illness, relieve pain, and maintain good health. Acupuncture has grown in popularity within the United States (US) for prevention, as well as treatment, of diseases and specific health conditions^[1]. It has been particularly favored due to the low risk of adverse events compared to common conventional treatments^[2]. Despite potential benefits in many medical conditions, it has largely been used in pain management^[3]. Lack of information and widely-circulated misinformation

regarding acupuncture are partially responsible for its limited application.

This brief report will address common myths surrounding acupuncture in an evidence-based approach.

2 Myths and facts

2.1 Myth 1: Acupuncture only treats pain

Fact: Acupuncture not only is effective for a variety of painful conditions, but also positively impacts other related symptoms. A recent meta-analysis comparing the effects of acupuncture versus sham control among post-operative patients revealed a significant reduction in pain



intensity in the acupuncture group at 8 and 72 h after operation compared with the sham group. Additionally, the acupuncture group had a lower use of opioids as well as a lower incidence of opioid-related side effects including nausea, dizziness, sedation, pruritis, and urinary retention^[4].

Acupuncture has also been shown to have comparable efficacy to medication therapy for symptom management in anxiety as well as post-operative nausea and vomiting^[5-7]. A systematic review of randomized controlled trials comparing hot flash treatments for breast cancer survivors found acupuncture to be equally effective, with longer sustained relief and lesser side effects, than pharmacologic interventions^[4,8].

Acupuncture also remains underutilized in hospice and palliative settings. A recent survey on the use of complementary and alternative medicine in hospice and palliative care revealed usage of around 86% for massage therapy, but only 32% for acupuncture^[9]. Acupuncture has been found to be effective for symptoms such as nausea and vomiting, neuropathic and visceral pain, dyspnea, xerostomia, and pain that related to bone metastasis^[10].

2.2 Myth 2: Acupuncture is painful

Fact: Needles used for acupuncture are very thin, solid and filiform. These slide into place without cutting the skin, with little-to-no blood found after removal. Acupuncturists are often able to insert the needle with little-to-no pain although the patients may feel sensations such as numbness or an ache during manipulation^[11]. In comparison, hypodermic needles are slanted and hollow to allow blood draws and injections.

2.3 Myth 3: Acupuncturists have minimal education or medical knowledge

Fact: There are approximately 60 accredited acupuncture colleges in the US that offer master's level degrees in acupuncture or acupuncture and oriental medicine^[12]. Typically these programs require four years of training including didactic course work in anatomy, physiology, pathophysiology, and pharmacology, as well as traditional Chinese medicine^[13]. While biomedical science curricula enable acupuncturists to successfully provide acupuncture-related patient care, communicate and collaborate with conventional medical professionals, it does not offer clinical medical privilege^[14]. Acupuncture is a regulated practice in all but five states within the US. All except California require licensed acupuncturists to be board-certified with the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM)^[12].

2.4 Myth 4: Acupuncture only works through a placebo effect

Fact: Acupuncture treatment is an intervention of synthesized experiences, including dialogue of lifestyle recommendations, diagnostic discussion, and the actual

placement of acupuncture needles. This often results in a therapeutic relationship. For this reason, many studies find little statistical significance between real acupuncture and sham acupuncture, which could produce a placebo effect^[15]. Sham acupuncture, *i.e.*, needling a non-acupuncture point or simulating acupuncture without actual insertion, may include the positive therapeutic relationship that can lead to bias^[16]. There are a variety of theories that explain physiological effects, including altered brain chemistry by the increased release of endogenous opioids and neurotransmitters, which occur with acupuncture^[11,17]. Additionally, acupuncture has been shown to have a number of immunomodulatory properties^[11]. An extensive human patient meta-analysis found that acupuncture outperformed sham treatments and standard care for chronic pain treatment^[3].

2.5 Myth 5: Acupuncture treatment puts me at risk for infection

Fact: The occurrence of infection following acupuncture treatment is rare. Upon review of 12 prospective studies surveying more than one million acupuncture treatments, only 204 primary reports of infection were found. Hepatitis accounted for over 60% of these cases^[2]. The introduction of sterile, single-use disposable acupuncture needles has greatly reduced or eliminated the incidence of infection with acupuncture treatment. Licensed acupuncturists in the US practice clean needle technique with every patient^[12].

2.6 Myth 6: Serious injury can occur with acupuncture treatment

Fact: As with all medical procedures, there are risks of adverse events with acupuncture. While the risk of these generally mild events is low, events may include dizziness, nausea, hematoma at the site of needle insertion, or very slight bleeding^[18]. According to a review of over a million treatments, 54 primary reports of pneumothorax were related to acupuncture resulting in four fatalities (<0.0004%). This review concluded that acupuncture treatment is a safe procedure when performed by a skilled and trained acupuncturist^[2].

2.7 Myth 7: I cannot have acupuncture if I am taking an anticoagulant medication

Fact: When performed by a skilled and trained acupuncturist, acupuncture treatment is generally safe for patients taking anticoagulant or antiplatelet medications. A recent study looking at the safety of acupuncture in anticoagulated patients reported no serious or extensive bleeding. The occurrence rate of microbleeding (bleeding which stopped within 30 s) among all control groups was <4.8%^[18].

2.8 Myth 8: Acupuncture is not safe during pregnancy

Fact: While the safety of acupuncture in the first trimester is not well-established, it is commonly used in

early pregnancy. Acupuncture may be a safe treatment option for women in early pregnancy^[19]; however, trials during the second and third trimester are scant, in part due to the suggested “forbidden” acupuncture points, which are to be avoided during pregnancy^[20,21]. Several studies have reported the safety of acupuncture in early pregnancy^[22]. Data from a large Swedish, randomized controlled clinical trial that examined the safety of acupuncture in pregnancy showed acupuncture to be safe during the second and third trimesters, with no adverse events noted in women during pregnancy or delivery, or in fetuses/neonates^[20].

2.9 Myth 9: Acupuncture works after a single treatment

Fact: Acupuncture is known to have a cumulative effect, meaning one treatment builds on the next. Many factors influence the effectiveness of acupuncture, including the timing of treatment and discontinuing treatment earlier than recommended. Many people seek acupuncture treatment after they have exhausted other options, which can reduce the effectiveness of acupuncture treatment and/or require a longer series of treatment. There are certain instances where acupuncture can produce immediate results due to acupuncture increasing the body’s natural opioids, such as endorphins and/or induce a system reflex, but these results may be short-lived^[17].

2.10 Myth 10: I have to choose between acupuncture and my traditional medical treatment, I cannot do both

Fact: Acupuncture may easily be used in conjunction with traditional medicine. Acupuncture can provide a safe adjunctive treatment that does not interfere with traditional treatment plans. In fact, many people are made aware of acupuncture by their conventional medical providers. Survey-based studies indicate that the majority of patients undergoing acupuncture have used, or are currently using conventional treatments such as pharmaceuticals, physical therapy, or surgery contemporaneously with acupuncture treatment^[1]. The National Institutes of Health compiled a list of conditions for which acupuncture could be considered as an adjunctive treatment in a comprehensive approach to conventional medical care such as addiction, headache, stroke rehabilitation, and asthma^[23]. Many cancer patients utilize acupuncture in addition to conventional treatment to mitigate side effects and increase quality of life^[11]. A study investigating the use of acupuncture in breast cancer patients undergoing high-dose chemotherapy found that women who used acupuncture in conjunction with traditional antiemetics had significantly fewer episodes of emesis than the placebo group ($P=0.01$)^[11]. It is most effective to initiate acupuncture treatment before exhausting conventional resources as this delay may reduce the effectiveness of acupuncture^[1].

3 Summary

Acupuncture, often a relaxing and peaceful experience that can potentially enhance several aspects contributing to quality of life, is safe when performed by trained professionals. Acupuncture can be combined with conventional treatment to offer an integrative approach to health and wellness. It is encouraging to see acupuncture-related research continue to grow, as this facilitates accurate information for effectively incorporating acupuncture into treatment algorithms and offerings. Examining the myths surrounding acupuncture in an evidence-based way, combined with provider education, is likely to facilitate appropriate utilization in a variety of indications where this modality can be beneficial for alleviating symptoms and promoting wellness.

4 Conflict of interest

The authors declare no conflicts of interest.

REFERENCES

- Zhang Y, Lao L, Chen H, Ceballos R. Acupuncture use among American adults: what acupuncture practitioners can learn from national health interview survey 2007? *Evid Based Complement Alternat Med*. 2012; 2012: 710750.
- White A. A cumulative review of the range and incidence of significant adverse events associated with acupuncture. *Acupunct Med*. 2004; 22(3): 122–133.
- Vickers AJ, Cronin AM, Maschino AC, Lewith G, MacPherson H, Foster NE, Sherman KJ, Witt CM, Linde K. Acupuncture for chronic pain: individual patient data meta-analysis. *Arch Intern Med*. 2012; 172(19): 1444–1453.
- Sun Y, Gan TJ, Dubose JW, Habib AS. Acupuncture and related techniques for postoperative pain: a systematic review of randomized controlled trials. *Br J Anaesth*. 2008; 101(2): 151–160.
- Bae H, Bae H, Min BI, Cho S. Efficacy of acupuncture in reducing preoperative anxiety: a meta-analysis. *Evid Based Complement Alternat Med*. 2014; 2014: 850367.
- Errington-Evans N. Randomised controlled trial on the use of acupuncture in adults with chronic, non-responding anxiety symptoms. *Acupunct Med*. 2015; 33(2): 98–102.
- Lee A, Chan SK, Fan LT. Stimulation of the wrist acupuncture point PC6 for preventing postoperative nausea and vomiting. *Cochrane Database Syst Rev*. 2015; (11): Cd003281.
- Johns C, Seav SM, Dominick SA, Gorman JR, Li H, Natarajan L, Mao JJ, Irene Su H. Informing hot flash treatment decisions for breast cancer survivors: a systematic review of randomized trials comparing active interventions. *Breast Cancer Res Treat*. 2016; 156(3): 415–426.
- Kozak LE, Kayes L, McCarty R, Walkinshaw C, Congdon S, Kleinberger J, Hartman V, Standish LJ. Use of complementary and alternative medicine (CAM) by



Washington State hospices. *Am J Hosp Palliat Care*. 2008; 25(6): 463–468.

10 Standish LJ, Kozak L, Congdon S. Acupuncture is underutilized in hospice and palliative medicine. *Am J Hosp Palliat Care*. 2008; 25(4): 298–308.

11 Cohen AJ, Menter A, Hale L. Acupuncture: role in comprehensive cancer care—a primer for the oncologist and review of the literature. *Integr Cancer Ther*. 2005; 4(2): 131–143.

12 National Certification Commission for Acupuncture and Oriental Medicine. *Diplomate of acupuncture*. (2014) [2015-06-24]. <http://www.nccaom.org/consumers/acupuncture-certification>.

13 AOMA Graduate School of Integrative Medicine. *MAcOM course curriculum*. (2016) [2016-06-21]. <http://aoma.edu/programs/masters-of-acupuncture-and-oriental-medicine/program-of-study/curriculum-course-descriptions/>.

14 Eisenberg DM, Cohen MH, Hrbek A, Grayzel J, Van Rompay MI, Cooper RA. Credentialing complementary and alternative medical providers. *Ann Intern Med*. 2002; 137(12): 965–973.

15 Colagiuri B, Smith CA. A systematic review of the effect of expectancy on treatment responses to acupuncture. *Evid Based Complement Alternat Med*. 2012; 2012: 857804.

16 Kaptchuk TJ. Acupuncture: theory, efficacy, and practice. *Ann Intern Med*. 2002; 136(5): 374–383.

17 Han JS. Acupuncture and endorphins. *Neurosci Lett*. 2004; 361(1–3): 258–261.

18 Kim YJ, Kim SK, Cho SY, Park SU, Jung WS, Moon SK, Ko CN, Cho KH, Kim SB, Shin WC, Park JM. Safety of acupuncture treatments for patients taking warfarin or antiplatelet medications: retrospective chart review study. *Eur J Integr Med*. 2014; 6(4): 492–496.

19 Smith C, Crowther C, Beilby J. Pregnancy outcome following women’s participation in a randomised controlled trial of acupuncture to treat nausea and vomiting in early pregnancy. *Complement Ther Med*. 2002; 10(2): 78–83.

20 Elden H, Ostgaard HC, Fagevik-Olsen M, Ladfors L, Hagberg H. Treatments of pelvic girdle pain in pregnant women: adverse effects of standard treatment, acupuncture and stabilising exercises on the pregnancy, mother, delivery and the fetus/neonate. *BMC Complement Altern Med*. 2008; 8: 34.

21 Kvorning N, Holmberg C, Grennert L, Aberg A, Akeson J. Acupuncture relieves pelvic and low-back pain in late pregnancy. *Acta Obstet Gynecol Scand*. 2004; 83(3): 246–250.

22 Park J, Sohn Y, White AR, Lee H. The safety of acupuncture during pregnancy: a systematic review. *Acupunct Med*. 2014; 32(3): 257–266.

23 NIH Consensus Development Program. *Acupuncture*. National Institutes of Health *Consensus Development Conference Statement*. (1997-11-03) [2016-06-21]. <http://consensus.nih.gov/1997/1997Acupuncture107html.htm>.



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