

**NADA ACUPUNCTURE PROSPECTIVE TRIAL IN PATIENTS WITH
SUBSTANCE USE DISORDERS AND
SEVEN COMMON HEALTH SYMPTOMS**

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Medical Acupuncture, vol. 23, n. 3, 16. Sept. 2011

Abstract

Background: NADA (National Acupuncture Detoxification Association) acupuncture is a simple standardized five point auricular needling protocol that originated as a grassroots response to opiate addiction in the 1970's. It is increasingly recognized as a nonspecific behavioral health intervention of notable utility in a wide variety of other psychiatric settings and conditions.

Objective: To evaluate the effectiveness of NADA acupuncture in reducing the severity of seven common behavioral health symptoms.

Design: A prospective trial in a self-selected population of nonrandomized patients.

Setting: The Mecklenburg County Substance Abuse Services Center (SASC) in Charlotte, North Carolina, USA.

Patients: All 167 patients participating in the study met *Diagnostic and Statistical Manual for Mental Disorders (4th edition)*, American Psychiatric Association criteria for a current diagnosis of Substance Use Disorder.

Intervention: NADA acupuncture plus conventional treatment versus conventional treatment alone within a highly structured 28-Day residential treatment program.

Main Outcome Measures: Change in symptom severity using a 10-point Likert scale.

Results: NADA acupuncture is associated with statistically significant improvement ($p = .0001$) across all symptom measures. P-values were obtained from t-test analysis using SAS statistical software, version 9.1.

Conclusion: NADA acupuncture may help facilitate significant improvement in cravings, depression, anxiety, anger, body aches/headaches, concentration, and decreased energy.

Keywords: acudetox, acupuncture, addiction, National Acupuncture Detoxification Association. psychiatry, substance use

Introduction

Acupuncture is one of the most widely used alternative therapies within the context of addiction treatment. It has been used as an adjunct to conventional therapy because it reduces cravings and withdrawal symptoms from substances of abuse and contributes to improved treatment engagement and treatment retention [1, 2]. NADA acupuncture is simple and easily taught; it is commonly referred as acu detox, acupuncture detoxification, five point ear acupuncture protocol, five point protocol, and 5 NP; it involves bilateral needle insertion at auricular Sympathetic, Shen Men, Kidney, Liver, and Lung. Beyond the actual needling, a key element of NADA acupuncture specifies qualities of behavior and attitude on the part of the clinician consistent with what is known as the “Spirit of NADA”. NADA acupuncture is not dependent on Traditional Chinese Medicine theory. It can be used in the acute and chronic phases of medical and psychiatric disease, across a broad spectrum of symptoms and conditions, it is can be used before and after a diagnosis has been made [3, 4].

Outcome reports on adjunctive auricular acupuncture treatment have been published only to a limited degree with mixed results [5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,]. In the past, there has been an emphasis on placebo-controlled studies. There are alternatives to placebo-control designs that are more appropriate to the study of NADA acupuncture outcomes [16]. For example, Schwartz [17] in a landmark Centers for Substance Abuse Treatment study compared recidivism rates in 3 outpatient and 4 residential addiction treatment programs. Schwartz found that addicts choosing NADA acupuncture treatment as outpatients were less likely to relapse in the 6 months following discharge than patients who chose residential programs that did not include NADA acupuncture.

Two additional controlled clinical trials provide strong support regarding NADA acupuncture use as an adjunctive treatment for alcoholics. The Bullock 1987 [18] and Bullock 1989 [19] studies showed significantly better outcomes for patients in the active group who received NADA acupuncture on measures of attendance and self-reported need for alcohol. The control group self-reported over twice the number of drinking episodes compared to the active group

that received NADA acupuncture. Additionally, the control group had twice the rate of hospital readmission to the alcohol detoxification unit during the follow-up period [19].

Researchers have noted the following variety of specific physiological effects associated with acupuncture as cited in Brewington's 1994 comprehensive review of the acupuncture literature [10]. It has been reported that acupuncture at traditional points produced effects in EEG, GFR, blood flow, and breathing rate while stimulation of control points by acupuncture needles produced little to no appreciable effect. Studies have linked acupuncture to the production of endogenous opiate peptides, such as beta endorphin, and metenkephalins. Acupuncture has also been associated with changes in the production of other neurotransmitters, including ACTH and cortisol levels, serotonin, norepinephrine and dopamine.

While the importance of neurotransmitters in behavioral health (including the substance use disorders) is well established, a detailed consideration of how neuroscience implications may inform our understanding of clinical outcomes and applications of NADA acupuncture is beyond the scope of this paper.

Method

All study participants were residents of the highly structured Mecklenburg County Substance Abuse Services Center (SASC). All 167 patients treated in the SASC 28-day treatment program between March 2008 and June 2008 are included in this study. Each patient had the option of self-selecting conventional treatment only or conventional treatment plus NADA acupuncture. Patients had to meet *Diagnostic and Statistical Manual for Mental Disorders (4th ed., DSM-IV, American Psychiatric Association, 1994)* criteria for a current substance use disorder. There were no exclusion criteria. 103 patients received NADA acupuncture plus conventional treatment. 64 patients received conventional treatment only.

In this NADA acupuncture based program patients received 5 bilateral auricular acupuncture points while seated together in a large group of up to 20 patients per treatment session. The 5 specific acupuncture points treated are the auricular sympathetic, shen men, lung, kidney, and liver points [3, 4]. Needles were inserted at the beginning of the treatment hour and generally remained in place for 30 to 45 minutes. Patients could request needle removal at any time.

The acupuncture needles are manufactured by Helio, are sterile, single use, stainless steel shafts of 0.20 mm diameter and 7.0 mm length. The needles have bright fluorescent plastic handles. The acupuncture needles are provided in convenient sterile packages.

Needles are inserted with a brief but steady movement. Ear needles penetrate approximately 1/8 inch, contacting the cartilage if it is present in that location. Needles are twirled 180 degrees for smoother insertion.

Both the NADA acupuncture group and the study hall group were offered twice weekly on Tuesdays and Thursdays. Both groups were offered at the same time each day and were conducted simultaneously. Both groups utilized separate rooms that were located on the same corridor. The group rooms were directly adjacent to each other, and were virtually identical in size, shape, and decor. The conventional treatment group participated in study hall where they had the option to read, write, listen to music or talk softly. All patients were given written and verbal information about NADA acupuncture. All participants provided signed informed consent to participate in the study. Acupuncture detoxification specialists with certificates of training completion from NADA administered all treatment. The Mecklenburg County SASC Institutional Review Board reviewed and approved the study.

Demographic and other background data are presented in Graphs 1 through 4. There are no statistically significant differences between active and control groups when compared on gender, sex, race and SASC program completion. Age is the one variable demonstrating a statistically significant difference between the two comparison groups. Patients had mean age 45 in the conventional treatment group and mean age 39 in the NADA acupuncture plus conventional treatment group (p-value .001).

Data were collected from patients and program staff at baseline, immediately before each treatment hour, and immediately after each treatment hour. Patients in both arms of the study completed a self-report 10-point Likert scale questionnaire. The questionnaire contained the following 7 measures of interest: cravings, depression, anxiety, anger, body aches/headaches, concentration and decreased energy.

[Graphs 1 thru 4]

Statistics

All data collected were entered into a single excel spreadsheet. Data is analyzed utilizing SAS Statistical software, version 9.1. A t-test is used to analyze the interval data. A paired t-test was performed for each of the 7 measures for the conventional treatment group and the NADA acupuncture plus conventional treatment group. The paired t-test compared pre-NADA acupuncture treatment scores to post-NADA acupuncture treatment scores. The paired t-test is also used to compare pre-conventional treatment scores to post-conventional treatment scores. P-values obtained from t-test analysis are used to compare outcomes from the conventional treatment group to the NADA acupuncture plus conventional treatment group. A p-value of less than 0.05 was considered statistically significant.

Results

NADA acupuncture plus conventional group scores measured as percent change from baseline decreased significantly from pre to post treatment for all 7 measures. P-value .0001 is obtained for cravings, depression, anxiety, anger, body aches/headaches, concentration, and decreased energy. There is no statistically significant difference in pre and post scores for the conventional treatment group. When comparing the NADA acupuncture plus conventional treatment group to the conventional treatment group we find a statistically significant difference for all 7 measures as described below. (NOTE: "+" Correlates with improvement and "-" correlates with worsening of the symptom measure):

Cravings mean score (per cent change from baseline)
study hall -14% / Acupuncture +33%, p-value .0001

Depression mean score (per cent change from baseline)
study hall 0% / Acupuncture +38%, p-value .0001

Anxiety mean score (per cent change from baseline)
study hall 0% / Acupuncture +39%, p-value .0001

Anger mean score (per cent change from baseline)
study hall -9% / Acupuncture +36%, p-value .0001

Body aches/Headaches (per cent change from baseline)
study hall 3% / Acupuncture +37%, p-value .0001

Concentration (per cent change from baseline)
study hall -3% / Acupuncture +39%, p-value .0001

Decreased energy (per cent change from baseline)
study hall -2% / Acupuncture +42%, p-value .0001

Discussion

The goal of this pilot study is to examine seven common behavioral health symptoms in a population of patients with substance use disorder diagnoses and to explore whether or not NADA acupuncture is helpful in alleviating symptoms measured. It is essential to understand NADA acupuncture's psychological and social mechanism of action in order to use this modality effectively. Since NADA acupuncture is provided in a well managed group setting the novice NADA acupuncture patient is immediately introduced to a calm and supportive group process.

Patients describe NADA acupuncture needling as a unique kind of balancing experience, as, for example, “I was relaxed but alert.... I was able to relax without losing control” while patients who are depressed or tired often say that they feel less depressed or more energetic. This encouraging and balancing group experience becomes a critically important basis for the entire treatment process and improves patients’ general sense of well-being, and facilitates a readiness to benefit optimally from conventional treatment.

Our results in this pilot study showed that patients improved across all seven common behavioral health symptoms that were measured. Patients with substance use disorder diagnoses clearly struggle with common behavioral health symptoms that may interfere with their ability to receive optimal benefit from conventional treatment. These results suggest that NADA acupuncture is a simple and inexpensive treatment that may help alleviate some of the behavioral health symptoms that can affect individuals with a diagnosis of substance use disorder.

Demographic data for race, gender, sex, and program completion rate did not predict who was likely to self-select for conventional treatment or NADA acupuncture plus conventional treatment. An individual’s age was the only demographic variable that revealed statistical difference between the active group and the control group in that younger subjects were more likely to choose NADA acupuncture in addition to conventional treatment. This suggests that younger subjects might be more comfortable with and open to, participating in integrative medicine approaches.

Residential treatment staff monitored treatment conditions to ensure uniformity and minimize the likelihood of any potential bias. There was no discernable difference in treatment conditions for the active group and control group with the exception of whether or not NADA acupuncture was offered. All residents participated in conventional treatment or NADA acupuncture plus conventional treatment and no other treatment options were offered.

Conclusions

This study showed that NADA acupuncture in combination with conventional treatment for substance use disorder rendered substantial relief of seven common behavioral health symptoms when conventional treatment alone did not. Future work should include long-term outpatient follow-up with NADA acupuncture to determine if the on-going alleviation of common behavior health symptoms with NADA acupuncture can be maintained in a community setting. Additional studies should also evaluate whether improvement in common behavioral

health symptoms associated with the use of NADA acupuncture plus conventional treatment are associated with improvement in the overall severity and course of substance use disorder.

This study has a number of limitations that should be considered in interpreting the findings. The study was not blinded or randomized and the study subjects were self-selected in choosing to participate in NADA acupuncture plus conventional treatment versus conventional treatment alone. Information was not collected in a systematic manner that would allow us to understand why certain patients elected to participate in the NADA acupuncture treatment arm and other patients did not.

In future clinical research, it is likely that isolation of NADA acupuncture as an independent variable will continue to be difficult, if not impossible. This situation is all too familiar in the field of psychiatry where social science, behavioral health, and pharmaceutical interventions come face-to-face with the complexity of “real world” clinical care. The study of NADA acupuncture as an adjunct to conventional behavioral healthcare in traditional psychiatric settings is a simple approach that is easily understood. This approach may lead in a straightforward manner to potential improvements in patient care.

Acknowledgements

North Carolina Mecklenburg County Area Mental Health for making this study possible by providing the funding grant and for welcoming us to conduct this study at the Mecklenburg County Substance Abuse Services Center.

Author Disclosure Statement

No competing financial interests exists for any of the authors.

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