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Xingnao Kaiqiao (Brain Awakening) Acupuncture Method Used in Treatment of Stroke Patients in Nepal

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Abstract

Stroke is a major cause of disability in older adults worldwide. In Nepal, conventional western medicine and traditional health care are the main method of treating stroke hemiplegia. Functional disability of lower limbs is a common problem in hemiplegic stroke patients. Due to high range of treatment cost and lack of highly trained human resources, modern acupuncture and rehabilitation treatment methods are widely neglected by stroke victims in countries like Nepal. The Xingnao Kaiqiao (brain awakening) acupuncture method is a therapeutic principle and acupuncture method for the basic pathogenesis of stroke, which is caused by blood stasis, liver wind, phlegm turbidity and other pathological factors masking brain orifice and “closing the orifice and concealing the spirit without leading the qi (energy)”. In selecting acu-points, Yin meridian and Du meridian are the main points in this acupuncture method, and the quantitative norms of needling manipulation are emphasized, which are different from the traditional methods of selecting acu-points and needling. The method of “awakening the brain and opening the orifices” is based on the theory of “Brain is the residence of Spirit”. It emphasizes that the key to the emergence of all diseases is “the spirit not leading the qi”. It has obvious curative effect on a series of complications after stroke. The main purpose of this article is to explore the effect of Xingnao Kaiqiao Acupuncture Method on the recovery of muscle function in acute stroke patients.

Keywords: Xingnao Kaiqiao; Acupuncture Method; Stroke Patients; Nepal

Introduction

Xingnao Kaiqiao acupuncture method

Xingnao Kaiqiao Acupuncture Method abbreviated as “XAM” and it was put forward by Chinese well-known Academician Dr. Shi Xue-min in the early 1970s. He had given this name in order to thoroughly and accurately explain the mechanism of this acupuncture method. The basic literal meaning of Xing word of Xingnao Kaiqiao is to indicate the ending of the state of sleep and it is opposite with “Sleep”. This word meaning can be extended as “awake”, “regain consciousness” or “resuscitate” of the state of mind. The meaning of the “Xing” word in “Xingnao Kaiqiao” mainly has “resuscitate” meaning. All the TCM classics have described the “Nao” or brain as extraordinary fu-organ and one of the important organ structures of the human body. The special characteristics of the “Nao” can be summarized as: 1. “Fu –organ of original spirit” means the higher mental spirit of the human body which comes from the birth. From this definition, we can say that “Nao” or brain is the place of human body where the higher mental and spiritual energy is stored when a person born. 2. “Ocean of the marrow”, in the classical text on acupuncture “Lingshu.Hailun” (Theory of Sea in Spiritual Pivot) said that “Brain is the sea of marrow, it is covered

upward and flowing downward”, that has pointed out very clearly the anatomical position of the brain. On the function of the brain, it has pointed that “when the Sea of Marrow is abundant, person will be full of vigor and vitality, when it is inadequate, and then there will be vertigo, tinnitus, dizziness, weakness of limbs, loss of vision sluggishness and death”. This has clearly showed the important and close relationship of brain with the functional activity of the body, sensory function as well as sense of sight, listening, balancing etc. The formation of brain and marrow has the material basis of formation of innate “jing” or essence. “Lingshu. Jingmai” or the theory of meridians and blood vessels in Spiritual Pivot has said that “when human born, first the essence will formed, when essence formed, then start to produce brain and marrow”. 3. “Mass of spiritual wisdom” One of the famous physician of Ming dynasty Wang Ang has pointed that “memory activity of the human, all stored in brain;all those objects seen in the outside world, must have an image which is remained in the brain”. Another reputed doctor of Qing dynasty named Wang Qingren has more clearly pointed that “the memory of the living beings dwells in the brain”. Qing dynasty’s great physician Wang Shixiong has said that “brain is the god, the commander of the consciousness and activity, the spirit and intelligence of the whole body rests in the brain”. The above mentioned discussions have inherited the Li Shizhen’s advocacy, i.e., “brain is the fu-organ of original spirit”. In order to bridge the dispute between brain, heart and mental spirit, the clinical expert of modern times of China named Zhang Xichun has cleverly put forwarded the theory of “the covering body of the mental spirit stored in brain, the uses of the mental spirit starts from heart”. Even though there are too many twist and turns, but they have finally admitted that brain is the mass of mental and spiritual activities, which means it is the material structure of spiritual consciousness and thinking activities. Because of the close relationship between “Nao” (Brain) and “Shen” (mental spirit), sometimes “Xingnao” or resuscitation of brain can also be said by “Xingshen” or resuscitation of the mental spirit.

The word “Kai” from the word Xingnao Kaiqiao literally has the meaning of opening up of the closed or blocked area. The word “Qiao” (orifice) has two definitions in “Neijing” (Inner Canon of Yellow Emperor). The first definition is as said in “Suwen. Zhi Zhen Yao Da Lun” or “Chapter on discussion of the truth: Plain Questions” has said: “the orifices discharge the unwanted things in excess”; “Suwen. Yinyang Yingxiang Dalun” (great discussion on manifestation of Yinyang) have said, “Clear yang ascends to the upward orifices, Turbid Yin descends to downward orifices” etc. All these orifices have pointed to the “orifices with apertures”, for example, mouth, nostrils, anus, vulva etc. The second definition is mostly found in the discussion of the medical experts of later generations, e.g. “xinqiao” or orifice of the heart, “naoqiao” or orifice of the brain, “shenqiao” or the orifice of the spiritual mind etc. and it has a meaning of “open passage” or “gate” or “pass”. It mainly refers to the pathways of brain, heart, lung and spirit, which play an important role in the human body, to explain whether their transmission and allocation functions are smoothly running or not.

In summary, the Xingnao Kaiqiao acupuncture method, understood from the meaning of words, refers to the treatment method of reviving the restrained, damaged and frustrated functions of the human brain and its affiliated tissues through acupuncture, as well as opening and restoring its dominant conductive, connectivity and dominant functions. XAM is a great method in acupuncture and its theory is originated from “Inner Canon of Yellow Emperor”. This method has absorbed the essence of the ancient medical scholar and has gone through the long-term medical practice, continuous summing up as well as unceasing improvement. This acupuncture method has formed by three parts. The first is “Acu-point selection” which is formed very strictly by the organic combination of some special acu-points. The second is “Pricking method” in selected acu-points which has very specific and scientific quantification technique and standard. The third part is “adding or subtracting acu-points in clinical application” from the sets of standardized acu-points. These three aspects have formed the Xingnao Kaiqiao Acupuncture Method and missing of any one of the above mentioned aspects cannot be said as this method [1].

Stroke in Nepal

Stroke is a major public health problem all over the world and ranks third for morbidity and mortality. A review done regarding burden of stroke around globe revealed that, stroke is placed in the second position in terms of death and it is a leading reason behind disability across the world. It is said that the occurrence of ischemic type of stroke is more as compared to hemorrhagic stroke but latter is responsible for more Deaths and Disability Adjusted Life Years (DALY). Likelihood of having stroke increases with age and more number

of people with younger age are affected mainly in countries having low to middle income class. In terms of ethnicity, blacks share 200 - 300% mortality (age 45 to 65) compared to the other race and outcome/recovery following stroke is poor in ethnic minority population as compared to European origin population. Also, in terms of sex, the probability of having stroke increases by 9% in males compared to 10% in females per year. They have concluded that the incidence of stroke and its consequences have decreased during last 10 years of span that could be due to improved health facilities but concerned about cause of disability and death throughout the world especially in low and middle income countries [2]. According to a retrospective study, stroke is one of the major causes for death and disability and it is among top five diseases in Nepal. It is estimated that 50000 people suffer from stroke and out of which 15000 people die annually. Most of the patients had ischemic type of stroke (63%) and of those 22.6% had cardiogenic stroke and rest had atherothrombotic stroke. In hemorrhagic group, 78.3% had intracerebral stroke and rest subarachnoid stroke. 47% of the patients belonged to mongoloid ethnic group. Despite this, actual incidence and prevalence in Nepal cannot be quantified because of current situation of health facilities and delivery system. Exact economic burden of stroke is not known in Nepal; though approximately 315-72 million USD was spend during fiscal year 2010 to 2011 in health sector. Most of the modern health-care facilities are available only in capital city (Kathmandu) and other cities like Bharatpur. Patients living in rural areas are deprived from health care facilities in Nepal [3].

Risk factors that are associated with stroke among Nepalese population were evaluated. It revealed that the mean age for stroke was 65 ± 10.69 years with a range of 34 - 91 years. Proportion of males (65%) was higher compared to females (35%). Hemorrhagic and ischemic type of stroke share almost equal percentage of stroke patients with 53.15% and 46.9% respectively. This statistics infers that incidence of hemorrhagic stroke is higher in Nepal as compared to rest of the countries around world. Hypertension (61.2) ranked first among modifiable factors which indicate the increasing trend of hypertension among Nepalese population. Smoking (59.4%) ranks second to hypertension. Stroke is also associated with alcohol consumption (26.9%) in excess of 500 ml for more than 10 years. Diabetes mellitus was present in around 10% of patients and 7.5% of patients with increased total cholesterol. Atrial fibrillation was found to be non-dependent factor that increases risk of ischemic stroke by 5 times and it was present in 23% of patients. Two or more (multiple) risk factor was present in 76.5% of patients with hypertension and smoking being commonest factor [4].

A study on changing epidemiology of stroke in Nepalese population performed retrospective analysis of every patient with new cases of stroke admitted in Kathmandu Medical College Teaching Hospital during time period of June 2012 to November 2015. They also performed retrospective study for at least one year of follow up. During that period, total 1017 patients were admitted who had stroke for first time and quantified the incidence rate of 64 per thousand admissions. Mean age in their study was 55 years with 60.5% of males. They reported that 57.7% of patients had hemorrhagic stroke with mean age of 46.4 ± 23.2 , 49.5% of ischemic stroke with mean age of 64.6 ± 16.3 years, and rest had transient ischemic attack and hemorrhagic conversion after ischemic stroke. 85% of patients were managed conservatively whereas rest were managed surgically with de-compressive craniotomy, hematoma evacuation or clipping of aneurysm and burr hole evacuation. Mean hospital stay was higher in hemorrhagic stroke (10 ± 9.4 days) as compared to ischemic stroke (7.1 ± 8.1). As per the follow up report, 8.3% died within 3 years with 30 day mortality rate of 2.4% which was more in hemorrhagic stroke. Those patients who survived, they had recovery up to 88.5% in terms of mRS scale at the end of three year. This study was compared with 6 different previous studies done in Nepal from the period of 1996 to 2012. They have concluded that there is increase in incidence of stroke by ten folds in last 2 decades with younger age and despite of awareness program; presences of factors that can be modified are still common. Health facility availability has improved overall mortality but there is still a room for improvement that can decrease morbidity [5].

Discussion

This review critically helps to access the efficacy of XAM in restoring the functional activity of the lower limb muscles in individuals with acute stroke [6]. In the studies, it was found that all the subjects demonstrated some positive effect in improving muscle strength, re-

ducing muscle spasticity, decreasing disability and improving functional activity of the affected lower limb muscles but the interventional group had better improvement compare to control group. In the interventional group, muscle strength was significantly increased in end line assessment mean score of 3.92 ± 0.49 from baseline assessment score of 1.48 ± 1.004 with $p < 0.05$ [7] which means statistically significant. Similarly, functional activity of the affected lower limb significantly increased in end line assessment score of 72.60 ± 7.071 from baseline assessment score of 53.92 ± 14.82 with $p < 0.05$, which means statistically significant. Similarly, spasticity in intervention group at the end of treatment session is 0.16 ± 0.37 which improved from baseline score of 1.36 ± 0.76 . Overall disability decreased from 4.12 ± 0.83 to 1.76 ± 0.66 . These score were having $p < 0.05$ which is statistically significant.

Conclusion

In recent times, “Xingnao Kaiqiao” Acupuncture method has been increasingly used in hospital because of its advantages of standardized acu-point selection, standard manipulation, low lethal rate and disability rate. Now it is not only used for the treatment of stroke, but also has significant effect in pediatrics and other disciplines. In the recent years, related literature reports are increasing day by day, which has accumulated a good foundation for the further study of “Xingnao Kaiqiao” Acupuncture Method. At present, there are many clinical reports about the method of “awakening the brain and opening up the orifices”, but the quality of the paper is not uniform, and further improvement is needed. The new researches shows that the “Xingnao Kaiqiao” acupuncture method has shown a good effect in experimental research on ischemic stroke and the results can play an important role in exploring the mechanism of acupuncture treatment of ischemic stroke. In new researches to come, it should be noted that the protective mechanism of “Xingnao Kaiqiao” acupuncture on brain tissue after ischemia is comprehensive and complex, but the literature reports mostly focus on the effect of acupuncture on one or several indicators, and the mechanism of acupuncture treatment for this disease has not been studied as a unified whole. In terms of research methodology, there is still a lack of high-quality clinical research and multi-center, large-sample evidence-based medical research under the guidance of random, controlled, blind and repetitive principles.

In countries like Nepal, conventional western medicine and traditional health care are the main means of treating stroke hemiplegic. Functional disability of lower limbs is a common problem for hemiplegic stroke patients. After stroke, due to the high treatment cost and lack of number of rehabilitation specialist, modern conventional treatment and rehabilitation methods have been widely ignored in Nepal, but some progress has been made in the related research of acupuncture and rehabilitation treatment in China and abroad. The effect of XAM in the recovery of patients with acute stroke has obtained satisfactory results in past and have proved that XAM has a significant effect on the recovery of muscle strength in patients with acute stroke. Therefore, in the scope of low-and middle-income countries like Nepal, using this acupuncture method to treat hemiplegic stroke patients is affordable, effective and feasible way to restore the motor function of the limbs, increase, muscle tension, decrease spasticity, so as to improve the quality of life of stroke patients with, hemiplegic, reduce the social burden caused by disability and maximize social return.

Conflict of Interest

None to declare.

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