

Application frequency and therapeutic effect of *Astragalus* in treating ischemic cerebrovascular disease

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Abstract: In recent years, Traditional Chinese Medicine (TCM) therapy has achieved substantial progress and development, playing an important role in clinical practice. In this paper, to explore the therapeutic effect of *Astragalus* in treating ischemic cerebrovascular disease, 2687 patients with ischemic cerebrovascular disease who had been treated with *Astragalus* therapy from Jan 2014-Oct 2015 were selected as the research objects. Through retrospective analysis of their medical records, we analyzed the application frequency of *Astragalus* using quantitative method of information, and conducted specific analysis on the therapeutic effect of *Astragalus* after fully surveyed patients' physical conditions after treatment. Results show that in the treatment of ischemic cerebrovascular disease by TCM, *Astragalus* is of high application frequency and sound therapeutic effect, which is deserved to be applied and promoted in clinical practices.

Keywords: Ischemic cerebrovascular disease, TCM treatment, *Astragalus*; application frequency.

INTRODUCTION

Ischemic cerebrovascular disease, also known as cerebral ischemic disease, is a generic term for different degrees of ischemic cerebrovascular diseases. This disease is basically a focal cerebral dysfunction in blood supply area caused by ischemia of one or many cerebral vessels (fig. 1) (Huang, 2014; Geng, 2010). This disease has many manifestations in clinic (fig. 2), including transient ischemic attack, reversible ischemic neurologic deficits, stroke in progression, complete stroke, fringe area (cerebral watershed area) infarction, and lacunar infarction. Ischemic cerebrovascular disease will cause different degrees of damages to encephalic and internal carotid artery systems as well as to intracranial vertebral basilar artery system.

The incident rate of ischemic cerebrovascular disease in China has been greatly increased with the continuous change of people's life style. Over recent years, such disease has become the greatest threat to the elder people's health in China. Treating ischemic cerebrovascular disease by western medicine has always been the most common therapeutic method, however the effect is sometimes good and sometimes bad, which is hardly satisfactory. Huang Junjie, Geng Yuemei (Huang, 2014; Geng, 2010) et.al conducted large amounts of clinical researches and found that treating ischemic cerebrovascular disease by Chinese medicine can achieve sound effect. In this paper, based on practical research and professional reference data, the application frequency and clinical therapeutic effect of *Astragalus* in treating ischemic cerebrovascular disease were deeply analyzed. The results showed that *Astragalus* played a significant

and effective role in the treatment of ischemic cerebrovascular disease. Specific situations are introduced hereunder.

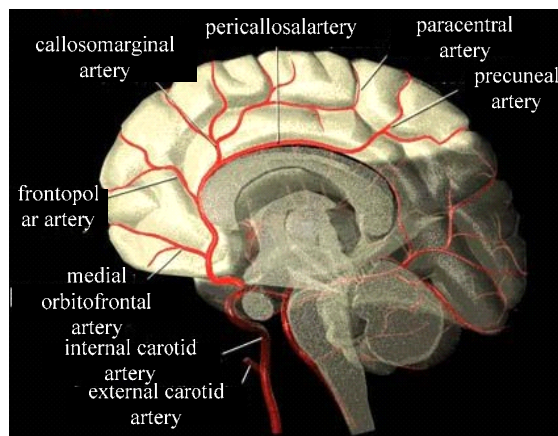


Fig. 1: Major attack locations of ischemic cerebrovascular disease.

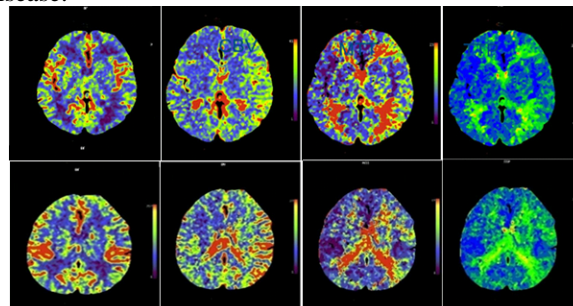


Fig. 2: Clinical manifestation of ischemic cerebrovascular disease.

MATERIALS AND METHODS

General data

In this paper, researched objects are 2678 patients with

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ischemic cerebrovascular disease who have been treated by Chinese medicine therapy from Jan 2014 to Oct 2015/ Through analysis of the patients' medical records, it can be known there are 1439 male patients and 1239 female patients with ages ranged from 45-87 and average age of 67.4 ± 12.7 . All patients involve TCM treatment, wherein 459 patients adopt solely TCM treatment, and remaining 2219 patients are suggested to take integrated treatment of Chinese and western medicines (Liu 2014).

In addition, to prove the accuracy of the treatment result, researchers analyzed related references on the treatment of cerebrovascular disease by TCM from 2005-2015.

Analysis method

The content needed to be researched is retrieved and analyzed by inputting keywords such as "Chinese medicine, "ischemic cerebrovascular disease" "Astragalus" in indexing area. After researching results show up, the application frequency of Chinese medicine are recorded and sequenced.

All selected 2678 patients are grouped based on the difference of treatment region, and then corresponding numbers of medical staffs are allocated according to the numbers needed to treat in different regions. In addition, the medications of all patients in their medical records are arranged and analyzed.

After analysis, 1604 patients who continue to accept treatment at hospital are given with questionnaire survey in the hope of analyzing their satisfactory degree on this treatment and observing their physical recovery condition after treatment; On the other hand, the other 1074 patients who have been discharged from hospital are applied with on-site or telephone follow-up in the hope of further specifying the therapeutic effect of *Astragalus* in treating ischemic cerebrovascular disease.

The therapeutic effects of selected patients were evaluated through observing and analyzing their diastolic blood pressures, systolic pressures, triglyceride (TG), total cholesterol (TC), and adverse reactions (Geng 2010).

STATISTICAL ANALYSIS

To implement research of application frequency and therapeutic effect of *Astragalus* in treating ischemic cerebrovascular disease, professional computer statistical software is adopted for recording all data. After that, the application frequency is sequenced from high to low, fully explicating the position and effect of *Astragalus* in treatment of ischemic cerebrovascular disease. In addition, relevant enumeration data of application frequency is represented by n%, and relevant measurement data such as the therapeutic effect is represented by the way of "Average \pm mean". When the

difference value P is less than 0.05, indicating the difference value is of statistical value.

RESULTS

Through professional retrieval and analysis, it can be known that *Astragalus* plays a vital role in treating ischemic cerebrovascular disease and enjoys a relatively higher application frequency. In this research, we analyzed totally 100 kinds of traditional Chinese herbs, wherein the three most frequently used ones were salvia (2007 times), *Angelica sinensis* (0992 times), and *Astragalus* (0988 times). Therefore, it can be known that the application frequency of *Astragalus* is the highest.

Through analysis of the clinical values of all medical herbs, it can be known that all medicines should be effective in promoting circulation and removing stasis, and such class of medicines is of highest application frequency. In addition, to treat ischemic cerebrovascular disease, medicine should be functional in reinforcing deficiency, calming liver wind, relieving exterior syndrome, clearing heat, dissipating phlegm, hemostasis, calming nerve, regulating vital energy, clearing damp, promoting diuresis, warming interior, inducing astringency, promoting digestion, and drawing out poison. On the basis of former analysis result of data, further analysis is conduct on the medicine use frequencies, indicating that promoting circulation and removing stasis (2453 times), reinforcing deficiency(1897 times),clearing heat (1234 times), relieving exterior syndrome, calming liver wind, and dissipating phlegm are the medicine effects enjoying top 6 application frequencies.

In addition, according to the analysis result of 2678 patients' medical records, it can be seen that TCM treatment makes significant therapeutic results. Patients' DBP is significantly reduced to (78.63 ± 8.56) mmHg; SBP is reduced to (118.67 ± 13.55) mmHg; TC content is reduced to (5.10 ± 0.85) mmol/L; TG content is reduced to (1.95 ± 0.52) mmol/L. It can be seen that all indexes are significantly turned to be better as compared with that before treatment, for example, P mean value < 0.05 , which indicates a significant statistical value.

DISCUSSION

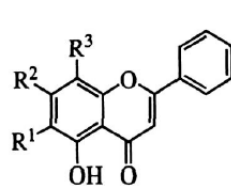
Ischemic cerebrovascular disease is also called TIA (Transient Ischemic Attack) in clinical practice. This is disease refers to focal brain disorder in blood supplying area caused by ischemia of cerebral vessel(s) (Chen 2012, Ye 2012). Clinical research results show that, the average attack time of internal carotid TIA is 14min, and the average attack time of asilar-vertebral artery TIA is 8min (Chen, 2013). In addition, in clinical practice, there is about 1/3 TIA patients suffering further deterioration to apoplexy (Shi 2013, Ji 2010). Therefore, grasping the

effective treatment time plays a vital role in securing patients' lives. Conventionally, western treatment method such as surgery is applied in clinical practice, however in recent years TCM treatment has gradually achieved great process in the clinical treatment of Ischemic cerebrovascular disease.

In this research, *Astragalus* is selected as research object, of which the application frequency and therapeutic effect are analyzed. With sweet warm property, *Astragalus* can classify lung channel, tonify vital energy, invigorate splenic yang, and secure the exterior. Over recent years, *Astragalus* has gained more and more popularity, and serves as substitute boiling with *Jean jean ganoderma lucidum* to prepare decoction or water instead of tea in daily life, which is of excellent disease control and health care effect. With the progress of modern medicine research, the medicinal value of *Astragalus* has been further explored, it has been well recognized that *Astragalus* has the effect of improving immunity, protecting liver, diuresis, anti-aging, anti-stress, decreasing pressure, and antiseptis. In addition, *Astragalus* can not only dilate coronary artery, improve myocardial blood supply, enhance immunity, but also slow cell ageing. *Astragalus* is easy to use and medication method is simple. In treatment of ischemic cerebrovascular disease, *Astragalus* ranks the third place of application frequency among herb medicines, and achieves sound effect. This is mainly because the major cause for ischemic cerebrovascular disease is debility blood hysteresis, arteries and veins stasis, and deficiency of vital qi caused by vigour deficiency and liver and kidney deficiency. Therefore to overcome these problems, it should stick to the principle of resolving phlegm to remove stasis, benefiting qi and nourishing blood in TCM therapy. *Astragalus* is one of such medicines, which can relieve blood, eliminate acne, invigorate vital energy and blood, and tonify yin and yang. *Astragalus* is very effective in treating deficiency of vital energy and asthenia. If a patient shows symptoms such as lack of power, sinking of middle energizer, it is suggested to mix *Astragalus*, *Codonopsis pilosula*, and *atractylodes* into a medicine, so as to realize the efficacy of tonifying spleen. The *Astragalus* is shown as fig. 3. Analysis of chemical components of *Astragalus* is shown as fig. 4.



Fig. 3: The photo of *Astragalus*.



Compd.	R ¹	R ²	R ³
1	H	OH	OMe
2	OMe	OH	H
7	OH	OGluA	H
8	OH	OGlc	H
9	OH	OGluOMe	H

Fig. 4: Analysis of chemical components of *Astragalus*.

Astragalus is a tepid medicine, which is of special security property of TCM. Under normal conditions, it will not cause adverse reactions, however it is worth noting that *Astragalus* is subjected to strict incompatibilities. It is clearly prescribed in “Bencao Jingshu” that those with exterior evil are not suggested to take *Astragalus*. Those with sufficient vital energy already are not suggested; Those with gastrointestinal accumulation are not suggested; Those with sufficient Yang while insufficient Yin are not suggested; Those with heat of upper energizer and deficiency-cold of lower energizer are not suggested; Those with disordered liver-energy and excessive anger are not suggested; Those with smallpox and excessive heat in blood system are not suggested.

In conclusion, *Astragalus* plays a significant role in enhancing the progress of TCM therapy in treating ischemic cerebrovascular disease, therefore it is worth to be promoted in clinical practice. However, since *Astragalus* has very strict incompatibilities, it is needed to pay enough attention to reasonability and scientificity of medication, so as to secure patient's health and safety.

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