



Case Report

Case of post-stroke depression^{*}

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ARTICLE INFO

Article history:

Available online 17 March 2018

Keywords:

Stroke
Post-stroke depression
Acupuncture
Five-element music
Music therapy

ABSTRACT

By adopting the psychosomatic therapy, the author treated 1 case of post-stroke depression through applying traditional acupuncture, acupoint injection combined with TCM five-element music therapy. After treatment, the neurological functions of the patient obviously recovered, Hamilton Depression (HAMD) Scale (17 items) score reduced, the levels of tumor necrosis factor and hypersensitive C-reactive protein both declined, and all the indicators were improved significantly, indicating that the curative effect of acupuncture combined with TCM five-element music therapy on this PSD patient was significant, and this treatment method was worthy of further exploration.

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The male patient was 70 years old and visited our hospital on June 30, 2016. Complaint represented by his family members: lack of strength in the left limbs for more than 1 month. Medical history: the patient suffered from lack of strength and limited activity in the left limbs 1 month ago, so he visited to a hospital for MRI. The MRI result showed a large area of cerebral infarction in the right frontal lobe, temporal lobe and occipital lobe. The curative effect after treatment was not good, so he was transferred to our hospital for further treatment. The patient had a history of hypertension. He was addicted to tobacco and alcohol. Symptoms: mental fatigue, lack of strength in the left limbs, black mood, silence, maudlin, with complaint of pain in the left shoulder, poor sleep, restless sleep, normal appetite and digestion, and normal urination and defecation. His tongue was dusky and pale, coating was thin and white, and pulse was wiry and glossy. Physical examination: clear mind, the muscle force of the left upper limb was at level 0, and the muscle force of the left lower limb was at level 1. The muscle tension of the left upper and lower limbs reduced, and the muscle force and muscle tension of the right upper and lower limbs were normal. Blood pressure: 135/90 mmHg. The patient was prescribed Irbesartan and hydrochlorothiazide once daily and 150 mg was given each time. Score of the *China clinical neurological impairment assessment scale after stroke* (issued on the 4th cerebrovascular disease conference and including 8 items of consciousness, horizontal gaze, facioptosis, speech, myodynamia of upper limb, hands and lower limb, walking ability): 28. Hamilton Depres-

sion (HAMD) Scale (17 items) score: 22. Auxiliary examination: tumor necrosis factor 16.40 pg/mL, hypersensitive C-reactive protein (hs-CRP) 1.68 mg/L. Probable diagnosis: recovery phase of cerebral infarction. TCM diagnosis: stroke-striking the meridians and collaterals (phlegm stagnation obstructing the meridians). Analysis: the patient was depressed, HAMD Scale (17 items) score: 22, indicating moderate depression and post-stroke depression. This disease was caused by post-stroke neurological impairment, then depression was induced. This disease was a kind of psychosomatic disease, and psychosomatic therapy should be adopted.

Acupuncture combined with acupoint injection was used, and five-element music therapy was adopted at the same time. The methods were as follows: Bāihuì (百会GV 20), hand three kneeling on the left (Qūchí (曲池LI 11), Wàiguān (外关TE 5) and Hégǔ (合谷LI 4)), foot three kneeling on the left (Zúsānlǐ (足三里ST 36), Sānyīnjiāo (三阴交SP 6) and Tàichōng (太冲LR 3)) were selected. The acupoint location was based on the international standard. Scalp acupuncture was conducted at GV 20 which was located at 5 *cun* straightly upward from the mid-point of anterior hairline, or the mid-point of the connecting line of both ear tips. Global disposable sterile acupuncture needles (with the specification of 0.30 × 25 mm) produced in Suzhou Acupuncture Goods Co., Ltd. were applied. Backward transverse insertion was carried out with an angle of 15°. Rapid needle insertion was conducted in order to make the needle tips reach the substratum of epicranial aponeurosis. The depth of needle insertion was 0.5–0.8 *cun*, then rapid twirling and even reinforcing and reducing manipulation were performed with a frequency of 150–200 times/min. Needling manipulation lasted for about 30 s to the extent that the patient felt sore and swollen in local part. The needles were retained for 30 min,

^{*} Supported by Youth Project of Natural Science Foundation of Jiangsu Province: No. BK20171070.

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during which, needling manipulation was performed for once every 10 min, and the pinholes were pressed for about 3 min after needle withdrawal in order to prevent bleeding and infection. Body acupuncture was carried out upon conventional acupoint selection, and even reinforcing and reducing manipulation was performed. The needles were retained for 30 min, during which, needling manipulation was performed for once every 10 min. Acupuncture was conducted for once a day. Acupoint injection methods: the patient was asked in lateral position or supine position. Disposable syringe with a 5# syringe needle and a capacity of 5 mL was adopted. Two mL of *Dēngzhānxīn* (灯盏细辛, *Herba Erigerontis*) injection was sucked, then the needle was rapidly inserted into the subcutaneous part at *Yánglíngquán* (阳陵泉 GB 34), and transverse insertion was slowly performed with a depth of about 1–1.5 *cun*. After *deqi*, when there was no blood return, the injection was slowly pushed at the same time of needle withdrawal. The pinhole was pressed for about 2 min after needle withdrawal in order to prevent bleeding. Injection was conducted alternately in the left and right sides, in the left side in odd-numbered days and right side in even-numbered days. Treatment for 6 days was considered as 1 course of treatment, and 1 day was free from treatment between two courses. Music selection: the patient was depressed with sad emotion. According to the principle of the restriction cycle of five-element music, sorrow belongs to metal, and one of the five tones corresponding to metal is *Shang* tune; fire restricts metal, the emotion corresponding to fire is joy, and one of the five tones corresponding to fire is *Zhi* tune. Fire restricts metal, thus joy restricts sorrow, *Zhi* tune restricts *Shang* tune, so *Zhi* tune music can be selected for restraining the sad emotion. *Jolly Meeting* and *Rainbow after the Rain–Zhi Tune* were played alternately for twice a day with once in the morning and once in the afternoon. The music was played for 30 min at each time, and acupuncture was conducted in the morning together with the music play. Treatment for 6 days was considered as 1 course of treatment, and 1 day was free from treatment between two courses. After treatment for 3 weeks, the neurological functions of the patient's limbs and his depressed emotion were all improved. Muscle force: level 3 at the adjacent end and level 1 at the distal end of the left upper limb, and level 3 in the left lower limb. Score of the China clinical neurological impairment assessment scale after stroke: 22. HAMD (Hamilton Depression) Scale (17 items) score: 14. Reexamination: tumor necrosis factor 6.13 pg/mL, hypersensitive C-reactive protein 0.35 mg/L.

Notes

Post-stroke depression (PSD) is the most common emotional disorder after stroke. It is generally believed that its pathogenesis is the result of combined action of biological, psychological and social factors. The author believes that the holistic view of traditional Chinese medicine should include the human mind and body as a whole. This disease is a kind of psychosomatic disease, and its incidence is the result of combined action of psychological defects and physical defects. Therefore, psychosomatic therapy should be adopted for treatment of post-stroke depression. It was said in *Huángdì Nèijīng* (《黄帝内经》, *The Yellow Emperor's Inner Classic*) that "The professional doctor will pacify the emotion at first, and then treat the body." Psychosomatic therapy has been advocated all the time. According to the principle of restriction cycle of the five phases, five-element music therapy was adopted for this case, and the music which restricted the sad emotion was selected.

This patient was depressed with sad emotion. According to the theory of checking one's emotion with another in traditional Chinese medicine, *Jolly Meeting* and *Rainbow after the Rain–Zhi Tune* were selected. Previous study [11] has shown that there is an ob-

vious correlation between hs-CRP and the occurrence of PSD, and the higher the hs-CRP content is, the more severe the depressive disorder in stroke patients will be. Recent studies have suggested that the inflammatory factors after stroke are involved in the occurrence and development of PSD, but the mechanism has been still unclear. Pascoe et al. [2] thought that the inflammatory response after stroke is closely related to PSD. Su et al. [3] had found that the levels of IL-6, IL-10, TNF- α and IFN- γ of PSD patients increased, indicating that immune imbalance played an important role in the pathophysiological process of PSD, and IL-6 and TNF- α were the key cytokines which can lead to immune imbalance. After psychosomatic therapy, the neurological impairment scale and HAMD scale of the patient were significantly improved, and the levels of hs-CRP and TNF- α decreased significantly, indicating that the curative effect of this therapy was satisfactory.

One previous study suggested five-element music therapy plus acupoint needling and acupoint injection can improve the symptoms in patients with post-stroke depression [4].

Acupoints of *yang* meridians are usually selected which can dredge the meridian *qi* of *yangming* meridians, so as to unblock the meridians and collaterals, reinforce healthy *qi* and dispel pathogen [5]. Acupoint injection plays a dual role of acupoint and *Herba Erigerontis*, strengthens the functions of unblocking the meridians and collaterals, moving *qi* and invigorating blood. Alternate injection at bilateral GB 34 can make the medicine be fully absorbed, and avoid the excessive quantity of stimulus at the acupoint on one side due to daily injection. However, the treatment for mind is often ignored by clinicians. The efficacy of five-element music therapy still needs to be further verified. Five-element music therapy in traditional Chinese medicine has been recorded in *The Yellow Emperor's Inner Classic*, and attracts more and more attention from modern scholars. The application of five-element music therapy in clinical treatment of mental disorders or psychosomatic diseases is a kind of innovation based on inheritance, and satisfactory curative effect has been obtained. One previous study suggested five-element music therapy plus acupoint needling and acupoint injection can improve the symptoms in patients with post-stroke depression [6]. The selection of five-element music has the following types: mutual generation, restriction and correspondence [7]. The restriction method was adopted in this case, and the mechanism still needs to be further studied.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.wjam.2018.03.011.

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