Clinical Rresearch

Effect of three vertigo-stopping needles on neurohumor of patients with cervical vertigo: a controlled trial*

止晕三针对颈性眩晕患者神经体液的影响*

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ABSTRACT

Objective To observe the effect of three vertigo-stopping needles on the contents of neuropeptide Y (NPY), endothelin (ET) and calcitonin gene-related peptide (CGRP) in plasma of patients with cervical vertigo, and to explore its mechanism of treatment. **Methods** One hundred and eighty patients with cervical vertigo were divided into group A [acupuncture at Rényíng (人迎 ST 9) and Fēngchí (风池 GB 20), and frontal line], group B [acupuncture at *Jǐng jiājǐ* (颈夹脊), GB 20 and Bǎihuì (百会 GV 20)] and group C [intravenous infusion with ligustrazine and oral administration with flunarizine] according to simple randomization, with 60 cases in each group. For the patients in group A and group B, the treatment was conducted once a day, and ten times were considered as one course of treatment. Two days were free of treatment between two courses, and two courses were needed. For the patients in group C, the treatment was conducted for fifteen days. The contents of NPY, ET and CGRP in plasma before and after treatment were detected in patients with cervical vertigo. **Results** The contents of NPY in plasma of patients in the three groups after treatment were markedly lower than that before treatment (all $P<0.01$), and the differences were not statistically significant when compared the descending degrees among three groups ($P>0.05$). The contents of ET in plasma of patients in the three groups after treatment were markedly lower than that before treatment ($P<0.05$, $P<0.01$), the descending degree in group A was greater than that in group B and group C, and the difference was statistically significant ($P<0.01$, $P<0.05$); while the difference was not statistically significant when compared the descending degrees between group B and group C ($P>0.05$). The contents of CGRP in plasma of patients in the three groups after treatment were markedly higher than that before treatment ($P<0.05$, $P<0.01$), the increasing degree in group A was greater than that in group B and group C, and the difference was statistically significant (both $P<0.05$); while the difference was not statistically significant when compared the increasing degrees between group B and group C ($P>0.05$). **Conclusion** Three vertigo-stopping needles, acupuncture and medication can regulate the contents of NPY, ET and CGRP in plasma of patients with cervical vertigo, while three vertigo-stopping needles is significantly superior to acupuncture and medication in reducing ET and increasing CGRP.

KEY WORDS: cervical vertigo; three vertigo-stopping needles; Rényíng (人迎 ST 9); Fēngchí (风池 GB 20); controlled trial

Cervical vertigo (CV), with the main clinical manifestation of vertigo, is a kind of syndrome caused by pathological changes of cervical spine. Its pathogenesis is very complicated, which may

be related with several factors such as mechanical press, vascular occlusion, malformation, stimulation on sympathetic nerve and body fluid factor[1]. The incidence in adults is up to 10%[2], recently, it increases year by year, and more and more younger people are attacked by this disease. Acupuncture is effective in treatment of CV[3–6], but the study on the mechanism of treatment, especially the influence of nerve-humoral factor, is still fewer. Sixty patients with cervical vertigo were treated with three vertigo-stopping needles by the authors, and 60 patients treated with acupuncture at *Jǐng jiājǐ* (颈夹脊), Fēngchí (风池 GB 20) and Bǎihuì (百会 GV 20) and 60 patients treated with intravenous infusion with ligustrazine and oral administration with flunarizine were taken as control, through which, three vertigo-stopping needles was proved to be more effective in treatment of cervical vertigo[7]. In this study, three therapies were compared in the contents of neuropeptide Y (NPY), endothelin (ET) and calcitonin gene-related peptide (CGRP) in plasma of patients with cervical vertigo, so as to further prove the efficacy of three vertigo-stopping needles.

CLINICAL DATA

General information

All the cases, conforming to the inclusive criteria of cervical vertigo, were inpatients in our hospital from December 2012 to July 2013 in osteological department and rehabilitation department. One hundred and eighty cases were randomly divided into three vertigo-stopping needles group (group A), conventional acupuncture group (group B) and western medicine control group (group C) according to random number table method, with 60 cases in each group. There was no statistical significances in gender, age and course of disease among the patients in the three groups based on statistical analysis (all $P>0.05$), and the result was comparable. The details were seen in Table 1.

Diagnostic criteria

(1) Diagnostic criteria in TCM[8]

① The patients with chief complaint of vertigo, accompanied with nausea, vomiting, tinnitus, discomfort when seeing things (dry, bloated, astringent or blurred), sweating, palpitations, high blood pressure, headache, neck and shoulder pain, hot flashes and upper limb numbness. ② It is suggested that the disease attacks people more when getting up, lying in bed, turning over, head torsion, and other neck activities or cervical spine in a special position, and vertigo can be eased after rest and cervical fixation. ③ The patients with positive result in cervical spine movement load test. ④ The patients indicated with cervical vertebra instability according to cervical dynamic X-ray. ⑤ The patients with aurinasal, ophthalmic, cerebral, cardiogenic and drug-induced cervical vertigo, and cervical vertigo caused by infection and intoxication were excluded.

(2) Pattern differentiation

Phlegm-damp harassing the upper body: vertigo with heavy head, accompanied with chest oppression and nausea, eating less and sleeping more, white and greasy coating, and soggy and slippery pulse.

Ascendant hyperactivity of liver *yang*: vertigo and tinnitus, headache with swelling, hot flashes, impatience and irascibility, sleeping less and profuse dreaming, bitter taste in the mouth, red tongue, thin and yellow coating, and wiry pulse.

Liver-kidney *yin* deficiency: dizziness, blurred vision, tinnitus, low spirits, sleeping less and profuse dreaming, soreness and weakness of waist and knees, dry mouth and thirsty, red tongue, thin coating, thready and wiry pulse or thready and rapid pulse.

Qi and blood insufficiency: vertigo attacks when tiring, and is aggravated when moving, pallid complexion, pale lip and nail, lusterless hair, palpitations and sleeping less, mental fatigue and laziness to speak, eating less, pale tongue, thin coating, and thready and weak pulse.

(3) Diagnostic criteria in western medicine[9]

① The patients with sudden vertigo which is related to the position of the head, and lasting for a short time. ② The patients with vertigo accompanied with one or more signs and symptoms of nerve defect (such as astasia, nausea and vomiting, numbness and weakness of one side limbs, and horizontal nystagmus). ③ The symptom alleviates within

Table 1 Comparison of general information on cervical vertigo patients in the three groups

Groups	Patients	Gender		Age ($\bar{x}\pm s$, years)	Course of disease ($\bar{x}\pm s$, days)	Phlegm-damp harassing the upper body (cases)	Ascendant hyperactivity of liver *yang* (cases)	Liver-kidney *yin* deficiency (cases)	*Qi* and blood insufficiency (cases)
		Male	Female						
A	60	14	46	51.95±9.97	139.47±15.02	10	16	26	8
B	60	16	44	55.41±11.32	132.83±17.39	8	14	32	6
C	60	23	37	53.52±11.74	138.61±13.35	9	15	29	7