

## Clinical Observations

### Clinical Study on Treatment of the Earthquake-caused Post-traumatic Stress Disorder by Cognitive-behavior Therapy and Acupoint Stimulation

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**Objective:** To study the curative effect of acupoint stimulation on the earthquake-caused post-traumatic stress disorder (PTSD).

**Methods:** The 91 PTSD patients in Wenchuan hit by a strong earthquake were randomly divided into a control group of 24 cases treated by the cognitive-behavior therapy, and a treatment group of 67 cases treated by both cognitive-behavior therapy and acupoint stimulation. The scores were evaluated according to Chinese version of the incident effect scale revised (IES-R) and the self-compiled questionnaire for the major post-traumatic psychological condition, and the curative effect was compared between the two groups.

**Results:** The total scores of IES-R, the scores of all factors and the total scores of the questionnaire in the two groups after treatment were much lower than those before treatment ( $P < 0.01$ ). The comparison of reduction in the factor scores between the two groups showed that the curative effect in the treatment group was better than that of the control group.

**Conclusion:** The acupoint stimulation is effective for the PTSD patients, with better results than that of cognitive-behavior therapy used alone

**Keywords:** earthquake; electro-acupuncture plus cognitive-behavior therapy; post-traumatic stress disorder (PTSD)

A strong earthquake in Wenchuan at noon on May 12, 2008 put many people under unimaginable psychological pressure of horror, nightmare, helplessness, high alert and other symptoms. If treated improperly, acute stress disorder (ASD) can transform into PTSD in 20%–50% of the people, influencing their normal life and making it difficult to cure their illness.<sup>1</sup> It is especially important to early conduct intervention treatment. Early, flexible, convenient and short-term inquiry policy is needed to help the people adapt to and tide over the crisis, and restore normal function<sup>2</sup> as soon as possible. A psychological rescue team from Zhejiang Province used acupoint stimulation from May 20 to 31 for intervention treatment of those once buried under debris and family members of earthquake victims in Pingwu County. The results of treatment are reported as follows.

#### METHODS

##### General Data

Ninety-one PTSD patients were randomly divided into a treatment group of 67 cases, including 44 family members of the victims and 23 persons once buried, 26 males and 41 females, aged 4–89 years ( $35.01 \pm 19.32$  on the average); and a control group of 24 cases, including 17 family members of the victims and 7 persons once buried, 10 males and 14 females, aged 6–80 years ( $34.67 \pm 15.43$  on the average). The study was carried out with the approval from the Medical Ethics Committee of Zhejiang Provincial Tongde Hospital. Informed consent

was obtained from all the study subjects. There was no difference statistically in sex and stress type ( $P > 0.05$ ), hence comparability.

##### Standards for Diagnosis and Inclusion

In reference to the standard for diagnosing PTSD in WHO classification of mental and behavioral disorder (ICD-10),<sup>3</sup> the subjects included were 1) those with painful mind, who had been once buried under debris during the earthquake and / or whose direct relatives had been killed by the earthquake; 2) those who often suffered from repeated dreams, constant recalls, painful experience and horror under aftershocks; 3) those who evaded or inclined to evade topics on the earthquake and on loss of their relatives; 4) those who had difficulty in recalling some important details of the earthquake, or had 2 of the following items: difficulty in falling asleep, irritability, episodic rage, distraction and excessive alert; 5) the sex and age were not limited.

##### Exclusive Standard

Those who had inclined to commit suicide or had injured others, and those who had reactive psychosis, organic psychosis, severe personality disturbance, cerebral trauma, severe and unstable illness or hypophrenosis, were excluded.

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## Method of Treatment

On-the-spot research was completed by 3 physicians, of whom one archiater performed the acupoint stimulation and cognitive-behavior therapy for insuring identical treatment, and two associate deputy archiaters were in charge of recording data, evaluating scores and taking pictures.

In the control group, using the cognitive-behavior therapy alone, the archiater guided patients to describe the earthquake scene, and their experience including how to be buried, how to rescue their relatives, the most unforgettable scene with their relatives and the horrifying scene, painful feeling and psychological-physiological discomfort; then the psychological treatment was given to renew patients' cognition of trauma. The patient was treated for 30 min each time every other day.

In the treatment group, both the cognitive-behavior therapy and acupoint stimulation were used. A stimulator with 50 Hz produced by a Japanese company was used to stimulate left Laogong (PC 8) for 30 min a time every other day.

The patients in the 2 groups were treated for 1 week and evaluated before and after treatment.

## Index and Method of Observation

The Chinese version of IES-R, and the questionnaire for major post-traumatic psychological condition compiled by psychologists of Tongde Hospital were used. IESR, a scale for self-evaluation, is a generally used tool in the world for measuring the post-traumatic reaction.<sup>4</sup> Its 22 psychological features including intrusion, evasion and high alert have been verified in researches carried out among disaster-relief workers and other special crowds.<sup>5</sup> Scores from 0–4 were used to express no symptom up to severe symptom. Impact of mental trauma in the previous week evaluated by patients themselves was expressed with the total score from 0–88. The questionnaire contains 38 items, including repeated experience about disaster, evasive reaction, high alert,

somatic discomfort, emotional description, survival confidence, and the symptoms of acute stress reaction and acute stress disorder in ICD-10 and CCMD-3<sup>1</sup> (the third edition of the classification of mental disorder and the standard for its diagnosis in China).<sup>1</sup> The answer “yes” to an adverse condition was expressed as the score 1 and the answer “no” as the score 0. The total score ranged from 0 to 38. Reduction in score showed the improvement of symptoms.

## Statistical Method

SPSS11.5 software was used to process data. *T* test was used to compare measurement data between the 2 groups.

## RESULTS

### Comparison of Scores in IES-R and the Questionnaire on Psychological Condition before and after Treatment in the 2 Groups

As shown in Table 1, the scores in IES-R and in the psychological questionnaire are much lower in the 2 groups after treatment than those before treatment ( $P<0.01$ ), indicating that both the two intervention therapies had good effect. The difference in score before and after treatment in the treatment group was more obvious than in the control group ( $P<0.05$  or  $P<0.01$ ), suggesting that acupoint stimulation plus cognitive-behavior therapy was superior to the cognitive-behavior therapy alone in curative effect.

### Safety Analysis

Both the two therapies have been conducted smoothly. In the cognitive-behavior therapy group, because it was difficult for some patients to tolerate severe sufferings from recalling traumatic experience, the treatment had to be carried out in steps, but with no quitters. In the treatment group with acupoint stimulation, the patients were able to tolerate slight numbness sensation in the left palm, and some patients experience comfortable relaxation without convulsion, faint and other adverse reactions.

**Table 1.** Comparison of the scores before and after treatment between the two groups ( $\bar{X} \pm s$ )

Group	Time	Cases	IES-R score				Questionnaire Score
			Total score	Score for intrusion	Score for evasion	Score for high alert	
Treatment group	Before treatment	66	60.59±5.03	24.94±2.61	19.42±2.30	16.23±2.18	27.56±5.95
	After treatment	66	39.97±4.32*	16.48±2.19*	12.71±1.88*	10.77±1.76*	23.85±6.49*
	Difference	66	20.86±2.98 <sup>△△</sup>	8.53±1.54 <sup>△△</sup>	6.82±1.62 <sup>△△</sup>	5.51±1.27 <sup>△△</sup>	3.86±2.35 <sup>△</sup>
Control group	Before treatment	24	61.04±3.42	24.75±1.87	19.88±2.11	16.42±1.84	29.25±5.36
	After treatment	24	44.88±3.10*	17.63±2.12*	14.63±1.35*	12.63±1.56*	26.71±5.53*
	Difference	24	16.17±3.00	7.13±1.15	5.25±2.15	3.79±1.53	2.54±1.74

Note: \* $P<0.01$ , for the intragroup comparison; <sup>△</sup> $P<0.05$ , <sup>△△</sup> $P<0.01$ , for the intergroup comparison..

## DISCUSSION

There are many methods to intervene in PTSD. At present, the articles on early effective psychological intervention in PTSD mainly concentrate on cognitive-behavior therapy (CBT). Some researches regard CBT as the first-chosen therapy for psychological intervention in PTSD. The therapy has certain curative effect for improving acute stress disorder (ASD) and preventing it from developing into PTSD.<sup>6</sup> In China, ASD and PTSD are mainly treated with medications for depression and anxiety respectively. Psychological persuasion is only used for minority of patients. Because the psychoactive drugs are necessarily taken for a long time and can only slightly improve the repeated experience, evasion and other symptoms, and many patients reject to take drugs, it is difficult to achieve the expected results for treating ASD and PTSD in disaster-stricken areas.<sup>7</sup> After the strong earthquake in Wenchuan, according to foreign experience, the psychological intervention in PTSD is of important significance for rebuilding healthy psychological state of earthquake-stricken population, reducing occurrence of PTSD, perfectly dealing with the aftermath of earthquake and social integration after the earthquake.

Early treatment of PTSD by cognitive-behavior therapy may show obvious effects for setting up correct cognition and eliminating the symptoms. However, it unavoidably makes patients recall the horrifying scene, often causing emotional reaction and dysfunction of vegetative nerve and even uncontrolled condition; and it is necessary for the patients to be guided and placated in steps for a quite long time and for the practitioners to have very high professional skill. Under the condition of strong earthquake with a large number of people to be ungently treated, it is difficult for a limited number of professionals to fulfill such an arduous task. Acupoint stimulation plus cognitive-behavior therapy, a new method for treating PTSD, can relieve anxiety, agitation and horror in a short time.<sup>8-10</sup> The authors have used the method to alleviate compulsion, anxiety and horror in obsession patients with good curative effect.<sup>11</sup> Acupuncture at Laogong (PC 8) can treat precordial pain, vexation, vomiting and coma.<sup>12</sup> The present study shows that acupoint stimulation at Laogong plus cognitive-behavior therapy may obviously reduce the emotional reactions to recalling the horrifying scene, thus remarkably improving the symptoms of PTSD.

The results from the present study indicates that both the

cognitive-behavior therapy alone and the acupoint stimulation plus cognitive-behavior therapy can improve the symptoms of ASD, the latter is better than the former in effect. The additional use of acupoint stimulation can enable the generally trained interveners to effectively control the process of cognitive-behavior therapy, and facilitating a rapid progress in psychological intervention after earthquake. Therefore, the authors suggest that the acupoint stimulation plus cognitive-behavior therapy be used for psychological intervention in disaster-stricken areas.

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