Effects of acupressure at the Sanyinjiao point (SP6) on the process of active phase of labor in nulliparas women

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Abstract

Introduction. The reduction of the duration and pain of the active phase of labor is a very important issue and therefore always under serious investigation.

Objective. The purpose of the present study is to evaluate the effect of acupressure at the Sanyinjiao point (SP6) on the duration and pain of the active phase of labor in nulliparas women.

Method. A single blind randomized clinical trial was performed on 120 eligible nulliparas women who were at the beginning of active phase of labor (3–4 cm dilatation of cervix plus proper uterine contractions). The women were randomly assigned into two groups. The case group (n = 60), received acupressure at Sanyinjiao point (above the ankle), for 30 min during contractions. In the control group (n = 60), simply a touch at this point without massage was performed. Two hours later a second pelvic examination was performed and in the absence of good forceful contractions oxytocin in the classical form was infused. Finally, duration of active phase, severity of pain (using the Visual Analogue Scale), the amount of necessary oxytocin and necessity to administer oxytocin and the route of delivery were compared between the two groups and statistical analyses were performed using SPSS 15.

Results. The mean duration of active phase was shorter in the case group (252.37 ± 108.50 min vs. 441.38 ± 155.88, p = 0.0001). Six patients (10%) in the case group and 25 patients (41.7%) in the control group delivered via cesarean section (p = 0.0001). The severity of pain in the case group was less than the control group (5.87 ± 1.77 vs. 6.79 ± 1.52, p = 0.003). Twenty-five women (41.7%) in the case group and 38 women (63.3%) in the control group needed oxytocin (p = 0.017) The amount of necessary oxytocin in the case group was less than the control group (73.33 ± 97.19 ml vs. 126.6 ± 97.19 ml, p = 0.003).

Conclusion. Acupressure at Sanyinjiao point (SP6) reduced the duration and severity of pain of the active phase of labor, cesarean section rates, and necessity and amount of oxytocin.

Keywords: Acupressure at Sanyinjiao point (SP6), active phase of labor, delivery, pain, oxytocin cesarean section, alternative medicine, complementary medicine

Introduction

Birth is one of the most important events in the mother’s life and is a physiological process. Any factors that can help make labor and delivery a process with minimal handling, of shorter duration, and less painful, are always under consideration. Any methods which can reduce the delivery time and oxytocin use can help the parturient and make labor more comfortable and less stressful.

Pain relief in labor presents unique problems. Labor begins without warning [1] and selecting a very safe method for reducing labor pain is important. Many women prefer non-pharmacological sedation for their labor pain, therefore pain relief should depend on the needs and desires of the women.

Recent research focusing on non-pharmacological complementary and alternative interventions for labor pain and the reduction of delivery time [2,3] include acupuncture [4,5], acupressure [2,3], transcutaneous electrical nerve stimulation (TENS) [6], and other less common methods [7].

Acupuncture and acupressure are based on traditional Chinese medicine and share the main principle of opening and harmonizing an obstructed meridian by stimulating surrounding acupuncture points [7].
Experimental studies on acupressure and acupuncture have demonstrated their effectiveness in reducing discomfort through sedative and analgesic effects [8,9].

Many studies have shown that acupuncture is effective for pain relief in general [8–10] and acupuncture of specific sites such as Sanyinjiao (SP6) point, has been reported to reduce labor pain and delivery time [2,11].

The SP6 acupoint is the junction point of the liver, spleen, and kidney meridians and, based on principles of traditional Chinese medicine, it is proposed to strengthen the spleen, resolve and expel dampness and restore balance to the Yin and blood, liver and kidneys [7].

This acupuncture point is commonly used for reproductive conditions in women such as labor induction, pain relief during labor and dysmenorrhea [11], and is illustrated in Figure 1 [7].

The advantage of utilizing acupressure therapy instead of acupuncture as a good intervention has been proposed in the literature as a non-invasive method that offers comparable effects to acupuncture therapy [12,13]. In fact acupressure is similar to acupuncture but much more simple [7].

Acupressure is a non-invasive, cost-free, safe, and simple method, and if it could be shown to be useful for reducing labor time and cesarean section rates as well as affording pain relief during labor, it would be a useful option to the obstetrical staff.

The studies by Lee et al. [2] and Chang et al. [3], have shown that acupressure at the point of Sanyinjiao (SP6), can reduce the delivery time and cesarean section rates and labor pain.

There are numerous studies about the effects of acupressure at the point of Sanyinjiao (SP6) for the initiation of labor [14,15,4] and reduction of pain during labor [5], but the studies were not comprehensive enough, therefore this study has been planned to evaluate the effect of acupressure on the process of labor and cesarean section rate and pain relief during labor.

Materials and methods

A single blind randomized clinical trial was performed in Akbarabadi Teaching hospital in Tehran, Iran, between March 2007 and September 2007 on nulliparas women who had been admitted to the labor ward for delivery.

Inclusion criteria were as follows: aged between 18 and 35 years, nulliparas, singleton, cephalic presentation, gestational age between 37 and 41 weeks of pregnancy (according to reliable last menstrual period (LMP) and ultrasound confirmation of first trimester), intact membrane, cervical dilatation of 3–4 cm and proper contractions (at least three forceful contractions with a duration of 45–60 s in 10 min).

Exclusion criteria were: any sedation during labor, abnormal or dead fetus, any sign of fetal distress, meconium passage, previous hysterotomy or uterine scar, any medical or surgical complications of pregnancy and any drug use except for usual supplements, vaginal bleeding and high risk pregnancies.

The women were randomly (four parts, block random using sealed, sequentially distributed envelopes to which the letters A, B, C, and D had been allocated: the letters A and C to the case group and the letters B and D to the control group; the patients chose the envelopes which were opened by the investigator, and according to the letters, the group of patients was determined) divided into two groups.

In the case group (n = 60), acupressure at the Sanyinjiao point was performed by the investigator during the contractions for a total duration of acupressure of 30 min, and in the control group (n = 60), just the touch of this point by the same investigator was performed. The severity of pain was calculated using Visual Analogue Scale at the end of intervention in all patients of the two groups. The patients were then monitored continuously for
duration and intensity of contractions, fetal heart rate, and progress of labor. The basal cervical dilatation of all women of the two groups was 3–4 cm.

Two hours after the beginning of the trial a second pelvic examination was performed by the co-worker of the investigator who was blinded to the group of patients, and in the absence of forceful and effective contractions (at least three forceful contractions with a duration of 45–60 s in 10 min) oxytocin was infused in a classical manner (low dose). No sedation was used for the patients. The patients were monitored until delivery. Then the duration of active phase of labor, severity of pain during this phase, delivery route, necessitation of use of oxytocin and the amount of oxytocin, neonatal weight and Apgar score were compared between the two groups.

Statistical analysis was performed using SPSS 15. Student’s t test and Chi square test were used.

Results

The patients of the two groups did not show significant difference according to age, gestational age, body mass index (BMI), educational status, severity of pain before intervention, and neonatal weight and Apgar score (Tables I and II). The mean duration of active phase was shorter in the case group (Table III). Also the number of cesarean deliveries, severity of labor pain, necessity and amount of oxytocin were less in the case groups (Table III).

Discussion

In this study, acupressure at the Sanyinjiao point could reduce the duration and pain severity of the active phase of labor. In addition, the number of cesarean deliveries and the occasions when oxytocin was required were decreased. In the study by Lee et al. [2], the effect of SP6 acupressure on labor pain and delivery time of women in labor was studied. It was found that labor pain and duration of labor were less in the SP6 acupressure intervention group.

The conclusion was that SP6 acupressure is effective for decreasing labor pain and shortening the length of delivery time which indicates that the results of this study are compatible with the present study.

Chang et al. [3], evaluated the cesarean section rates according to Sanyinjiao (SP6) acupressure for women who were in labor. Their finding showed that 30 min of SP6 acupressure was effective in decreasing the cesarean section rate, therefore they concluded that this method could be applied as an effective intervention during labor. In this study, course of labor was not evaluated, and its result is compatible with the present study. SP6 acupressure may reduce the pain of dysmenorrhea too, and also may reduce the levels of nor-epinephrine [16], and thus by similar mechanism can decrease the labor pain.

In one study [8], the effect of acupressure on low back pain was evaluated. They found that acupressure was effective in reducing low back pain in terms of disability, pain scores, and functional status, and remained beneficial for up to 6 months.

All of these studies have confirmed the effect of acupressure on pain, and printed material on Sanyinjiao pressure to lessen labor pain for women has been developed as formal didactic instruction using the same content [17].

A review [18] looked at currently available evidence supporting the use of alternative and complementary therapies for pain management in labor. They concluded that acupressure and hypnosis may be beneficial for the management of pain during labor; however, the number of women studied has been small and few other complementary

Table I. Characteristics of the two groups.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Case group</th>
<th>Control group</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age, years (mean ± SD)</td>
<td>23.17 ± 4.54</td>
<td>23.16 ± 4.6</td>
<td>0.447</td>
</tr>
<tr>
<td>Maternal weight, kg (mean ± SD)</td>
<td>77.24 ± 10.35</td>
<td>75.18 ± 10.31</td>
<td>0.213</td>
</tr>
<tr>
<td>Maternal height, cm (mean ± SD)</td>
<td>156.85 ± 4.47</td>
<td>155.76 ± 4.26</td>
<td>0.506</td>
</tr>
<tr>
<td>BMI (mean ± SD)</td>
<td>31.43 ± 4.15</td>
<td>31.00 ± 4.19</td>
<td>576.0</td>
</tr>
<tr>
<td>Gestational age, weeks (mean ± SD)</td>
<td>38.7 ± 1.4</td>
<td>38.5 ± 1.2</td>
<td>0.597</td>
</tr>
<tr>
<td>Pain severity, before the procedure (mean ± SD)</td>
<td>6.18 ± 1.01</td>
<td>5.85 ± 1.40</td>
<td>0.318</td>
</tr>
<tr>
<td>Neonatal weight, g (mean ± SD)</td>
<td>3009 ± 209</td>
<td>3012 ± 281</td>
<td>262.0</td>
</tr>
</tbody>
</table>

Table II. Level of education in the two groups.

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Case</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Primary school</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Secondary school</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>High school</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>University</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

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therapies have been subjected to proper scientific study.

In conclusion, it seems that alternative therapy including acupressure may be effective for reducing labor and delivery time and pain. Based on the findings of present and previous studies it is recommended that more trials with greater sample size to find out the ideal method and ideal point in acupressure for obstetrical purpose are performed. It may then become a safe, non-invasive, easy, self-administered, and non-expensive method for reducing the delivery time and labor pain.

Acknowledgements

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References


Table III. The characteristics of the two groups.

<table>
<thead>
<tr>
<th></th>
<th>Case group</th>
<th>Control group</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active phase duration</td>
<td>252.37±108.50</td>
<td>441.38±155.88</td>
<td>0.0001</td>
</tr>
<tr>
<td>Cesarean section, n</td>
<td>6(10%)</td>
<td>25(41.7%)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Pain severity, mean</td>
<td>5.87±1.77</td>
<td>6.79±1.52</td>
<td>0.003</td>
</tr>
<tr>
<td>Necessity to oxytocin</td>
<td>25(41.7%)</td>
<td>38(63.3%)</td>
<td>0.017</td>
</tr>
<tr>
<td>Amount of oxytocin</td>
<td>73.33±97.19</td>
<td>126.6±97.19</td>
<td>0.003</td>
</tr>
<tr>
<td>Apgar min 1 (mean)</td>
<td>8.98±0.13</td>
<td>8.90±0.30</td>
<td>ns</td>
</tr>
<tr>
<td>Apgar min 5 (mean)</td>
<td>9.98±0.13</td>
<td>9.90±0.30</td>
<td>ns</td>
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