What do we expect from Traditional Chinese Medicine in the COVID-19 Pandemic?

Leung Ping-chung\textsuperscript{1,2,*}, Chan Chung-lap Ben\textsuperscript{1}, Wong Chun-kwok\textsuperscript{1,3}

\textsuperscript{1}Institute of Chinese Medicine, The Chinese University of Hong Kong, Hong Kong, \textsuperscript{2}State Key Laboratory of Research on Bioactivities and Clinical Applications of Medicinal Plants, The Chinese University of Hong Kong, Hong Kong, \textsuperscript{3}Department of Chemical Pathology, The Chinese University of Hong Kong, Hong Kong

ABSTRACT

Traditional Chinese Medicine has a rich background on the Control of Infection or Infection-like diseases. The over 3,000 years’ history has enjoyed colourful descriptions of remarkable healers; their innovative philosophical thoughts and creation of treatment modalities. Classic formulations advocated for febrile illnesses have been popular ever since, for common cold and influenza like symptoms, and have provided the mainline defense in repeated episodes of epidemics. The common explanation is that they boost up the immuno-defense. We all witnessed different choices of ancient formulae have served every epidemic in China in the past 100 years. Now that we experience coronal virus epidemic one after the other, from SARS to COVID-19, it is time that we should seriously work out the efficacy background of the popular formulae: from bench work to clinical effects; from Treatment to Prevention. Prevention will be the most important challenge while vaccines are either absent or partially effective.

Keywords: Pandemic, Chinese Medicine, COVID-19, Prevention

At the time of preparing this paper, the COVID-19 pandemic is not yet over. In China where the pandemic started, the peak of the crisis is definitely over. Other places in Asia and Europe appear to be following. In the United States attention is still concentrating on the “Peak” while earnestly looking forward to the downward trend. In the Southern hemisphere, with the exception of Australia which apparently is following European countries, the different States in Latin America and Africa might still be expecting rather unpredictable development.

China, though seriously hit and involving mainly one extremely densely populated central city of over 10 million people and its whole province, seems to have pulled through smoother than expected with proportionally lesser people infected and low mortality. One popular theory is that Traditional Chinese Medicine could have helped. The common belief also happened 17 years ago in the SARS epidemic.\textsuperscript{(1)} Within both epidemic episodes, Traditional Chinese Medicine has been included in the treatment protocols under divergent directions, and at different stages of the infections: from mild, moderate to severe situations. This practice should not be mistaken as a health policy in the special situations of epidemic threat when Central and Regional Government Disease Control Units put out strong recommendations for the application of Traditional Chinese Medicine.\textsuperscript{(2)} In fact Chinese people in general, have a deep-rooted trust on Traditional Chinese Medicine (sometimes reaching biased levels) and would heartily support the practice of using Traditional Chinese Medicine together with conventional clinical treatment in the hospitals and outside. This culturally inherited belief deserves full respect given the strong historical background of Traditional Chinese Medicine. Yet at the same time, one should accept the challenge: more scientific proof in the strict sense of modern requirements would be required to justify the popular use.

FROM FOLK PRACTICE TO SERIOUS CONSIDERATIONS

Upper respiratory tract ailments: presenting with “running nose”, “feverishness”, “dry mouth”, “soar throat” to “early dry cough” etc. are common among people of all races and ages. People like to group the consortium of symptoms into a simple term of “Cold”, or “Flu-like symptoms”.

When experiencing a “Cold”, people of different communities have inherited from older generations different ways to overcome the ailments which vary from changes of personal habits to taking of special supplements. For the
Chinese people, they resort to Traditional Chinese Medicine Proprietary Drugs (or Chinese Patent Medicine).(3)

The “cold” syndrome has been described in the earliest Chinese Medicine Classic Neijing (Book of Internal Medicine) among other disease related philosophy and practices. “Cold” syndrome as one of the most frequently experienced febrile illness, naturally deserves healers’ attention since more than 3000 years ago.(4) They took it their responsibility to provide ways to get rid of the syndrome and prevent it from giving more harm. Herbal formulae were created for such purposes. Throughout the ages, epidemics had been major health challenges. For every epidemic, healers learned more about practical treatment and more herbal formulae were created with repeated accumulation of knowledge. Epidemics affected large populations. The large number of infected people would not be able to obtain individual medical consultation and care. Hence common “anti-cold” formulae were created for the good of all infected in spite of the basic belief of Traditional Chinese Medicine that the individual’s special physiological state should be checked by the expert before the taking of medicine.(4) These herbal formulae have been presented to the general public as a special service for special needs.(5) In the early days, they are considered ‘Folk Practice’. Today in modern communities, they are the proprietary, “off-the counter” drugs. People understand that they are inherited from the classics, indicated for ailments of all people and are safe. For the hospital practitioners, they are referred as “Chinese Patent Medicine”.

Coronal viruses have been responsible for epidemics in human history before and after it is scientifically known. The biggest disaster happened in 1918-19 when the “Spanish influenza” was reported to have infected 20,000,000 and killed over 20 million people. During those years Traditional Chinese Medicine in China was mainly “Folk Practice”.(6)

Influenza was widespread in China in 1918—19 as were reported in old journals (7,8,9,10,11,13,14), but it was relatively mild and less lethal than elsewhere in the world, despite the generally poor sanitary conditions at that time. Although some researchers in Western countries believed that many people in China had previous exposure to the virus and so had gained some degree of immunity. We think this might be only one of the possibilities. The other likely explanation was that Traditional Chinese medicine might have played an important role. According to the theory of Traditional Chinese Medicine, influenza is classified as Wen Bing (epidemic febrile disease) or Shanghai (febrile disease). Well-known examples of effective herbal formulations include mahuang xingren shigao decoction created by Zhang Zhong Jing (Han Dynasty), Yu Ping Feng San (Zhu Zheng Hen, Yuan Dynasty) Sangjiu Yim and Yin Qiao San (Wu Ju Tong, Qing Dynasty). (12,13) The use of Chinese Medicine as anti-epidemic therapy had stood the test of time, was still trusted and maintained its popularity. Since literature research on the impact of “Spanish influenza” does indicate that the Chinese people in China survived much better than people in the USA and Europe, and Chinese people during that period relied invariably on Chinese herbal medicine as the only form of treatment and prevention, we should be encouraged to go further to understand more about Chinese medicine and influenza.(13)

In the subsequent 100 years after the “Spanish Pandemic” of Influenza, the influenza virus had been responsible for 3 other serious epidemics in China and Hong Kong; and at least 8 more regional epidemics in the world.(3) Every time when China experienced the epidemic, herbal medicine would be used for treatment. In the recent decades ‘folk medicine’ has given way to different types of Chinese Patent Medicine which was widely used during the epidemics.

Since ten years ago, research has followed closely the need for Chinese Patent Medicine for influenza treatment. Zhang in 2006 reported 117 published articles discussing about the value of Chinese Medicine in influenza treatment. Of these, 13 were using classical formulae while 61 used modified formulae of classical origin.(14) Altogether about 300 different herbs were included in the different choices.

Another study on the clinical trials for influenza using Traditional Chinese Medicine in 2006 indicated that of the 350 reports 18 used classical formulae, and 73 others used modified formulae. A large number of these formulae had been converted to “Chinese Patent Medicine”.(15)

The timing of using Chinese Medicine in the recent epidemics for the infected patients varied from early to advanced stage, but there was no special mention about the very advanced stage when complications like pneumonia occurred. Presumably under the most adverse situations patients would rely on hospitalization and other treatment. (16) The Centre for the Prevention and Control of Diseases in GuangDong has given a detailed instructions on the management of influenza, from personal care to specific Chinese Medicine items for the citizens.(16)

In spite of the popular use of herbal formulae specific for the prevention of seasonal influenza attacks throughout China yet in the past ten year only four very brief published reports on clinical trials are available. The target populations were medical staff,, people in close contact; and students. The sample size varied from a few cases to over 20,000. Ignoring the low quality of trial, the general impression given about the preventive effects were good: infection rate was comparatively lower.(17,18,19,20)

After the Influenza outbreaks a new coronal viral epidemic: the SARS attack happened in 2003.

During the SARS outbreak, like the previous influenza epidemics, Traditional Chinese Medicine was included into many of the treatment programs. After the epidemic WHO held a special meeting with international participations to
evaluate the effects of Chinese Medicine in the combat against SARS. The complexity of the Chinese Medicine prescriptions together with the chaotic situation of the epidemic, did not allow a proper evaluation. However, many reports gave convincing observations about the value of symptom controls like improving dyspnea and fatigue; improving oxygenation, lessening steroid dependence and hastening rehabilitation.(1) The report was strictly related to treatment. No report on Prevention was given.

Leung in 2007, well after the SARS crisis, collected all available Chinese publications during the 2003-2005 period which gave a full picture about the use of Traditional Chinese Medicine for SARS patients. The review revealed that there was positive but inconclusive evidences about the efficacy of the combined treatments using Chinese Medicine as an adjunct. However, the positive effects of fever responses, better pneumonic control, steroid reduction and some evidence of immunological boosterings should encourage more research on the Prevention side.(19)

During the SARS period, among the numerous reports about the favorable results using Traditional Chinese Medicine, there were only three organized clinical trials using Chinese patent medicine as preventive agents. Two clinical trials on prevention were reported in the Beijing area: one with a large cohort (3561 cases); the other with 163 cases only. Popular anti-flu formulæ were used for periods of 6 days and 12-25 days.(20,21) Unfortunately the two reports gave only very short accounts of uncertain value. Lau and Leung reported a clinical trial at the peak of the SARS crisis in Hong Kong aiming at the prevention of contacting the disease among the at risk medical workers serving SARS patients. An innovative formula combining two popular patent Chinese Medicines: one from Northern China, the other from the South, with the aim of achieving better harmony was used. 3160 workers were given 2 weeks’ consumption after which infection rate and adverse effects were studied. Other hospital workers not consuming the formula were used as controls. The results showed that none of the herbal group contracted the infection, compared to 0.4% infection rate among the control group. Adverse effects were minimal.(22) The authors advocated more research studies on the preventive value of Chinese Medicine, particularly along the line of immunomodulation.

THE CURRENT COVID-19 CRISIS

17 years after the SARS epidemic, the COVID-19 attack started in January 2020. The urgent need for interventional clinical and epidemiological managements started another call in China for the combined use of standard treatment together with Traditional Chinese Medicine.

The Commission of the People’s Republic of China issued “Guidelines on the Diagnosis and treatment of coronavirus disease 2019”. In the sections related to the use of Chinese Medicine: 14 types of Chinese Patent Medicine (CPM) are officially recommended for the treatment and prevention of the disease. 8 of these (57%) are herbal injections while only 6 (43%) are oral preparations.(23) It is clear that the recommendations are mainly for the treatment of hospitalized patients. Indeed, analysis of the different items indicated that the oral CPMs were indicated for symptom relieves like cough, and gastro intestinal upsets. The rational for choosing them was mainly based on literature support from classics, not on recent evaluations of clinical trials.(24)

As far as the current COVID-19 is concerned, 11 on-going clinical trials with divergent targets: from mild, moderate to critical cases have been arranged in different cities in China, registered under the Chinese Clinical Trial Registry.(25) These trials are organised for diagnosed cases receiving conventional treatment in hospital settings, not specific for preventive purposes.

AFTER DECADES OF CORONAL VIRAL ATTACKS, WHAT SHOULD WE EXPECT FROM TRADITIONAL CHINESE MEDICINE TODAY

During the SARS and COVID-19 crises there were outcries for effective therapy to get rid of the virus and a timely created vaccine to prevent the viral attack.

Because of the unknown nature of the new viral diseases, therapy takes the form of observational trials. Many new drugs and old ones were put to trials for possible efficacy. Temporary results, though quick to reveal, might not be able to stand future challenges unless uniform evidences are available when the pandemic ends.

Advocates of herbal medicine have made assumptions that since reports on beneficial effects of herbal treatment are plentiful, further pharmaceutical development should be considered. This sounds logical but the chance would be doubtful because of the nature of the virus. Viral control is a game of blocking viral replication which starts from before its entry into the cell; then if it has already entered, blockage to its multiplication. Molecular mechanisms of proteomic nature are involved. It is difficult to imagine that herbal extracts, or big chemical molecules could do the job. Pharmaceutical enterprises would be hesitant to get involved in such remote fantasies.(26,27,28)

Pharmaceutical investments instead prefer to concentrate on the creation of vaccines. Again because of the complexity of the mechanisms of viral invasion the pathway of vaccine production could be problematic. Over eighty laboratories are already gaining support from various sources in a heated competition on vaccine production.(29) Inspite of the claims that timely productions are expected within a few months, a realistic estimation, for the release of a vaccine with reliable protective function will need one to two years.(29)
So there is an unavoidable waiting time, and unpredictability too.

The overwhelming enthusiasm on vaccine production is challenged by other known facts: the effectiveness of antiviral vaccines might not be as good as revealed during the research period because of the frequent dynamic changes of the RNA sequencing of the corona virus. In addition, elderly people and chronically ill patients might not be suitable for vaccine administration. (3,30)

While we are waiting for effective vaccinations to stop the pandemic we could take a more comprehensive view on alternative ways to protect people exposed to the viral threat: they are the medical attendants taking care of the infected patients, their family members and close contacts. At the height of an epidemic countless numbers of people would be at risk.

Specific supplements might serve the purpose of protecting the at-risk people through the boosting of their innate immunological defense. Vitamin D research enthusiasts have pointed out the laboratory evidences of this vitamin in the boosting of innate and adaptive immunological responses of the individual against external biological invasions.(31) Vitamin D’s clinical effects against cold and influenza like infections are also plentiful.(32,33) Since we have reliable observations on the effectiveness of a number of Traditional Herbal Formulæ and Patient Chinese Medicines on the treatment of mild presentations of influenza infections in the first place, and subsequently during the SARS epidemic, we could start in-depth studies to prove their preventive effects.(34) as the first step towards wider recommendations.

CONCLUSION

From the very early days of Traditional Chinese Medicine, one area of special concern has been infection treatment described as “febrile illness” in the individual. Documented instructions are plentiful: from nutritional intake, personal habits to bodily trainings. When “febrile illness” extends from the individual to the community, an epidemic (wen yi) results. With regard to this fearful development, measures to be taken like isolation: from household, community to the whole county/city “lock-downs” and other sanitary manoeuvres have all been documented. Details of those instructions appear surprisingly similar to current Public Health Instructions. Vaccine was unknown in those days. What about prevention?

Maintaining perfect health is considered everyone’s responsibility and those who do well will not be challenged in an epidemic. While treatment options are much emphasized and have always been up-graded with the dynasties, treatment for the mild cases to avoid deterioration has also been emphasized. This practice, in the current sense, is equivalent to Prevention.

As we witness good results with treatment, the formulæ used for mild cases for the control of deterioration, could be considered also suitable for prevention against the viral attack. (34,35,36) Development of an evidence-based immune-boosting agent from the classical herbal formulæ for the Prevention of Viral Attacks would be very much expected from Tradition Chinese Medicine.

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