

Augmentation of Conventional Medical Management of Moderately Severe or Severe Asthma with Acupuncture and Guided Imagery/Meditation

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Abstract

Objective: I sought to determine if a combination of acupuncture and guided imagery could augment the conventional medical management of moderately severe or severe asthma.

Design: This was an early-phase study with a convenience sample of self-selecting patients compared with self—year before, during treatment, and one year after treatment.

Setting: Patients were recruited from an outpatient practice.

Patients: All participants were adults with moderately severe or severe asthma (class 3 or 4).

Interventions: The study employed acupuncture and guided imagery/meditation for a 24-week period.

Main Outcome Measures: The main outcome measures were number of days of hospitalization, number of Emergency Department (ED) visits, number of physician visits, days per year taking steroids, puffs per week of inhaled β -agonists, FVC (forced vital capacity), FEV1 (forced expiratory volume in the first second), and FEF25-75 (forced expiratory flow between 25% and 75% of the FVC).

Results: With the addition of acupuncture and guided imagery to conventional medical management, members of the study group experienced improvement. The number of hospitalized days and the number of ED visits not leading to hospitalizations decreased, as did number of medical visits and total days taking oral corticosteroids. Parameters of respiratory function improved despite reduced use of inhaled β -agonists.

Conclusion: With acupuncture and guided imagery and meditation together, a self-selecting group of patients with moderately severe or severe asthma experienced improvement in respiratory function, taking less medication than before and having fewer emergencies and hospitalizations at a lower cost of care.

Introduction

Asthma is a serious chronic lung disease characterized by reversible airway obstruction and airway inflammation. According to the 2002 National Health Interview Survey, 30.8 million people—21.9 million adults and 8.9 million children—in the US have had asthma diagnosed sometime during their lifetime.¹ Although the American Lung Association (ALA)² reported, in 2005, that asthma mortality rates and hospitalizations have declined over the past few years, the health care system's burden from asthma has continued to increase since the 1980s, and asthma continues to take a significant toll on daily activities and economic productivity for many patients. The National Health Interview Survey found that in the previous year, symptoms of asthma caused children between ages 5 to 17 years to miss 14.7 million school days and caused employed adults to miss 11.8 million workdays. The ALA² reported in 2005 that asthma entails an annual economic cost to the US of \$16.1 billion, including \$11.5 billion in direct health care costs and \$4.6 billion in lost productivity.

Use of Complementary and Alternative Medicine for Asthma

Many patients with asthma are attracted to complementary and alternative medicine (CAM). Blanc and colleagues³ found that 42% of the adults surveyed with allergies or asthma had tried some form of CAM. Angsten⁴ has proposed that asthma patients may be interested in CAM because of the chronic nature of their illness, because of the "perceived toxicities of therapies such as inhaled corticosteroids," and because they are attracted to the holistic approach of the treatments, which appreciates the psychological basis of disease. Davis and coworkers⁵

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believe that it is the lack of success of conventional asthma therapy that has resulted in increasing numbers of patients seeking CAM approaches.

Acupuncture Studies to Date

Although numerous studies have already been conducted to examine the effectiveness of acupuncture for adults with asthma, it is still difficult to draw definitive conclusions regarding its effectiveness. In one uncontrolled clinical series of 25 steroid-dependent asthma patients treated with acupuncture and traditional Chinese medicine (TCM), more than 80% had decreased symptoms and became less dependent on steroids.⁶ In another uncontrolled clinical series,⁷ 80 patients were treated with acupuncture and blood injections in points on the back (back-shu points); 39 patients were cured of their asthma (48%), 21 showed substantial improvement (26%), 15 showed some improvement (18%), and 5 (6%) showed no effect, the total effective rate being 93%.

Systematic reviews of randomized, controlled trials do not tend to support the use of acupuncture for asthma. A 1991 systematic review by Kleijnen and colleagues⁸ found 13 studies that sought to assess the efficacy of acupuncture in asthma therapy. These authors concluded that claims that acupuncture is effective are not based on the results of well-performed clinical trials. However, the requirement of double-blinding, necessary before a study can be deemed of high quality according to most review scoring systems, is extremely difficult to achieve in a practitioner-delivered intervention such as acupuncture. This issue often causes well-designed acupuncture studies to be rated as low-quality trials.

A Cochrane Collaborative systematic review by McCarney and colleagues⁹ of acupuncture for chronic asthma in 2004 yielded similar results. Their review of 11 studies that involved 324 participants found a lack of evidence that short-term acupuncture treatment has a significant effect on the course of asthma. However, they noted that it is questionable whether the acupuncture protocols used in the research are representative of acupuncture conducted in actual practice, considering that treatments are modified for the person depending on the practitioners' assessments and acupuncture often is one part of a package of care that includes diet and herbal medicines. The Cochrane reviewers commented that the underresearched aspect of treatment is the subjective element of this complex

therapy. It is difficult to remove acupuncture treatment from its context, and this has not been addressed in existing research.

Martin and coworkers¹⁰ conducted a systematic review and a meta-analysis of published data from 11 randomized, controlled trials. The meta-analysis did not find evidence of an effect of acupuncture in reducing asthma. However, the meta-analysis "was limited by shortcomings of the individual trials, including small sample size, missing information, adjustment of baseline characteristics and a possible bias against acupuncture introduced by the use of placebo points that may not be completely inactive."

Guided Imagery and Asthma

Guided imagery has been primarily studied as an activity done within psychotherapy. Deter and Allert¹¹ studied the effectiveness of group psychotherapy for asthma patients between 16 and 60 years of age. Study subjects were randomly divided into three groups: two treatment groups consisting of the exchange of information, discussion sessions about the illness, and autogenic training, which they also called "functional relaxation." A third group was the control group. The treatment group's sympathomimetic medication use was significantly reduced by one year of treatment. The use of steroids decreased, as did the number of visits to the general practitioner. The authors concluded that psychosomatic group therapy could make an important contribution to the treatment of asthma patients. They believe that body therapy practiced in autogenic training and functional relaxation was another important healing factor for the treatment, in addition to the discussion sessions and the exchange of information. Brief hypnotherapy in the style of Milton Erickson has been shown effective in improving the symptoms of asthma.¹²

What allopathic medicine labels simply asthma, TCM considers 12 different prototypes or patterns as relevant to bronchospasm: lung xu (deficiency); kidney xu (deficiency), especially kidney failing to grasp qi⁴; phlegm heat; liver fire insulting lung; wind and cold in the lung; lung invaded by wind-heat; lung qi stagnation; yang ming (large intestine); tai yin (lung); lung obstructed by damp-phlegm with spleen yang xu (deficiency); dysfunction of the ren mai (conception vessel); shi (excess) of the yin wei mai (yin linking vessel). Each of these prototypes is treated somewhat differently. Lists of points are available for treating these various aspects of asthma. Each point has a variety of uses. For example, ding chuan diffuses lung qi and calms wheezing, whereas GV-14 dispels wind and

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cold, spreads and facilitates yang, regulates and stimulates the flow of qi, clears lung heat, and is used with persistent wheezing or acute respiratory distress.^{13p186} For a greater understanding of these concepts, see *Acupuncture: A Comprehensive Text by Shanghai College of Traditional Chinese Medicine*, Dan Bensky translated by John O'Connor (Hardcover—1984) Taos, NM: Redwing Book Co.

The purpose of this effort was to determine if the addition of acupuncture (an externally applied treatment) and guided imagery (an internally applied approach) would benefit patients with moderately severe or severe asthma who were already receiving the best available medical treatment and still had symptoms, and who were motivated to select the combination intervention.

Relationship Effect

Elsewhere, I have argued that treatments do not have effectiveness outside of their use within a relational and narrative context. The implications of outcome research in psychotherapy—that relationship, rapport, and faith are more important than technique used—may be equally relevant to medicine.¹⁴

Methodology

Treatment Group

This was an early-phase study of patients whom I treated, where patients were historically compared with themselves. Thirty-six patients with asthma who visited a CAM clinic were interested in participating in a combination of acupuncture and an innovative type of group psychotherapy in the hopes that this would benefit their asthma. Patient visits were covered by their health plan. Informed consent was given for participation.

The patients were between 21 and 50 years of age ($\mu = 37$) and had had asthma for a mean duration of 24 years. There were 24 women and 12 men. Participants took the following medications: albuterol metered-dose inhalers (36), corticosteroid metered-dose inhalers (36), leukotriene inhibitors (16), oral corticosteroids (19), and cromolyn compounds (6).

Assessment of Severity of Illness

Severity of asthma was determined using the standard four-class scale of the National Institutes of Health Consensus Statement on Asthma.¹⁵ Number of days of hospitalization, number of Emergency Department (ED) visits, number of physician visits, days per year taking steroids, puffs per week of albuterol, FVC (forced vital

capacity), FEV1 (forced expiratory volume in the first second), FEF 25-75 (forced expiratory flow between 25% and 75% of the FVC), and number of “attacks,” as recorded in a diary, were used to assess outcome of treatment. This information was recorded from requested medical records for the year prior to the study through the year after study subjects discontinued treatment, and for the six months during treatment. Though patients also kept this information in a diary, the data were too sporadic to be reliable and are not reported. However, the subjective sense of the diaries was one of improvement.

Informed Consent for Treatment was Obtained from All Patients.

Consistent with TCM principles, no one formula exists for the treatment of asthma. Point combinations will differ by patient. Common points used in the treatment of asthma for these patients included Bl-12, Bl-13, Bl-38, Bl-15, Bl-17, Bl-23, GV-4, Lu-1,¹⁶ Lu-5, Lu-6 (+), Lu-7, Lu-9, LI-4, PC-6, CV-22, CV-21, CV-17, Kd-27, Kd-26, Kd-25, Kd-24, Lv-14, CV-12, CV-4, St-40, St-36, Kd-6, Kd-5, Kd-4, Kd-3, Lv-8, Lv-3, Sp-4, and ear points for lung, kidney, asthma/wheezing, adrenals, sympathetic nervous system, and shen men. Descriptions of the indications for each of these points can be found in common references, such as Interactive Body-Mind Information System (IBIS).¹⁷

Data Analysis

The above outcome variables were compared for the year before treatment, during treatment, and for the year after treatment using *t*-tests as implemented by Systat Software, Inc (San Jose, CA, USA).

Treatment

I treated the patients once weekly with acupuncture using combinations of the points mentioned above. Each treatment lasted 30 to 60 minutes. Guided imagery and meditation was provided weekly in a group format. Each group session lasted two to three hours. Breaks were used as needed. A portion of the group session was used for discussion of medical issues raised by group members. I was always one of the leaders of the group, so that a physician was always present. Once a month, an entire session was only “talking circle” to give participants a break from the structure and a chance to say what was on their minds. This is a traditional Native American group method in which a decorated object (the talking stick) is passed around the group. Group members speak when they hold

the object (usually a stick) without interruption until they are finished. Then the stick is passed to the next member until it passes around the entire circle. Three groups were conducted. Each group began with 12 patients. Sessions lasted 24 weeks.

Every session began with a meditation guided-imagery exercise. The content was unique to particular weeks and was implemented after the guided imagery meditation exercise. A detailed overview of the content of the 24 sessions is available on the Web site of *The Permanente Journal* (www.kp.org/permanentejournal/fall08/appendix.html) and is summarized in Table 1.

Table 1. Major topics of the 24 group sessions^a

Session number	Topic
1	Introduction to Group
2	Introduction to Narrative: The Life Story
3	The Timeline Health History: Stress
4	The Timeline Health History: Social Support
5	Stress Reduction: How We Cope With Stress
6	Coping with Stress II
7	Alcohol, Drugs, Sugar, Fat, and Food
8	Increasing Emotional Awareness
9	Environmental Awareness
10	Health Beliefs
11	Social Functioning I
12	Social Functioning II
13	Coping Skills I
14	Coping Skills II
15	Family Influences I
16	Family Influences II
17	Evaluation of Previous Sessions
18	What Character, What Story
19	Preferred Story
20	Possible Futures
21	Family Heritage
22	Family Reconstruction I
23	Family Reconstruction II
24	Wrap-Up

^a A detailed description of the sessions is listed in an appendix, which is available online at: www.kp.org/permanentejournal/fall08/appendix.html.

Results

Participation in the group treatment program was associated with significant improvement among patients who began treatment (Table 2). The number of days of hospitalization and the number of ED visits not leading to hospitalizations decreased markedly. The number of medi-

cal visits decreased, as did total number of days taking oral corticosteroids. The amount of albuterol used decreased, and all parameters of respiratory function improved.

Of the patients starting group psychotherapy, 15 failed to complete half of the group psychotherapy program, for a completion rate of 58%. Another five patients dropped out before the conclusion of the 24 sessions, giving a start-to-finish completion rate of 44%. Intent-to-treat analysis was conducted so that a patient remained in the treatment group even if he or she attended only one group session.

Discussion

Patients with moderately severe or severe asthma who, when visiting the CAM clinic, selectively chose a combination of acupuncture and guided imagery/meditation, experienced respiratory improvement—decreased symptoms, ED visits, and number of days of hospitalization. The addition of acupuncture and guided imagery to maximum medical management allowed for further improvement that was statistically significant. Cost savings were apparent.

The strength of an early-phase research study such as this lies in its application to a group of patients who are rarely studied in randomized, controlled trials—the patients with moderately severe to severe disease who are judged too ill for alternative therapies—and who are motivated to enter a supplemental, combination CAM-treatment intervention. The results suggest that this group may benefit the most and at cost savings.

Although the data compare the patients in the treatment group with their own historical data, evaluation of the results of the treatment group could show a bias in favor of self-selecting patients who might have had more motivation to improve. Nevertheless, in the setting of actual clinical practice (outside of research institutions), only motivated patients will attend treatment. The intent-to-treat analysis reduced some of this inherent bias. Because this study was conducted in a clinical practice, it is similar to what would be expected in other clinical practices, compared with research settings.

Elsewhere, I have argued that treatments are not effective outside of their use within a relational and narrative context. By ignoring the interpersonal and intentional aspects of medical treatment, randomization may reduce the estimation of how much we can help patients. Techniques have different efficacy with different practitioners, depending on that practitioner's commitment to the patient, care and concern, intent to be helpful, ability to build rapport, and ability to

communicate faith and expectancy of improvement. Randomized, controlled trials are excellent for deciding between two drugs about which the practitioner has no emotional attachment and in which his or her emotional attachment to the patient remains constant. Even then, the randomized, controlled trial may not reveal the “true” estimate of the drug’s effectiveness, for drugs are rarely prescribed outside of a therapeutic relationship. The implications of recent outcome research in psychotherapy—that relationship, rapport, and faith are more important than technique used—may be equally relevant to medicine.

A control group does not exist to allow us to say that the results obtained in this population could not

have been entirely due to relationship quality, rapport, patient faith, and physician enthusiasm. That being said, to engage with patients and to build trust, relationship, and enthusiasm, we need to do something in which we believe, and to cultivate the patients’ belief in us and our techniques. Acupuncture and guided imagery may have independent efficacy (if there is such a thing) or may provide a matrix for the social interaction in which trust and relationship emerges. Either way, what matters is that patients with moderately severe or severe illness who were receiving maximal medication treatment experienced further improvement when acupuncture and guided imagery were added to their regimen. The additional costs of this extra treatment were no more

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Table 2. Outcome measures of treatment for patients (n = 36): one year before treatment to one year after treatment		
Outcome measure	Treatment group^a	Significance
Average number of days of hospitalization	Days	Statistical difference between each period
Year prior to group	9.2 (3.2) ^a	Before to during p < 0.0001
During 6-month group	3.1 (1.0) ^b	During to after p < 0.0001
Year after group	0.5 (0.13)	Before to after p < 0.0001
Average number of emergency department visits without hospital admission	Visits	
Year prior to group	5.3 (1.17)	Before to during p < 0.0001
During group	1.2 (0.87)	During to after p = 1.0
Year after group	1.2 (0.9)	Before to after p = 0.0026
Average number of physicians visits	Visits	
Year prior to group	16.1 (6.6)	Before to during p = 0.0689
During group	14.1 (4.70)	During to after p = 0.0008
Year after group	10.5 (3.94)	Before to after p < 0.0001
Days per year taking oral steroids	Days	
Year prior to group	37.1 (7.5)	Before to during p < 0.0001
During group	25.6 (6.4)	During to after p < 0.0001
Year after group	14.2 (4.0)	Before to after p < 0.0001
Puffs per week of albuterol	Puffs	
Year prior to group	68.3 (19.5)	Before to during p < 0.0001
During group	41.2 (12.3)	During to after p < 0.0001
Year after group	30.2 (10.5)	Before to after p < 0.0001
FEV1	Volume (cc)	
Year prior to group	246.0 (44.2)	Before to during p < 0.0001
During group	316.1 (67.9)	During to after p = 0.0059
Year after group	367.8 (85.2)	Before to after p = 0.0096
FVC	Volume (cc)	
Year prior to group	390.1 (80.7)	Before to during p = 0.0188
During group	430.0 (109.2)	During to after p = 0.0127
Year after group	480.6 (120.9)	Before to after p = 0.1038

^a Mean ± SD.

^b All number of visits during group were recalculated to be expressed as visits per year because the group lasted less than one year.

FEV1 = Forced expiratory volume in the first second

FVC = Forced vital capacity

than \$100 Canadian per week for 24 weeks—\$2400, which is now the price of two or three ED visits in Canada, depending on whether the region involved is urban or rural. ❖

^a Qi or chi is an energy conceptualized by traditional Chinese medicine as fueling life

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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Breathing

Among the Diseases whereby the Region of the breath is wont to be infested, if you regard their tyranny and cruelty, an Asthma (which is sometimes by reason of a peculiar symptome denominated likewise an Orthopnoea) doth not deserve the last place; for there is scarce any thing more sharp and terrible than the fits thereof Breathing, whereby we chiefly live, is very much hindred by the assault of this disease, and is in danger, or runs the risque of being taken away.

— Pharmaceutice Rationalis, Thomas Willis, 1621-1675, English physician and cofounder of the Royal Academy