

# Effect of acupuncture therapy on cerebrovascular capacity in acute stroke patients

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<b>Registration date</b> 20/04/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 27/06/2017	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

A stroke is a serious condition where the blood supply to a part of the brain is cut off. Around 80% of strokes are ischemic strokes, in which the arteries that supply the brain with oxygen become narrowed or blocked, causing severely reduced blood flow (ischemia). As we age, a gradual build-up of a sticky substance called plaque can build-up in these arteries. An acute cerebral infarction is a type of ischemic stroke in which these arteries become blocked suddenly by a blood clot, reducing blood flow to the brain (cerebral perfusion) and starving it of oxygen. It has been found that a type of acupuncture called waking up spirit needling can help to improve symptoms in stroke patients. Acupuncture is widely used in stroke treatment, but the way that it works is still unclear. The aim of this study is to find out whether the waking up spirit needling method of acupuncture can help to improve blood flow to the brain and relieve symptoms in stroke patients.

### Who can participate?

Adults who have had a acute cerebral infarction and are experiencing reduced by flow to the brain.

### What does the study involve?

Participants are randomly allocated to one of two groups. Participants in the first group receive acupuncture with waking up spirit needling method. Participants in the second group receive twelve hand and foot acupuncture. For all participants, acupuncture sessions take place every day on weekdays, with a break over the weekend, for two weeks and last for around 35 minutes per session. Participants undergo a breathing test while having the blood supply to their brain measured using an ultrasound probe (device which uses sound waves to view the blood vessels that supply the brain) at the start of the study and then again after one and two weeks of treatment. Participants also complete a number of questionnaires in order to find out if their has been any change to their nerve function or ability to complete daily activities.

### What are the possible benefits and risks of participating?

It is expected that participants will benefit from relief of pain as well as improved function and

strength. There is a small risk that the acupuncture treatment could make participants feel nauseous, faint or experience a temporary increase in pain either during or after treatment. Participants are warned of these potential side-effects before consenting to have acupuncture.

Where is the study run from?

Beijing Hospital of Traditional Chinese Medicine affiliated to Capital Medical University (China)

When is the study starting and how long is it expected to run for?

April 2016 to May 2017

Who is funding the study?

The Beijing Municipal Administration of Traditional Chinese Medicine (China)

Who is the main contact?

Dr shao-song Wang

13263226224@163.com

## Contact information

**Type(s)**

Scientific

**Contact name**

Mr Wang Shaosong

**Contact details**

Beijing Hospital of Traditional Chinese Medicine affiliated to Capital Medical University

Beijing Dongcheng District Backstreet Gallery No. 23

Beijing

China

100023

+86 (0)13 269211249

13263226224@163.com

## Additional identifiers

## Study information

**Scientific Title**

Clinical study to assess the influence of acupuncture with waking up spirit needling method on cerebrovascular reserve capacity of patients with acute cerebral infarction

**Study objectives**

Acupuncture with waking up spirit needling method can improve the cerebral vascular reserve (CVR) capacity of patients with acute cerebral infarction, thus reducing the scores of National Institutes of Health Stroke Scale (NIHSS) and preventing the further progression of the disease.

**Ethics approval required**

Old ethics approval format

## **Ethics approval(s)**

Research Ethical Committee of Beijing Hospital of Traditional Chinese Medicine Affiliated to Capital Medical University, 30/10/2015, ref: 20151130

## **Study design**

Randomised controlled trial

## **Primary study design**

Interventional

## **Study type(s)**

Treatment

## **Health condition(s) or problem(s) studied**

Acute cerebral infarction

## **Interventions**

Participants are randomly allocated to one of two groups.

Treatment group: Participants receive acupuncture with waking up spirit needling method

1. Acupuncture bloodletting will be conducted at acupoints Baihui (DU20), Sishencong (EX-HN1) or twelve well points, the needle will be withdrawn immediately, and skin around the pin holes be squeezed to exanguinate a few drops of blood.
2. Other points like Renzhong (GV 26), Chengjiang (CV 24), Fengchi (GB 20), Hegu (LI 4), Laogong (PC 8), Taichong (LV 3), and Yongquan (KI 1) will be chosen after the bloodletting to take acupuncture, the needles will be retained for 30 minutes.

Control group: Participants receive twelve hand and foot acupuncture. This involves the acupoints including Quchi (LI 11), Neiguan (PC 6), Hegu (LI 4), Yanglingquan (GB 34), Zusanli (ST 36), and Sanyinjiao (SP 6), which will be chosen to take acupuncture, the needles will be retained for 30 minutes.

Participants in both groups receive treatment once a day on weekdays, with a break at the weekend, for a total of two weeks. Each treatment session lasts approximately 35 minutes, with 5 minutes to place the needles and 30 minutes for the needles to remain in place before removal.

All participants are followed up at 1 and 2 weeks post randomisation.

## **Intervention Type**

Other

## **Primary outcome(s)**

1. Cerebral vascular reserve (CVR) capacity is determined using the mean blood flow velocity (MFV) of the middle cerebral arteries, as measured with Transcranial Doppler (TCD) breath holding test at baseline and 2 weeks
2. Breath-holding index (BHI) is measured at baseline and 2 weeks

CVR detection method: Transcranial doppler breath holding test is applied. Patients are instructed how to hold the breath, and then they practice for twice before the detection. Patients take supine position, breath peacefully for 5 minutes. Then two ultrasonic probes of TCD machine (EMS-9W, Nanjing Bang'ao Medical Apparatus Ltd. Co., Nanjing, China) are put on

bilateral temporal windows with depth of 50-55 mm to measure the blood velocity of bilateral middle cerebral artery, M1. When the best blood flow signal is obtained, the probes are fixed. The mean blood flow velocity is recorded as patients in a calm state. Then patients are asked to hold breath for at least 15 seconds, and the mean blood flow velocity is recorded again.  $CVR = \frac{\text{After holding breath MFV} - \text{Before holding breath MFV}}{\text{Before holding breath MFV}} \times 100\%$ . CVR function is impaired if CVR is less than 20%.  $BHI = \frac{\text{After holding breath MFV} - \text{Before holding breath MFV}}{\text{Before holding breath MFV}} \times (100 / \text{time holding breath})$ .

### **Key secondary outcome(s)**

1. Nerve function is measured using the national institutes of health stroke scale (NIHSS) at baseline, 1 week and 2 weeks
2. Performance in activities of daily living is measured using the Barthel Index at baseline, 1 week and 2 weeks

### **Completion date**

31/05/2017

## **Eligibility**

### **Key inclusion criteria**

1. Aged between 30 to 80 years old with acute cerebral infarction, and their onset time is less than 7 days
2. Meet the western medicine diagnostic criterion for cerebral infarction issued by American Heart Association/American Stroke Association, AHA/ASA in 2013
3. Meet the traditional Chinese medicine diagnostic criterion developed according to the Stroke Diagnosis and Curative Effect Evaluation Standard (Draft) by State Administration of Traditional Chinese Medicine, Acute Encephalopathy Research Group
4. Diagnosis confirmed by head CT or MRI
5. Confirmed with CVR impairment by breath-holding test
6. With NIHSS score larger than or equal to 5 points, or less than or equal to 20 points, and Glasgow Coma Scale score larger than or equal to 12 points
7. Agree to participant in this trial and assign the informed consent.

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Sex**

All

### **Key exclusion criteria**

1. Using antithrombotics such as Low Molecular Heparin because of some other disease
2. Carotid artery stenting
3. Serious heart, lung or kidney diseases

4. Do not coordinate the brain ultrasound examination or quantitative score evaluation due to other diseases

**Date of first enrolment**

30/04/2016

**Date of final enrolment**

20/05/2017

## Locations

**Countries of recruitment**

China

**Study participating centre**

**Beijing Hospital of Traditional Chinese Medicine affiliated to the Capital Medical University**

Beijing Dongcheng District Backstreet Gallery No.23

Beijing

China

100023

## Sponsor information

**Organisation**

Research Office of Beijing Hospital of Traditional Chinese Medicine affiliated to Capital Medical University

**ROR**

<https://ror.org/013xs5b60>

## Funder(s)

**Funder type**

Government

**Funder Name**

The Beijing Municipal Administration of Traditional Chinese Medicine

## Results and Publications

## Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Other

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol article</a>	protocol	24/06/2017		Yes	No