

## CHINESE TRADITIONAL MEDICINE AND STROKE

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The earliest practice of Chinese traditional medicine (CTM) was probably far before the literal recorded history. The ancient Chinese probably had accidentally found the therapeutic effects of herbs while they were searching for food, and acupuncture when they found some pains could be relieved by pressing some points in human body. With the accumulation of experience, and under the influence of Chinese ancient philosophy, the theoretical system of CTM began to take form, with limited foundation on human anatomy. Among the organs, heart governs thinking as well as blood circulation in vessels, while brain was mentioned as a "pool of marrow", not listed as an important organ. According to CTM, like all the things in universe, human body forms from "gas (气)", and contains "five elements (五行)", wood, fire, earth, metal, and water. Also in accordance with the universe, human body can be divided into two opposite, but mutually dependent sides, Yin (阴) and Yang (阳), and any serious imbalance between the two leads to diseases. Pathogenetically, diseases were caused externally by "evil gas (邪气)", namely wind, cold, heat, dampness, and dryness, and/or internally by emotion-thought overcharge, unhealthy diet, overstrain, and irregular sexual life. Diagnostically, CTM differentiates disease syndromes into eight fundamental categories (八纲). Any syndrome should be either Yin or Yang, superficial or deep inside, cold or heat, deficient or excessive, and it can be further localized to different organ systems and meridians. Therapeutically, CTM selects herbs by their nature (cold, heat, warm, and cool) and flavor (acid, sweet, bitter, salty, sour, and bland), both are determinant to their therapeutic effects. Multiple herbs are composed into formulas consisting king, assistant, restrictor and envoy herbs working together to relieve diseases.

### Stroke in CTM

Stroke in modern medicine is about equal to "wind-stroke" (中风, "hit by wind") in CTM. In early ages, ancient Chinese doctors attributed the sudden devastating syndrome of stroke to wind by using the method of "classification by analogy", for "Wind travels fast and changes frequently". As the observations accumulated, natural wind was replaced by "internal wind (内风)", which occurred inside the body as a result of other pathological process. When this internal wind strikes, it brings phlegm upwards to block the heart, leading to disturbance in consciousness, or to block the meridians, causing paralysis. Based on this pathogenesis, CTM used medical herbs to stop the wind, clear the phlegm, in order to cure the stroke patient. Judged by ancient case records, the treatment of stroke in CTM was not a successful story, and actually, in CTM, wind-stroke was regarded as one of the four most refractory and fatal diseases (the other three were tuberculosis, ascites, and dysphagia). From today's point of view, the success of stroke management is determined by the differentiation of ischemic from hemorrhagic events, and an early restoration of cerebral perfusion in a limited time window, both were impossible in ancient China, and for these reasons, there could not be any decisive treatment for stroke in CTM.

### Contemporary practice of CTM in Stroke

In late 18th century, modern medicine was introduced into China. Although Xichun Zhang (张锡纯, 1860-1933) had used aspirin as a wind extinguisher to treat wind-stroke, CTM had generally remained isolated theoretically and practically from modern or western medicine until the founding of People's Republic of China. Since 1949, the practice of CTM has undergone dramatic changes, as a result of the changes in education, hospital organization, and government administration of CTM. The basic theory and clinical practice of modern medicine began to influence and modify the practice of CTM. With the understanding that stroke is the result of disturbed cerebral circulation, the CTM theory of "blood stasis (瘀血)" has replaced the "wind" as the most important mechanism of wind-stroke, and the target for treatment. Even in hospitals of CTM, the management of stroke patient begins with brain CT or MRI scans, and rtPA and other thrombolytics are being used in treating acute stroke patient, herbal medicine is becoming an adjunctive to modern medicine, and acupuncture is used to promote the rehabilitation of stroke sufferers. Great effort has been being taken to explain the therapeutic mechanism of herbal medicine with modern method of pharmacology. Meanwhile, it is popular for doctors in modern medicine to use herbal products to treat stroke patients. Each year, millions of people at, or be considered at high risk for stroke are "washing blood vessels twice a year" with intravenous drips of various kind of herbal extracts supposed to be able to protect them from strokes, while it is a tough job to obtain the evidence to support these practice.

In spite of its long history and present popularity, CTM is facing serious problems. How to evaluate it with modern scientific and statistic method? How to make use of its effective method, while avoiding its unwanted effect? These problems remain to be solved.