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The Efficacy of Chinese Medicine for SARS: A Review of Chinese Publications After the Crisis

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Abstract: During the SARS crisis in China, 40–60% infected patients, at some stages of their treatment, received Chinese medicine treatment on top of the standard modern medicine treatment. This practice was endorsed and encouraged by the Chinese Center for Disease Control and Prevention, and some details of the herbal treatment were recommended. A review of the publications during and after the SARS crisis enabled us to get an objective view of the true value of the adjuvant therapy using Chinese medicinal herbs. Of the 130 articles searched, 90 were of reasonable quality and contained sufficient information for the enlightenment of the situation. These were reviewed. The results revealed positive but inconclusive indications about the efficacy of the combined treatments using Chinese medicine as an adjuvant. Positive effects using adjuvant herbal therapy included better control of fever, quicker clearance of chest infection, lesser consumption of steroids and other symptoms relief. In a few reports, some evidences of immunological boosterings were also found. More caution is required on the allegation about the efficacy of herbal medicine for the treatment or prevention of viral infection affecting the respiratory tract, while more clinical studies are indicated.

Keywords: Herbal Treatment; SARS; Efficacy Review.

Introduction

In a Chinese community, the use of Chinese medicine is common. This practice is particularly common for those who suffer from illness, or when the community fears that it is under the threat of an epidemic.

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During the severe acute respiratory syndrome (SARS) crisis in China in 2003, there was so much uncertainty regarding the treatment of the viral pneumonia since the pathology was not clearly known and the treatment to be adopted was arbitrary. Many turned to Chinese medicine as a supplement to the uncertain treatment. Those who were severely affected and not responding well to modern treatment naturally looked towards Chinese medicine as an alternative. When the epidemic began to spread far and wide, healthy people immediately explored other means to prevent infection. As vaccination for the immunological protection against SARS infection was not available, herbal treatment became the alternative means of prevention.

The fear of infection fuelled the demand for prophylactic herbal treatment, thus leading to its administration in these desperate situations. Very soon, an outcry for an "integrated approach" using both modern and traditional medicines developed.

When the trend spread throughout the Chinese community via the media, it moved everyone's hearts as it sparked off a cultural longing which lay dormant in every Chinese person's soul — the old tradition was expected to come to the rescue of the desperate. Unchallenged accounts of the successes using traditional medicine became popular. It took no time for the belief to become prevalent and so the assumption that "integrated treatment" gave better results became widely accepted.

Now that we are facing a new threat of viral infection — the Avian Flu — which is not fully known to us and apparently much more virulent, we should have an exploration on the possible treatment options. If the available anti-viral or anti-flu pharmaceutical agents are not expected to be effective, alternative options become important. Alternative options used during the SARS period should be seriously assessed to get the true picture whether they could be used in any future flu epidemic.

Apart from general readings and media coverage on the use of traditional Chinese medicine during the SARS epidemic, there were academic reports giving details about the combined treatment from China. A critical analysis of these reports should be useful in the study of the real situation. Did Chinese medicine really help during the SARS epidemic? Did Chinese medicine reduce mortality and morbidity?

There is a myriad of Chinese literature on SARS treatment published after the SARS epidemic in China. A Medline search and Wang Fang Data revealed a total of 130 articles. After excluding those of really poor quality, there were 90 that could be reviewed with the aim of understanding what and how much Chinese medicine had achieved in the process of patient care. (Liu *et al.*, 2004)

A proper meta-analysis is difficult because of the low quality of the reports. As a compromise, a review of what the Chinese medical practitioners claimed to have achieved and a special analysis of the large scale Chinese reviews on their own reports, would give a reasonable understanding of the mode of application of Chinese medicine and what were the objective accomplishments during that period.

Of the 90 selected papers in Chinese language, 20 were of high quality. These were given more attention and analyzed in great detail. Seventy other papers were carefully read to get a general picture to allow a useful analysis.

Achievements Claimed by the Chinese Medicine Practitioners

During the SARS period, the unanimous conclusion among the Chinese medicine practitioners was, patients treated with conventional methods fared better if they were also given Chinese medicine.

According to a report from Hunan province: "From a general statistical analysis, up to June 20, 2003, there were a total of 8461 cases of SARS worldwide, of which 804 died, giving an average mortality rate of 9.5%. In contrast, China reported 5,326 cases of SARS with 347 deaths, and a mortality rate of 6.5%. Excluding the China data, mortality rate was nearly 15%. The lower mortality rate could be attributed to the inclusion of Chinese medicine in the treatment. In fact, if only those hospitals giving integrated treatment were counted, only 28 out of 844 died, and the mortality rate was only 3.3%."

The simple, apparently logical conclusion thus made was obviously biased, since in China, particularly during that chaotic period of SARS, under-reporting on mortalities, data confusion and imperfect categorization, were all very common.

In fact, during the severe acute stage of SARS, all hospitalized patients should have received intensive treatment regimes which might include oxygen therapy and special care in special hospitals under the care of modern practitioners: Chinese medicine practitioners directly participated in the treatment processes only under rare, special circumstances. One would not be surprised that the enthusiasts built their arguments, not basing on genuine experience, or proper reports, but on speculations, logical thinking and limited experience (Shao *et al.*, 2003; Zhao *et al.*, 2003).

Some reports and analysts did attempt to specify areas and parameters of concern when comparing results of treatment using modern hospital practice alone or combining with Chinese medicine. These parameters included mortality, fever, chest radiography, steroid consumption, secondary infections, etc. (Lin *et al.*, 2003). Other outcome measures included complications induced by steroids, remission time of symptoms of lower respiratory tract pathology (cough and shortness of breath), adverse events, laboratory parameters like loss of SARS-COV in cell cultures and PCR tests, and T-lymphocyte subset counts including CD3, CD4, CD5 and CD8 (Wu *et al.*, 2004).

Although the special parameters did give objective data for comparison, no detail of the parallel clinical conditions were given; neither were the modern treatment details. Likewise, details of Chinese medicine treatment were not given. These deficiencies made comparison impossible. The claims for superiority would appear speculative.

Moreover, looking at these reports which did attempt to make logical and useful observations and deductions, one readily identified the difficulties of interpretation because of the total lack of information about the timing of combined treatment, the agents used and their durations, etc. The claimed achievements of shorter time required to control a high fever, better control of symptoms like respiratory distress, smaller doses of steroidal preparations, lower mortality, better laboratory results, etc. therefore bore limited scientific value.

Large-Scale Reviews Done in China on Multiple Reports Published in Chinese Language

While the practical value of understanding more about the claimed benefits of integrated Chinese medicine with standard hospital management is well-shared, many clinicians and scientists with epidemiology background in China have made attempts to critically analyze the data contained in a variety of published reports in different journals in China. Some of these reviews utilized the recommended methodology of system review for clinical results (Cochrane); others just tried to objectively classify the available data and compare them with those that did not use of Chinese medicine. All reviews covered a collection of publications and the authors made attempts to give critical analyses.

Liu *et al.* (2004) applied the established methodology of systematic review and meta analysis in a search for randomized controlled trials available from manual and electronic searches, comparing the differences between conventional treatment results with those of integrated therapy. Methodological quality of the trials was assessed by generalization of allocation sequence, allocation concealment, blinding and intention to treat.

Liu reported that eight randomized controlled trials (488 patients with SARS) were analyzed. The methodological quality was reported as generally low. However, the combined therapy showed a significant reduction of mortality (relative risk 0.32 [95% confidence interval {CI} 0.12 to 0.91]), shortened duration of fever, symptom relief, reductions in chest radiograph abnormalities, and reductions in secondary fungal infections among patients receiving glucocorticoids. There were no significant effects on quality of life or glucocorticoid dosage. The conclusion was: Chinese herbal medicine combined with modern conventional medicine might have beneficial effects in patients with SARS. The evidence was insufficient because of the low methodological quality of the trials included.

Hao *et al.* (2005) from Jilin, China, selected 18 published articles for analysis. Six articles did not have a control group, three articles did not have parameters of treatment results, and all reports did not include follow-up enquiries. The only clear observation made was that the combined treatment group gave a lower mortality rate.

Wu *et al.* (2004) from the Chinese evidence-based medical center in Sichuan province reported their review based only on nine studies which they considered qualified, in spite of identification of serious areas of bias. The combined therapy was found to have reduced mortality, reduced fever clearance time and symptom remission time. No difference was found in the symptom scores of convalescence, cumulative doses of steroids, and inflammation resolution time.

Zhang *et al.* (2004) another group of epidemiologists from the same Chinese evidence-based medical center in Sichuan, conducted their literature search and included only six studies which fulfilled their inclusion criteria. Only one study was graded A, while five others were graded B. Results showed that only lung infiltration resorption was significantly better in the combined treatment group. Mortality and cumulative doses of steroids were not found to be different in the two groups.

It seemed therefore, when individual reports were studied and analyzed, in spite of the obvious defects, many parameters of study, e.g. mortality or symptom controls, were found

to be more positive with the combined therapy group. However, when more reports were reviewed together, it became more difficult to acquire more convincing evidence.

If blood results could be taken as more objective and were subjected to less bias when results were assessed, one observation could be made. Many reports did show less reduction of the T-lymphocyte subsets of CD3, CD4 and CD5, and other evidence of the immuno-supportive nature of some herbal formulae and compounds (Zheng *et al.*, 2005; Csi *et al.*, 2004).

The review papers appeared divergent. There was some consensus on the decline of mortality with the group of combined treatment. However, it was a known fact that the most severe cases which were obviously under the greatest threat of survival, would be isolated and specifically maintained on respiratory support, hence would not be put to combined therapy with Chinese medicine. So only the non-critical cases were feasible for integrated therapy.

Discussion

The Chinese Center for Disease Control and Prevention under the Ministry of Health, China, issued special instructions and guidelines to the hospitals and clinics on special disease conditions and their diagnoses and treatments. In April 2003, the center gathered all the available information from both within and outside China about SARS, issued a complete set of instructions, containing details of etiology, diagnostic criteria, clinical manifestations, management, drugs used, preventive means and the use of Chinese medicinal supplements. The center labeled SARS as a form of Wan Bing (溫病). Wan Bing, meaning contagious diseases with high body temperature, was an important specialty within the traditional Chinese medicine discipline. It is not an exaggeration to consider this specialty as the most important branch of Chinese herbal medicine, which covers the most frequently encountered areas of the herbalist's practice, and is in command of numerous volumes of scholastic case reports, treatment programs and prescriptions.

Having labeled the current SARS outbreak as a form of Wan Bing, the Chinese Center for Disease Control and Prevention recommended treatment protocols, according to the Wan Bing classical teaching. With regard to hospitalized patients, the center's guidelines for treatment included the following:

(1) use antibiotics to prevent bacterial infection,
(2) consider using steroidal preparations to control excessive immunological responses,
(3) consider using herbal preparations as an adjuvant therapy, and
(4) use antiviral preparations. (Treatment of SARS, 2003).

From the official National Guidelines on the treatment of SARS, it was obvious that as far as hospitalized patients were concerned, modern medicine remained the mainstream treatment and Chinese medicine was used as a supportive adjuvant therapy. There were no instructions on the use of herbal medicine in the management of SARS during the early, pre-hospitalized stage or the later convalescent, rehabilitation stage.

An estimated 40%–60% of hospitalized SARS patients at some stage of their treatment, received an integrated approach, combining both modern and Chinese medicines. This was confirmed by the Deputy Minister of Health of Municipal Beijing at the end of the SARS outbreak.

This review of the Chinese publications from China after the SARS epidemic has, however, revealed positive but inconclusive results about the efficacy of combined treatment, using Chinese Medicine as an adjuvant.

In fact, one important publication after the SARS crisis summarized the total drug expenditure in the Beijing Xiao Tang Shan Hospital, which was built as an emergency set-up to accommodate over 680 SARS patients. The statistics given by the dispensary indicated that the majority of drugs used fell into the modern medicine categories, whereas only a small proportion was of Chinese medicine nature. The varieties of the latter included items for the control of symptoms like cough, high fever and diarrhea (Wang *et al.*, 2004). More caution, therefore, is required on the allegation about the efficacy of herbal treatment for SARS and more clinical studies will be required to explore the use of herbs for the treatment or prevention of viral infections affecting the respiratory tract.

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