Effect of Acupressure in Relieving post-menopausal Hot Flashes

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ABSTRACT

Background: Hot flashes occurred in the majority of post-menopausal women. About two thirds of all women experienced hot flashes. Having hot flashes may decrease a woman's quality of life by decreasing quality of sleep and aggravating fatigue and depression. Non-pharmacological techniques may be effective in relieving post-menopausal hot flashes. Purpose of the study: To investigate the effect of acupressure in relieving post-menopausal hot flashes. Methodology: Thirty post-menopausal women complained from hot flashes for at least 3 months before starting the study, participated in this study. Their ages ranged from 50 to 60 years old and their body mass index (BMI) did not exceed 30 kg/m$^2$ while the level of Follicle Stimulating Hormone (FSH) was more than 40 mIU/ml. They were treated by acupressure on 10 acupoints for 6 weeks, 3 sessions / week, each session lasted 20 minutes. Assessments: Hot flashes frequency / 24 hours and intensity. Also, the level of (FSH) were evaluated before and after 6 weeks of the treatment. Results: The obtained results showed a statistically highly significant ($P < 0.0001$) decrease in hot flashes frequency / 24 hours, intensity and FSH level with percentages of improvement equal 52.99%, 52.66% and 16.06% respectively between pre and post treatment values. Conclusion: It could be concluded that acupressure can be used as one of the conservative, painless and effective non-pharmacologic method in relieving post-menopausal hot flashes. Key words: Acupressure, Non-pharmacological techniques, Post-menopausal, Hot flashes.

INTRODUCTION

When a woman is around 50 years old, the secretion of the ovarian hormones estrogen and progesterone decreases, and eventually the menstrual bleedings stop. This period in life is called the menopause. Menopause is a natural biological process, not a medical illness that defined as permanent end of menstruation and fertility which occur 12 months after last menstrual period. It caused by natural decline of reproductive hormones, that ovaries start making less estrogen and progesterone (the hormones that regulate menstruation). Common menopausal symptoms included menstrual irregularities, hot flash and night sweats, mood swing, headache, insomnia, vaginal dryness, urinary problems, weight gain, memory and cognitive change and fatigue. The dangerous symptoms are heavy bleeding, heart palpitation, depression and high blood pressure. Vasomotor episodes with hot flashes and night sweating are the most prevalent complaints related to menopause. A hot flash is described as a feeling of intense heat in the face, neck and chest. It lasts on average four minutes, with a range from a few seconds up to 10 minutes or more. About two thirds of all women experience hot flashes, and 10 – 20 percent of these find the flashes very distressing. Hot flashes occur in the vast majority of post-menopausal women. An extensive questionnaire study of 506 women found that 87% had daily hot flashes. Hot flashes are episodic and usually accompanied by nausea, dizziness, headache, palpitations, diaphoresis or night sweats. Menopausal hot flashes make most of women seek medical care during the menopausal transition. Menopausal hot flashes are related to a psychological or mental disorder in menopausal women and the hormonal changes in these women may be the underlying mechanism. Oestrogen is the most effective treatment for vasomotor dysfunction in most women and reduced hot flash frequency with about 75%-80%, compared with placebo.

Most menopausal women have difficulty in stopping hormone replacement therapy due to the severe menopausal symptoms. Although it historically has been used as the standard treatment for hot flashes many women choose not to initiate this treatment because of its potential health risks and side
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However, recent research has shown that long term treatment with hormones increases breast-cancer risks\(^3\), and oestrogen therapy initiated 10-15 years after menopause increases the risk of coronary heart disease and stroke. The risks of adverse effects is related to duration of use, dose, formulation and pre-existing morbidity\(^16\). Concerns about the potential adverse effects of oestrogen have led to increased interest in non-hormonal therapies for menopausal symptoms\(^8\).

Herbal remedies such as black cohosh and vitamin E have been used but little evidence exists for any effectiveness of these therapies\(^15\). Acupressure is a mean of manipulating the same acupoints that are used in acupuncture, but without the needles. Instead of needles, acupressure involves the application of manual pressure (usually with the fingertips) along the meridians to unblock energy blockages and reintroduce the optimal flow of Ki, to maintain physical and mental well being, treat disease, or alleviate discomfort\(^5\). Clinical studies performed by scientists in the USA, Canada, Europe and Asia, it has been proven that acupressure can replace chemical treatments to alleviate several physical and emotional ailments. Acupressure helps to boost the metabolism, reduce cravings, regulate the body's temperature, strengthen general vital energy, fight fatigue, treat headaches and nausea. Acupressure works on an emotional level too. It stabilizes mood swings and drastically decreases irritability, anxiety, tension and fear. It's also a great way to calm the mind and bring about a feeling of serenity. Acupressure does not involve any intake or mechanical manipulation. It has no side effects, and cannot overwhelm or flood the body. Its core function is to strengthen the body's own self-healing capabilities\(^5\). Studies showed that auricular acupressure significantly relieve the severity and frequency of menopausal hot flashes. The levels of FSH decreased significantly and the level of estradiol 2 (E2) increased significantly. The increased levels of FSH and the lowered level of E2 are mainly associated with hot flashes during the menopausal transition\(^11\).

As hot flashes are the most common problem for post-menopausal women, it is important to find effective, non-pharmacological treatment to relieve their hot flashes. This study is a trial to discover the effect of acupressure on post-menopausal hot flashes, trying to find a new method of treatment for post-menopausal women to decrease the annoying symptom during menopause and to avoid the negative side effects of hormone therapy.

### SUBJECTS, MATERIALS AND METHODS

Thirty post-menopausal women were diagnosed with postmenopausal hot flashes, they were selected from the gynecological outpatient clinic of Kasr-Aini hospital.

Inclusive criteria:
- All subjects had suffered from post-menopausal hot flashes for at least three months before starting the study.
- Their ages ranged from 50 to 60 years old.
- Their body mass index (BMI) did not exceed 30 kg/m\(^2\).
- The level of thyroid-stimulating hormone (TSH) was normal and the follicle stimulating hormone (FSH) concentration was > 40 mIU/ml.
- All subjects were referred from gynecologists, after medical examinations and confirmation of the diagnosis.
- A written consent form was signed from all subjects before starting treatment.

Exclusive criteria:
- Women who suffered from other organic diseases of the reproductive system.
- Women who taken any drugs containing hormones or affecting the cardiovascular system during the previous 6 months.
- Women who were cigarette smoking.
- Women who had hypertension.

### Instrumentations

1. Registration forms for hot flashes: It was used to assess frequency and intensity of hot flashes\(^4\).
2. Weight-Height Scale: It was used to measure the body weight and height of each woman in the study to calculate the body mass index (BMI).
Measurements
A full history was taken from each patient before starting the study according to the items of the recording data sheet. Each patient was instructed carefully about the evaluation procedure.
- Serum level of FSH: The levels of follicle stimulating hormone (FSH) was measured before and after the treatment programme.
- Hot flashes frequency and intensity: The participants recorded the numbers of hot flashes in a daily diary. They scored the mean daily hot flash intensity on a scale of zero to 10, where zero represents no bother at all and 10 represents the worst possible intensity of flashes. The diaries were administered for one week during the qualifying period, and for one week at 6th week of the intervention period.

Methods:
Thirty patients were treated by acupressure on 10 acupoints for 6 weeks, three sessions/week, each session lasted 20 min.

The patient was in a comfortable position. After the skin was routinely disinfected and the acupoints were carefully localized, moderate pressure was directed on 10 acupressure points with thumb at a 90 degree angle from the surface of skin, hold for 1 minute and release for 1 minute.

Acupressure points were:
Sanyinjiao (sp6):
One of the six important distal points. General tonification point. All the three Yin channels of the leg meet at this point.
Location: 3 cun above the tip of medial malleolus on the medial border of the tibia.

Hegu (LI.4):
(Hoku) Yuan-source point, one of the six important distal points.
Location: It is situated in the web between the forefinger and the thumb on the dorsal (posterior) aspect of the hand, and may be located in relation to the the motor point of the adductor policies and of the first dorsal interosseous muscle respectively. It functions to clear heat in the upper and middle Jiao.

Quchi (LI.11):
Homostatic point. It has been acknowledged to produce Hypothermia in normal subjects.

Location:
- At the outer end of the elbow crease when the elbow is semiflexed.
- Midway between chize (Lu.5) and the lateral epicondyle of the humerus, when the elbow is semiflexed.

Fengchi (GB 20):
Location: In the depression medial to the mastoid process between the origin of the trapezius and sterno-mastoid muscles. It works to regulate the function of the liver and remove heat from the head and eye, based on the ancient acupuncture records.
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Gall Bladder 20

Taixi (K.3): Yuan-source point
Location: Mid way between the prominence or tip of the medial malleolus and the medial border of the tendo-Achillis.

Kidney 3

Guanyuan (CV 4):
Alarm point of the small Intestine (Mu-Front). It is important acupoint on the conception vessel and functions to reinforce kidney Qi. (Sp6) and (CV 4) have been found to modify the gonadal hormone levels.
Location: In the front midline, 3 cun below the umbilicus, 2 cun above (CV 2).

Dazhui (Du 14):
Has been found to produce hypothermia in normal adult.
Location: On the back midline, between the dorsal spines of the 7th cervical (Vertebra prominence) and the 1st thoracic vertebra.

Zingong (Ex-ca1):
Location: On the lower abdomen, 4 cun below the center of the umbilicus and 3 cun lateral to Zhongji (Ren 3).
It is an important point for treating female disorders.

Fuliu (KI7):
Location: On the medial side of the leg, 2 cun directly above (KI3), anterior to the Achilles tendon.
It can regulate kidney Qi and sweating.
Fuliu (KI 7)

Location: Immediately above the midpoint of the superior border of the pubic Symphysis. It is specially indicated in Genito-urinary disorder.

Qugu (CV 2)

Statistical Analysis:

The collected data was statistically analyzed using t-test for comparing between before and after the treatment programme.

I – Descriptive statistics:
- Mean
- Standard deviation
- Percentage

II – Significance:

Significance level of 0.05 was used throughout all statistical tests in this study. P-value < 0.05 indicated significant results, P-value < 0.01 indicated highly significant results.

### ANALYSIS OF RESULTS

Hot flashes frequency /24 hours: The mean value of hot flashes frequency /24 hours for patients before starting the study was 12.70 ± 5.14 and it was decreased after the end of the treatment programme to 5.96 ± 3.09. This statistical difference revealed a highly significant (P < 0.0001) decrease with percentage of 52.99 % improvement at the end of the program.

**Table (1): Mean values of hot flashes frequency/24 hours for patients pre and post treatment**

<table>
<thead>
<tr>
<th>Hot flashes frequency /24 hours</th>
<th>Pre treatment</th>
<th>Post treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>12.70</td>
<td>5.96</td>
</tr>
<tr>
<td>±SD</td>
<td>±5.14</td>
<td>±3.09</td>
</tr>
<tr>
<td>Mean difference</td>
<td>6.74</td>
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</tr>
<tr>
<td>Percentage of improvement</td>
<td>52.99 % decrease</td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>t-value</td>
<td>14.89</td>
<td></td>
</tr>
<tr>
<td>P-value</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>HS</td>
<td></td>
</tr>
</tbody>
</table>

*SD: standard deviation, P: probability, HS: highly significant, DF: degree of freedom

**Fig. (1): Mean values of Hot flashes frequency /24 hours for patients pre and post treatment.**

Hot flashes intensity: The mean value of hot flashes intensity for patients before starting the study was 7.33 ± 1.53 and it was decreased after the end of the treatment program to 3.46 ± 1.13. This statistically difference revealed a highly significant (P<0.0001) decrease with percentage of 52.66 % improvement at the end of the program.
Table (2): Mean values of Hot flashes intensity for patients pre and post treatment.

<table>
<thead>
<tr>
<th>Hot flashes intensity</th>
<th>Pre treatment</th>
<th>Post treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.33</td>
<td>3.46</td>
</tr>
<tr>
<td>±SD</td>
<td>±1.53</td>
<td>±1.13</td>
</tr>
<tr>
<td>Mean difference</td>
<td>3.87</td>
<td></td>
</tr>
<tr>
<td>Percentage of improvement</td>
<td>52.66 % decrease</td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>29</td>
<td></td>
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<tr>
<td>t-value</td>
<td>24.61</td>
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<tr>
<td>P-value</td>
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</tr>
<tr>
<td>Significance</td>
<td>HS</td>
<td></td>
</tr>
</tbody>
</table>

*SD: standard deviation, P: probability, HS: highly significant, DF: degree of freedom

Fig. (2): Mean values of Hot flashes intensity for patients pre and post treatment.

DISCUSSION

Menopause is the physiologic cessation of ovarian function and menstrual flows that occurs with advancing age in all women. Menopausal symptoms are the time when the body reacts to dropping levels of estrogen and other hormones.

Hot flashes occur in the vast majority of post-menopausal women. An extensive questionnaire study of 506 women found that 87% had daily hot flashes. Hot flashes are episodic and usually accompanied by nausea, dizziness, headache, palpitations, diaphoresis or night sweats. Having hot flashes may decrease a woman's quality of life by decreasing the quality of sleep and aggravating fatigue and depression.

This study was conducted to determine the effect of acupressure on hot flashes severity, frequency and also the level of FSH which were assessed before and after the treatment program. Thirty patients after menopause complained from very intense hot flashes (diagnosed by gynecologist/physician) were selected from gynecological out patient clinic of Kasr Aini general hospital. Their ages ranged from 50 to 60 years old and their level of FSH was more than 40 mIU/ml.

The result of this study showed that the mean value of hot flashes frequency/24 hours for patients before starting the study was 12.70 ±5.14 and it was decreased after the end of the treatment program to 5.96 ± 3.09. This statistically difference revealed a highly significant (P<0.0001) decrease with percentage of 52.99 % improvement at the end of the program. The mean value of hot flashes

Table (3): Mean values of Level of FSH for patients pre and post treatment.

<table>
<thead>
<tr>
<th>Level of FSH</th>
<th>Pre treatment</th>
<th>Post treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>67.4</td>
<td>56.57</td>
</tr>
<tr>
<td>±SD</td>
<td>±14.97</td>
<td>±14.76</td>
</tr>
<tr>
<td>Mean difference</td>
<td>10.83</td>
<td></td>
</tr>
<tr>
<td>Percentage of improvement</td>
<td>16.06 % decrease</td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>t-value</td>
<td>27.71</td>
<td></td>
</tr>
<tr>
<td>P-value</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>HS</td>
<td></td>
</tr>
</tbody>
</table>

*SD: standard deviation, P: probability, HS: highly significant, DF: degree of freedom.
intensity for patients before starting the study was 7.33± 1.53 and it was decreased after the end of the treatment program to 3.46±1.13. This statistically difference revealed a highly significant (P<0.0001) decrease with percentage of 52.66% improvement at the end of the program. The mean value of the level of FSH for patients before starting the study was (67.40 ± 14.97) and it was decreased after the end of the treatment program to (56.57 ± 14.76). This statistically difference revealed a highly significant (P<0.0001) decrease with percentage of 16.06% improvement at the end of the programme.

The results of this study agreed with Jue Zhou et al. (2011)11 who compared the effect of acupuncture and auricular acupressure versus hormone replacement therapy in relieving menopausal hot flashes of bilaterally ovariectomized Chinese women. They found that both the severity and frequency of hot flashes in both groups were relieved significantly after treatment when compared with pre-treatment values (P<0.05) and there was no significant difference in the severity of hot flashes between them after treatment (P>0.05). Also the level of FSH decreased significantly in both groups (P<0.05). They concluded that acupuncture and auricular acupressure can be used as alternative treatments to relieve menopausal hot flashes for those bilaterally ovariectomized women who are unwilling to receive hormone replacement therapy.

Avis et al. (2008)1 carried out a randomized study (N=56) with three arms (Traditional Chinese Medicine acupuncture, sham acupuncture and usual care) that showed a significantly greater decrease in flashes in the two acupuncture groups compared with the usual care group. The participants in the two acupuncture groups received a total of 16 treatments over eight weeks.

Venzke et al., (2010)18 studied whether acupuncture would relieve the vasomotor symptoms in post-menopausal women. All subjects were in non-surgical menopause and medically stable. They were assigned to receive 12 weeks of treatment with either Chinese Traditional Medicine acupuncture (TCM) (n=27) or shallow needle (sham) acupuncture (n=24). Both groups of women showed statistically significant improvement on all study parameters (hot flashes, depression and anxiety). This study showed that both shallow needling and TCM acupuncture were effective treatments of post-menopausal vasomotor symptoms.

The results of this study disagreed with the study of Wyon et al. (1995)22 who published a randomized trial with 24 participants, showing that hot flashes decreased significantly by more than 50% among women who received standardized electro-acupuncture. A similar reduction of hot flashes was observed in the control group, sham acupuncture with superficial needle insertion.

Also, a study of 103 participants by Vincent et al. (2007)19 who found that both standardized TCM acupuncture and sham acupuncture with needling in non-acupuncture points reduced daily hot flash score product of hot flash frequency and intensity with 40% and 38%, respectively at the end of the treatment period. The hot flash score reduction was 27% in the treatment group, and 45% in the control group after six weeks of follow up.

Conclusion

From the obtained results, acupressure seemed to be an effective method in relieving post-menopausal hot flashes as it decreased the frequency, intensity and severity of hot flashes. Also, it caused normalization of FSH level. So, it could be used as an alternative effective, safe, painless and non-pharmacological method for treatment of these cases in post-menopausal periods.

REFERENCES


تأثير الضغط الوخزى في تخفيف حدة الهبات الحرارية فترة ما بعد اقتصف الطمث

تعد الهبات الحرارية في غالبية السيدات فترة ما بعد اقتصف الطمث حيث تعتقد نسبة حدوثها إلى ما يقرب من الثلثين. تقلل الهبات الحرارية كفالة حياة المرأة لأنها تحدث أعراضات في النوم وتزيد من التعب والأكحول المزمن. ربما تكون الوسائل الغير دولة للتناسقية تخفيف حدة هذه الهبات الحرارية. أجريت هذه الدراسة لتحديد تأثير الضغط الوخزى في تخفيف حدة الهبات الحرارية فترة ما بعد اقتصف الطمث لدى السيدات. شاركت في هذه الدراسة ثلاثون سيدة من السيدات الحرارية في الثلاثة أشهر الأخيرة. وقد تراوحت أعمارهن ما بين 50 إلى 60 سنة ولم يعمر مؤشر كلفة أقسامهن 30 كجم /م² وكان مستوى الهرمون المحفز لنمو حوضة جراف أكثر من 40 وحدة /مليتر. تم علاج السيدات باستخدام الضغط الوخزى على 10 نقاط لمدة 6 أسابيع، 3 جلسات / أسبوع واستغرقت كل جلسة 20 دقيقة. وقد تم قياس شدة الهبات الحرارية وعادة كل 24 ساعة وأيضا مستوى الهرمون المحفز لنمو حوضة جراف قبل وبعد العلاج. وأظهرت النتائج فروق جوهية ذات دالة إحصائية عالية من حيث شدة الهبات الحرارية. وبناءها، ومستوى الهرمون المحفز لنمو حوضة جراف حيث بلغت نسبة التحسن إلى (16.06% - 52.66% - 52.99%) لكل منهم على حدة بعد العلاج كما قبله. وذلك يمكن أن نستخلص أن الضغط الوخزى يعتبر واحدا من الطرق الأمثلة والفعالة والغير مؤلمة والبسيطة للعلاج الدوايي في تخفيف حدأة الهبات الحرارية فترة ما بعد اقتصف الطمث.

الكلمات الدالة: الضغط الوخزى، الوسائل الغير دولة، فترة ما بعد اقتصف الطمث، الهبات الحرارية.