

China-US Relations, Past, Present, and Future

“Scientific Development of Traditional Chinese Medicine (TCM) to Address the Aging World”

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Age-Related Chronic Diseases with Eye Diseases in Particular

As the population grows older and the standard of living rises higher, more and more chronic diseases associated with aging become acutely apparent. Chronic diseases related to the elderly include, but are not limited to, Alzheimer's, Parkinson's, CNS degeneration, geriatric depression, nephropathy, osteoporosis, visual disorders such as glaucoma, age-related macular degeneration (AMD), cataract, uveitis, dry eye syndrome, etc. Although western medicine has been extensively tried for the treatment/prevention of all these disorders, there are many serious problems remained to be solved, particularly the functional disorders. TCM is known to be mainly effective in chronic diseases, yet it is not widely accepted in the western world mainly because its efficacy has not been scientifically proven with placebos. If anything, active principles are isolated from Chinese herbs and are used as western medicine (such as aspirin, pilocarpine, etc.) in the western world. Therefore, it is proposed in this research to develop TCM scientifically and to convince the western world to accept its use.

Even with the crude forms and without scientific assurance, alternative medicine is catching more and more attention of patients lately in the U.S. and the other western nations, mainly because it works well in some chronic diseases and the allowance of medical insurance to pay for the treatment. Therefore, the scientific development of TCM is urgently warranted.

This study will include:

1. To scientifically research and develop the TCM, not just to isolate active principles from the Chinese herbs but also to preserve the uniqueness of polypharmacy in TCM, and to improve its delivery system with nanotechnology, active carrier system, controlled release, and the like.
2. To scientifically prove the efficacies of TCM with placebos, and randomized double masked design so that the western world can accept the scientifically developed TCM without any doubt.
3. To standardize TCM preparations, source of Chinese herbs and dosage forms so that the safety and efficacy of TCM can be assured.

Major efforts have been made recently by Chinese scientists and physicians to combine the use of TCM and western medicine together and to introduce TCM to the western world, however, with only a limited success. On the other hand, American scientists and physicians are working hard to find better and more efficient ways to treat/prevent age-related chronic diseases. Scientific development of TCM is the important way to solve the difficulty to treat/prevent age-related chronic diseases. The joint efforts by scientists and physicians of both Chinese and Americans should be able to scientifically improve the research and development of TCM; to convince the western world of the efficacies of TCM; to improve the health care of American elderly; to reduce the costs of health care; and to bring in tremendous benefit to both China and the United States.

Strength and Weakness of Each Side Which Require Research Collaboration

The background knowledge and fundamental concept and philosophy of TCM and Western medicine are very different. As a result, East and West medicines are stranger to each other until recently when China started the idea of combined use of East-West Medicine.

TCM has been used in China for thousands of years specialized in the treatment of chronic diseases and emphasized in homeostasis of the whole body. On the contrary, western medicine has been talented in treating acute diseases and individual diseased organs. Combined use of East-West medicine enables the treatment of both chronic and acute diseases as well as the homeostasis of whole body and the individual diseased organs.

Although TCM has been used in China for thousands of years, they established their medical knowledge, theories, and efficacies basing on “**experiences**” whereas western medicine based all those on “**experiments**”. Therefore, TCM is considered un-scientific whereas Western medicine is considered fragmental in treating diseases. Therefore, combination/collaboration of the two is the must in order to advance medical treatment to a higher level of success.

Since TCM is based on the human experience in treating diseases, all information available is applicable to human patients even though they are considered to be un-scientific. In order to convince Western world to adapt TCM, scientific studies of TCM is required to generate convincing data to support the claims of TCM. There are numerous diseases that are unable to be treated in Western medicine. Therefore, collaboration of China and US would be most profitable to both sides of the people.

Briefly, effective Chinese herbs will be selected in China based on the experience in human patients. Either active principles isolated from Chinese herbs or extracts of the herbs will be scientifically studied in the US. After pre-clinical studies, clinical trials will be initiated both in China and in the US.

Collaboration in Practice

Dr. Chiou has trained at least 20 visiting scholars and/or postdoctoral fellows and six graduate students from China to engage in studying ocular pharmacology of natural products isolated from Chinese herbs. They have published jointly approximately 110 papers in peer reviewed journals so far.

Currently, there are 3 postdoctoral fellows from China in Dr. Chiou's lab and 3 Chinese graduate students studying in the department. He has been appointed as honorary/visiting professor of Peking University, China Pharmaceutical University, Nanjing Medical University, Nanjing Medical College of TCM, Zhong Shan Medical College, Jiansu Institute of Materia Medica and China Academy of TCM. He has active research collaboration with at least a dozen of most respected institutions in China.

Dr. Chiou is trying to create a world class **International Center for Research and Development of Ophthalmic Drugs from TCM (ICOT)** in China. The primary collaborators include, but are not limited to, China Academy of TCM, Peking University Eye Center, Peking Union Medical College, Zhong-Shan Medical College, and Nanjing Medical College of TCM. This conference facilitated the establishment of the **IOCT** and a rapid progress be made in China-US relations with a special emphasis on **Scientific Development of TCM to Address the Aging World**.

It is critical to have sufficient funds for research. In Chinese side, the scientific development of national treasure (TCM) plus the involvement of top-level TCM institution (China Academy of TCM) makes it favorable for securing the research funds. In American side, the development of TCM research is still in the infant stage. Thus, obtaining research funds for TCM research could be harder. Yet, start-up funds are made available from College of Medicine and Health Science Center. Others include the Office of Complementary and Alternative Medicine in NIH and pharmaceutical industries, such as Bristol-Myers. With a strong support from this conference, I believe the funding for TCM research should be forthcoming.