

ACUPRESSURE VS ACUPRESSURE WITH DIT DA JOW FOR THE RELIEF OF ACUTE DISTAL EXTREMITY PAIN DUE TO DELAYED-ONSET MUSCLE SORENESS

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The primary purpose of this study was to determine if acupressure combined with dit da jow will relieve the pain associated with delayed-onset muscle soreness in less time than using acupressure alone or nothing at all.

This study used 6 male and 12 female (n=18) volunteers from the general population of students at California University of Pennsylvania. Subjects ranged in age from 18 to 28 years old. The subjects were physically active individuals and met the proper criteria for participation in the study.

For the purposes of this study, four instruments were used: the Biodex Dynamometer System and dumbbells in five pound increments from five to 20 pounds to induce delayed-onset muscle soreness (DOMS), the Visual Analog Scale (VAS) to measure perceived pain, a tape measure to measure the girth of the upper arm for swelling and a goniometer to measure active range of motion. Also used in the study was Dit Da Jow made from a 2,000 year old Chinese recipe and various acu-points located on the extremities of the body.

To test the acceptability of all hypotheses, the alpha level was set at .05. A repeated measures ANOVA was used to examine the effects of treatment between and among the groups.

Hypothesis 1

Use of acupressure with dit da jow will reduce the pain associated with acute injury in less time than with the use of acupressure alone or no treatment at all.

Hypothesis 2

Use of acupressure with dit da jow will increase flexion active range of motion, limited during acute injury, in less time than with the use of acupressure alone or no treatment at all.

Hypothesis 3

Use of acupressure with dit da jow will increase extension active range of motion, limited during acute injury, in less time than with the use of acupressure alone or no treatment at all.

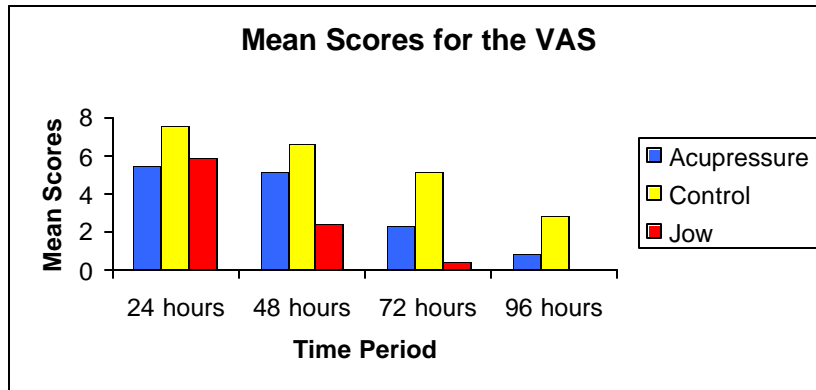
The Biodex dynamometer was set-up to isolate the elbow flexor group and to allow each subject movement through his/her available range of motion. An overlay screen display was used to motivate the subjects to perform with maximal effort. Exercise on the Biodex dynamometer was both concentric and eccentric with the speeds set at 90 degrees per second and 60 degrees per second, respectively. The Biodex dynamometer was visually inspected before each subject performed the required exercise for this study in order to insure accuracy and safety during the study.

Dumbbells were used to exhaust the biceps brachii completely. The subjects were asked to perform bicep curls starting with 20 pound dumbbells until momentary muscle failure followed immediately by 15 pound dumbbells until momentary muscle failure and so on, dropping the poundage by five pounds until reaching momentary muscle failure with the five pound dumbbell. Subjects did four sets of dumbbell bicep curls utilizing this drop set protocol.

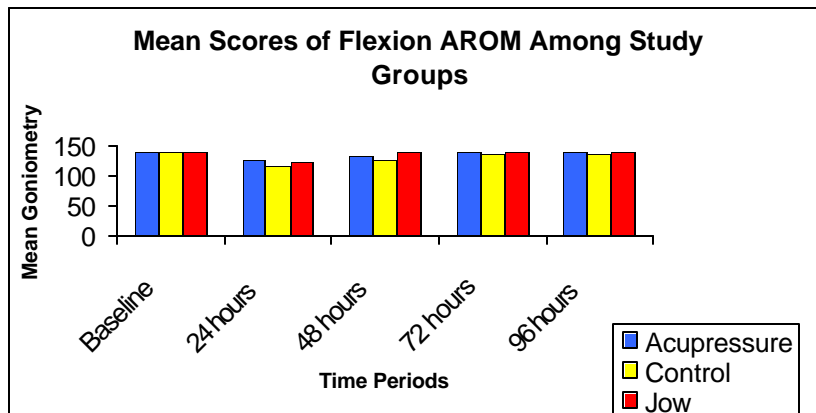
Perceived pain was measured using a Visual Analog Scale. Subjects rated their pain on a line at a point between no pain and severe pain. A goniometer was used to measure the subjects' pain free active range of motion. The stationary arm was laid along the humerus with the axis at the lateral epicondyle of the humerus. The subjects were asked to flex the elbow until pain limited their ability to flex the elbow further. At this point a reading was taken. A tape measure was used to measure the girth of the upper arm, at the belly of the biceps brachii in order to measure for any swelling that may have occurred. Measurement was taken with the subject's arm relaxed and hanging at the subject's side.

Conclusions

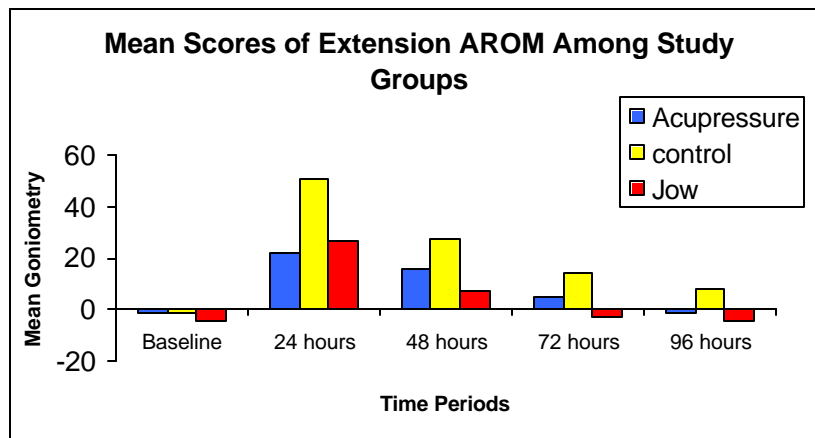
Hypothesis 1 was supported. A significant effect was found within periods (Wilks' Lambda(3,13) = 79.37, $P < .01$). A significant effect was also found in period by group (Wilks' Lambda(6,26) = 11.06, $P < .01$).



Hypothesis 2 was supported. A significant effect was found within periods (Wilks' Lambda(4,12) = 32.69, $P < .01$). A significant effect was also found in period by group (Wilks' Lambda(8,24) = 5.43, $P < .01$).



Hypothesis 3 was supported. A significant effect was found within periods (Wilks' Lambda(4,12) = 13.22, $P < .01$). A significant effect was also found in period by group (Wilks' Lambda(8,24) = 4.23, $P < .01$).



Recommendations For Future Studies

If further studies are done on the use of acupressure in Sports Medicine, a larger sample with equal male and female subjects should be examined for gender differences.

A study should be done on the use of Chinese herbal liniments in comparison with liniments used in the United States today, such as Flex-all. Further studies should be done on an equal number of subjects who are right arm dominant and left arm dominant to examine differences.