

Reduction in Pain Medication Prescriptions and Self-Reported Outcomes Associated with Acupuncture in a Military Patient Population

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ABSTRACT

Background: Acupuncture is being offered to patients as part of routine medical care in selected military bases in the United States. There is little published information about the clinical outcomes associated with acupuncture in these clinical settings.

Objective: The goal of this research was to assess clinical outcomes observed among adult patients who received acupuncture treatments at a United States Air Force medical center.

Materials and Methods: This retrospective chart review was performed at the Nellis Family Medicine Residency in the Mike O'Callaghan Military Medical Center at Nellis Air Force Base in Las Vegas, NV. The charts were from 172 consecutive patients who had at least 4 acupuncture treatments within 1 year. The main outcome measures were prescriptions for opioid medications, muscle relaxants, benzodiazepines, and non-steroidal anti-inflammatory drugs (NSAIDs) in the 60 days prior to the first acupuncture session and in the corresponding 60 days 1 year later; and Measure Yourself Medical Outcome Profile (MYMOP2) values for symptoms, ability to perform activities, and quality of life.

Results: Opioid prescriptions decreased by 45%, muscle relaxants by 34%, NSAIDs by 42%, and benzodiazepines by 14%. MYMOP2 values decreased 3.50–3.11 ($P < 0.002$) for question 1, 4.18–3.46 ($P < 0.00001$) for question 3, and 2.73–2.43 ($P < 0.006$) for question 4.

Conclusions: In this military patient population, the number of opioid prescriptions decreased and patients reported improved symptom control, ability to function, and sense of well-being after receiving courses of acupuncture by their primary care physicians.

Keywords: acupuncture, military, pain, opioids

INTRODUCTION

SINCE FEBRUARY 2015, family medicine residents at the Nellis Family Medicine Residency in the Mike O'Callaghan Military Medical Center at Nellis Air Force Base in

Las Vegas, NV, have been routinely trained in medical acupuncture. Training consists of a six-step, 300-hour course in medical acupuncture that has been tailored to treat military-specific conditions, such as combat-induced pain and stress. Residents and faculty members at the Family

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Medicine Residency clinic are encouraged to apply the Think Acupuncture First philosophy in their care of patients, whereby acupuncture is prioritized as a primary treatment modality when it is clinically indicated.

This article reports clinical outcomes observed among adult patients who received acupuncture treatments administered at the Nellis Family Medicine Residency clinic by family residents or faculty members.

MATERIALS AND METHODS

For this retrospective cohort analysis, the first 172 adult patients in the patient database who received at least 4 acupuncture treatments were identified. Physicians treated the patients with a variety of acupuncture protocols and techniques, all using ACUS Methods.TM The most common 10 treatments in descending order were: (1) the Auricular Trauma Protocol; (2) Battlefield Auricular Acupuncture; (3) Chinese scalp acupuncture, using the upper one-fifth of the sensory area and the Foot Motor Sensory Area; (4) the Koffman Cocktail; (5) lumbar percutaneous electrical nerve stimulation (PENS); (6) various auricular functional points; (7) Chinese scalp acupuncture, using the frontal triangle pattern; (8) cervical PENS; (9) the Great American Malady treatment; and (10) tendinomuscular meridian treatment with surface release.

Adult patients who receive care at the Nellis Family Medicine Residency clinic routinely complete the Measure Yourself Medical Outcome Profile (MYMOP2). The MYMOP2 is designed to measure the outcomes that the patient considers most important. The patient chooses: (1) one or two symptoms that he or she is seeking help with and considers most important, and (2) an activity of daily living that is limited or prevented by his or her problem. These choices are recorded in the patient's own words and the patient scores the choices for severity (past week) on a 7-point scale. Well-being is scored on a similar scale during the initial and each subsequent administration of the MYMOP2.^{1,2}

This study protocol was approved by the Wilford Hall Ambulatory Surgical Center's institutional review board. For this retrospective cohort analysis, the first 172 adult patients in the patient database who received at least 4 acupuncture treatments were identified. After identifying these eligible patients, the electronic medical records (EMRs) were reviewed to determine all medications prescribed to the patient in the 60 days prior to the first acupuncture treatment, as well as in the same 60 calendar days in the following year. For this patient population, all prescribed medications, whether filled on a military base or in the civilian sector, are recorded in the EMR. Recordings were made of the dose and number of pills prescribed during those two 60-day periods of all opioid medications, muscle relaxants (i.e., cyclobenzaprine, methocarbamol, baclofen, carisoprodol, and tizanidine), benzodiazepines (i.e., clona-

TABLE 1. DEMOGRAPHICS OF A COHORT OF 172 PATIENTS RECEIVING AT LEAST 4 ACUPUNCTURE TREATMENTS

<i>Sociodemographic variables</i>	<i># of patients</i>
Age	Mean: 43 ± 14.2; range: 18–79
Sex	103 females; 69 males
Number of treatments	Mean: 4.8 ± 1.8; range: 4–10
Reasons for treatment (per self-report)	43 Low back pain 25 Back pain 21 Neck pain 16 Knee/leg/ankle pain 11 Headache/migraine 7 Hip pain 5 Anxiety/stress 5 Arm pain 4 Sleep problems 21 Miscellaneous

zepam, diazepam, lorazepam, and alprazolam), and selective serotonin reuptake inhibitors (SSRIs; i.e., fluoxetine, sertraline, citalopram, and escitalopram). After recording the data, all opioid medications were converted to morphine-equivalent units in order to compare all patients equally. Given that there are no equivalent calculations for muscle relaxants, benzodiazepines, or NSAIDs, numbers of pills were reported. Changes in MYMOP2 scores over time were also reported.

RESULTS

Sociodemographic variables and patients' clinical characteristics are summarized in Table 1. The total number of

TABLE 2. MEDICATION USE IN THE 60 DAYS PRIOR TO INITIAL ACUPUNCTURE TREATMENT AND 60 DAYS PRIOR TO FINAL TREATMENT

<i>Types of medication</i>	<i>Before acupuncture</i>	<i>After acupuncture</i>	<i>Absolute (and %) reduction</i>
Opioids (in MMEs) ^a	46,476 ^a	25,620 ^a	–20,586 (–45%)
Muscle relaxants ^b	1779 pills	1181 pills	–598 (–34%)
NSAIDs ^c	1640 pills	948 pills	–692 (–42%)
Benzodiazepines ^d	383 pills	331 pills	–52 (–14%)
SSRIs ^e	870 pills	860 pills	Unchanged

^aMeasured as MMEs.

^bMuscle relaxants included cyclobenzaprine, methocarbamol, baclofen, carisoprodol, and tizanidine.

^cNSAIDs included ibuprofen, sulfasalazine, and naproxen.

^dBenzodiazepines included clonazepam, diazepam, lorazepam, and alprazolam.

^eSSRIs included fluoxetine, sertraline, citalopram, and escitalopram.

MMEs, morphine mg equivalent units; NSAIDs, nonsteroidal anti-inflammatory drugs; SSRIs, selective serotonin reuptake inhibitors.

TABLE 3. SEVERITY OF SYMPTOMS USING THE MYMOP2,^a MEASURED PRIOR TO FIRST ACUPUNCTURE TREATMENT AND FINAL ACUPUNCTURE TREATMENT NEAREST THE 1-YEAR POINT

Question	Before acupuncture	After treatment	P-value
Question 1: Consider how bad your symptom is over the last week and score it by circling your chosen number	3.50 ± 1.48	3.11 ± 1.48	<0.002
Question 3: Now choose one activity (physical, social or mental) that is important to you, and that your problem makes difficult or prevents you doing. Score how bad it has been in the last week.	4.18 ± 1.34	3.46 ± 1.71	<0.00001
Question 4: Lastly how would you rate your general feeling of wellbeing during the last week?	2.73 ± 1.61	2.43 ± 1.49	<0.006

^aScale is 1–6, and lower scores are better.

MYMOP2, Measure Yourself Medical Outcome Profile.

morphine mg equivalents (MMEs) prescribed was 46,476 during the 60 days prior to the patients' first acupuncture treatments and 25,620 during the 60-day period 1 calendar year later. This represents a 45% reduction in prescribed morphine-equivalent units. Reductions in pills prescribed were also observed for muscle relaxers (34%), NSAIDs (42%), and benzodiazepines (14%). See Table 2. Patients also reported significantly better symptom control (3.50–3.11; $P < 0.002$), better ability to function (4.18–3.46; $P < 0.00001$), and improved quality of life (2.73–2.43; $P < 0.006$) after 1 year, as assessed by the MYMOP2. See Table 3.

DISCUSSION

With the exception of a randomized controlled trial of ear acupuncture for acute sore throat conducted at a U.S. Air Force Base,³ there is a paucity of published studies that report clinical outcomes data obtained from a large consecutive sample of patients seen in a military medical center who received 4 or more acupuncture treatments as part of these patients' primary medical care. These findings suggest that acupuncture might be associated with clinically significant reductions in medication use and improvements in clinical outcomes. Study limitations included the lack of a control group, the possibility that factors other than acupuncture could have been responsible for clinical improvements over time, and the possibility that the family physicians caring for these patients might have prescribed fewer medications for these patients because the physicians knew that the patients were receiving acupuncture.

CONCLUSIONS

In this military patient population, the number of opioid prescriptions decreased and patients reported improved

symptom control, ability to function, and sense of wellbeing after receiving courses of acupuncture by the patients' primary-care providers.

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AUTHOR DISCLOSURE STATEMENT

No competing financial interests exist.

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