

## A study of electroacupuncture treatment in patients of primary dysmenorrhea

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### Abstract

**Background:** Dysmenorrhea is a very common problem in females which causes considerable physical as well as psychological distress to them. Pharmacological treatments available for dysmenorrhea are often not effective or associated with adverse effects. Acupuncture is a safe and effective alternative free from side effects.

**Aims and Objective:** the purpose of this study was to determine whether acupuncture is effective in reducing intensity and duration of pain in patients of primary dysmenorrhea.

**Material and Methods:** Hundred patients of primary dysmenorrhea between the age group of 14-45 years were taken for the study. Pain was assessed using Visual Analogue Scale (VAS) before treatment, after each sitting and after completion of treatment as well as after 3 months follow up. Data was analyzed using a standard statistical test.

**Results:** Significant reduction in pain intensity was seen after treatment ( $p < .001$ ) which was maintained after 3 months follow up.

**Conclusion:** This study showed that acupuncture is effective in treatment of patients with primary dysmenorrhea. More powerful studies with larger number of subjects should be done for confirming the role of acupuncture treatment in dysmenorrhea.

**Keywords:** Dysmenorrhea, Electroacupuncture, VAS

### Introduction

Dysmenorrhea or painful menstruation involves menstrual periods that are accompanied by either sharp or dull aching pain usually in the pelvis or the lower abdomen. It is reported by around 25% of women, and around 90% of adolescents<sup>(1,2)</sup>. Dysmenorrhea is a major cause of restriction of activity<sup>(3,4)</sup> as well as absence from school and work among young women<sup>(5)</sup> and also affects quality of life in about 10% of cases.<sup>(6)</sup>

Primary dysmenorrhea refers to menstrual pain that occurs in otherwise healthy women<sup>(7)</sup>. This type of pain is not related to any specific problem with the uterus or the other pelvic organs. Secondary dysmenorrhea is the menstrual pain that is attributed to some underlying disease process or structural abnormality either within or outside the uterus e.g. Leiomyoma, Pelvic Inflammatory Disease, endometriosis. The distinction is made for therapeutic purpose because in cases of secondary dysmenorrhea a specific treatment has to be given.<sup>(8)</sup>

Acupuncture has been used to treat dysmenorrhea, and a summary of the evidence from randomized controlled trials (RCTs) is given in two systematic reviews. A Cochrane systematic review published in 2002 included one small trial of acupuncture<sup>(9)</sup>. Another review included 30 RCTs of acupuncture-related modalities<sup>(10)</sup>. Acupuncture is an ancient art of healing that dates back to at least 2,500 years. It has been very popular and is widely practiced in china & many other Asian countries. Acupuncture accentuates on the natural healing of the body. It involves stimulating

points by the insertion of very fine, solid, metallic needles. Today in Japan, acupuncture is an integral part of health care system offered in conjunction with medicines. In North America acupuncture is used in pain management therapy in many clinics & hospitals. Traditional acupuncture has been documented as successful by Walker and Katz<sup>(11)</sup> and Steinberger<sup>(12)</sup>. WHO has recommended use of acupuncture in the treatment of a wide range of medical problems including gynecological.

Electroacupuncture, the application of a pulsating electrical current to acupuncture needles as a means of stimulating the acupoints, was developed in China as an extension of hand manipulation of acupuncture needles around 1934. The aim of the present study was to determine whether acupuncture can effectively treat women affected by primary dysmenorrhea. Efficacy was measured in terms of pain control as assessed on VAS.

### Material and Methods

The study was conducted in the Department of Physiology, J.N. Medical College, A.M.U, Aligarh. Hundred (100) females of dysmenorrhea were taken from the OPD of obstetrics and gynecology for the study. Before conducting the study, informed written consent was taken from each patient. Ethical clearance was obtained from the institutional ethical committee. After detailed history and thorough clinical examination assessment of the patient for pain intensity pre and post treatment was done with the help of Visual Analogue

Scale (VAS). The VAS is composed of a 10-cm horizontal line with two end points marked as no pain and worst pain ever. The subject is asked to mark a point on the scale that represents her pain level.

**Study design:** A Pre- Post Interventional Study.

**Inclusion criteria:** patients suffering from primary dysmenorrhea.

**Exclusion criteria:** Women were not eligible if they had secondary dysmenorrhea. Patients were examined by the study gynecologist to rule out secondary dysmenorrhea or were asked to show recent records from a gynecologist confirming the diagnosis of primary dysmenorrhea. Women were allowed to continue taking oral contraceptives or pharmacological pain relief if required.

**Acupuncture Protocol:** The subjects were given acupuncture at AP points: bilateral LI 4 (Hegu), bilateral ST 36 (Zusanli) and SP 6 (Sanyinjiao). Each subject was given 10 sessions. Each session consisted of 4 consecutive days of acupuncture sittings 7 days before the expected date of menstruation. Each sitting was of 20 minutes duration. The kind of acupuncture used was electroacupuncture i.e. instead of manipulating needles with hand weak current (0.6 milliamperes) was used to stimulate the acupuncture points.

**Statistical Analysis:** P value was analyzed using standard statistical method. Mean and Standard Deviation ( $\pm$ SD) of pretreatment and post treatment values of VAS were calculated. All the patients completed treatment and follow up.

## Result

All the patients experienced marked decrease in pain intensity of dysmenorrhea after each session. Reduction in pain intensity was more after completion of all 10 sessions of acupuncture treatment as compared to after first few sessions.

Comparison of pre and post treatment pain intensity on VAS was found to be highly significant statistically.

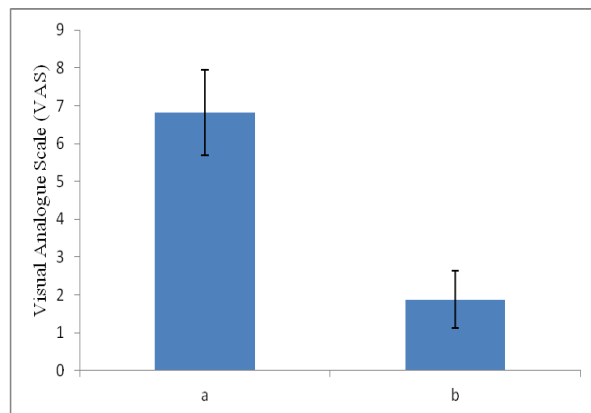
Significant improvement in pain was observed in all patients with no recurrence of symptoms in three months of follow up.

**Table 1: Mean $\pm$ SD of pretreatment and post treatment values on VAS for pain intensity**

Parameters	Mean $\pm$ SD	Range
Pretreatment value on VAS	6.81 $\pm$ 1.13	5-8.5
Posttreatment value on VAS	1.88 $\pm$ 0.76	0-3

Where,  $p < 0.001$

Table 1 shows mean  $\pm$  SD of pretreatment and post treatment (completion of ten acupuncture sessions) values on VAS for the pain intensity P value came out to be  $< 0.001$  which is highly significant.



**Fig. 1: Shows comparison of pain intensity before treatment (a) and after treatment (b)**

Fig. 1 shows bar chart representation of pretreatment and posttreatment values of pain intensity on VAS in hundred patients of primary dysmenorrhea.

## Discussion

Acupuncture is very promising treatment for dysmenorrhea especially for those patients who refuse to take NSAIDs and OCPs. Acupuncture has been proved to be effective and safe for the treatment of dysmenorrhea in a number of studies. Steinberger used acupuncture at four acupuncture points for five consecutive days before the menstrual cycle of 48 women<sup>(13)</sup>. Of those 48 subjects, 58.3% had total cessation of pain before and during menstruation, and 25% had greatly decreased symptoms. The pain relief or pain reduction lasted up to six months for these women<sup>(13)</sup>.

Another study was conducted by Helms using 43 dysmenorrheic women. Although the results of the study were not significant statistically, more patients in the real acupuncture group showed improvement as compared to the control group and placebo acupuncture group. *Improvement* was defined as an average post treatment score of less than half of the pretreatment pain score<sup>(14)</sup>. A trial compared acupuncture with ibuprofen and found that acupuncture was more effective for pain relief than ibuprofen ( $P < .03$ )<sup>(15)</sup>. A recent observational study found a substantial reduction in pain and the use of NSAIDs by 87% of women, and concluded acupuncture may have a role with the management of dysmenorrhea for women for whom oral contraceptives or NSAIDs are contra-indicated<sup>(16)</sup>.

The present study demonstrates that acupuncture is highly effective in the treatment of dysmenorrhea. Symptomatic relief was noted after each session. Our findings are collaborated with the findings in a study were benefit with the treatment with real acupuncture were far superior than Sham acupuncture<sup>(17)</sup>. In another study it was found that dysmenorrhea can be treated successfully in not less than 80% of cases<sup>(18)</sup>. Relief of pain by acupuncture in patients of dysmenorrhea is also seen in other studies<sup>(19,20)</sup>.

Electro acupuncture with relative specificity of acupuncture points could influence some genetic expression in the brain thereby normalizing the secretion of certain hormones such as gonadotropin releasing hormone, luteinizing hormone and estradiol<sup>(21)</sup>. Electro acupuncture stimulation has also been found to elevate levels of 5 hydroxy tryptamine(5HT) in the raphe nucleus which enhances acupuncture analgesia through descending inhibitory control mechanism.

### Conclusion

In the present study significant reduction in pain intensity was noted after electro acupuncture treatment as assessed by pre and post VAS values and there was no recurrence of symptoms in 3 months of follow up. This study proves that acupuncture treatment is effective in dysmenorrhea.

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