

FEATURE ARTICLES

Applying Integrative Chinese and Western Medicine in Fighting SARS

EDITORIAL Severe Acute Respiratory Syndrome (SARS) is a new intractable disease worldwide, its onset is acute, its infectivity and mortality is high, the knowledge about its etiology and pathogenesis is insufficient, the experience on SARS treatment awaits accumulation. Following pilot experiences of applying ICWM in fighting SARS is most valuable with scientific significance.

Trains of Thought in Treating Infectious Atypical Pneumonia with Integrative Chinese and Western Medicine Approach

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Infectious atypical pneumonia (also called severe acute respiratory syndrome, SARS by WHO) is a new type of infectious disease, whose disease condition is fierce and ferocious, rapid in changing, seriously threatened human health and life. The author has treated around 200 SARS patients in Guangzhou and Hong Kong with integrative Chinese and western medicine (ICWM) approach from January 2003 till present. Now I would like to make a comment on ICWM in treating SARS.

According to the clinical evolution, four stages of illness course are divided with respect of TCM and WM as follows.

Early stage: After onset around 1-5 days, ventilating Fei qi to remove dampness and clear-up heat principle, based on the variety of damp-heat and wei-qi domination, various recipes as Sanren decoction (三仁汤), Huopu Xialing decoction (藿朴夏苓汤), Maxing Shigan decoction (麻杏石甘汤) and Shengjiang powder (升降散) were administered. According to WM, this is the replication stage after viral invasion, symptomatic supporting therapy such as anti-viral, anti-inflammation, liquid supplementing, vitamin, antipyretic analgesics could be used. At present there is no specific effective anti-viral agents, other anti-virus agents or antibiotics should not be abused, and symptomatic and supportive treatment should be used as chief

measures. At this stage, clear-up heat, detoxify and remove damp herbs could inhibit virus and inflammatory reaction.

Middle stage: Around 3-10 days after onset, the pathogenesis mainly is damp heat with toxin, obstruct qi function as characteristics, clear-up damp-heat and ventilate should be stressed, according to difference of damp or heat domination and obstruction site, the modified recipe of Ganlu Xiaodu pill (甘露消毒丹), Haoqin Qingdan decoction (蒿芩清胆汤), Dayuan decoction (达原饮), Lianpu decoction (连朴饮), Xiaochaihu decoction (小柴胡汤), Tingli Dazao Xiefei decoction (葶苈大枣泻肺汤) or Weijing decoction (苇茎汤) is used. For early and middle stage patient, it could be supplemented with Houttunya injection, Qingkailing (清开灵) injection or Shuanghuanglian (双黄连) injection to strengthen clear-up heat and detoxify. At present, the non-steroid anti-inflammatory agents such as brufen, indomethacin could be given, the antagonists and inhibiting agents of inflammation mediator, in severe case even administration of adequate dosage of glycocorticoid is adopted. In this stage, regulating qi flow to remove dampness and detoxify herbs which were helpful in clearing away endotoxin and inflammatory mediator, ameliorating systemic toxic symptoms and alleviating damage of tissue cells.

When lassitude, fatigue and weak pulse appeared which indicated that the vital qi was injured, use Shenmai injection (参脉注射液, SMI) to assist vital qi. It also denoted that the patient's immune function began to lower, and tissue cell damage was obvious. SMI could adjust immune status of organism, elevate the cellular immunity, at the same time, it has the effect of anti-free radical injury and protecting tissue cell damage.

The treatment of early and middle stage is to slow down the disease progress, abate the condition, particularly alleviate the severity of critical stage (peak stage), ameliorate the tissue cell dam-

age as the focus of treatment. Treating the early and middle stage disease appropriately could lower the severity of illness, facilitate the treatment for peak stage and the control of disease.

Critical stage (peak stage) mostly occurred around 7-14 days after onset. In treating patients of critical stage, the treatment should be to clear-up heat to detoxify, regulate qi flow, activate blood circulation and remove dampness, ventilate Fei and remove accumulation, associate with replenishing qi-yin if necessary, Ganlu Xiaodu pill supplemented with Tumeric root, fresh Cat-tail Pollen, Motherwort herb, Goldthread root, Inula flower, Lepidi seed, Platycodon root and Bitter orange; to replenish qi-yin by using Pseudostarwort root, heat exuberant supplemented with gypsum, antelope horn powder (antelope or buffalo bone). For qi-ying flare up syndrome, supplemented with Qingwen Baidu decoction (清瘟败毒饮). For late stage patient, the reinforcing Pi qi, regulating qi flow, activating blood circulation, removing phlegm-dampness, purging Fei and removing blocking herbs were used, Buzhong Yiqi decoction (补中益气汤) combined with Wuhu decoction (五虎汤), Tingli Dazao Xiefei decoction was applied for treatment. And supplemented with Erchen decoction (二陈汤), Sanzi Yangqin decoction (三子养亲汤), Xiaochengqi decoction (小承气汤) to strengthen the qi flow regulation, remove damp and blocking, Bugleweed, fresh Cat-tail Pollen, Motherwort herb, Peach kernel, Safflower to activate blood circulation to remove stasis were used; for those patients complicated with qi-yang deficiency and exhaustion, supplemented with prepared daughter root of Monkshood, Fennel fruit, Cinnamon twig; complicated with edema, Wuling powder (五苓散) and Zhenwu decoction (真武汤) were used; for blockage syndrome, heat blockage taken Angong Niu Huang bolus (安宫牛黄丸) or Zixue powder (紫雪散), cold blockage taken Suhexiang pill (苏合香丸); for collapse syndrome, yang qi collapse was indicated for Sini decoction (四逆汤) orally taken, qi-yin external collapse Shengmai powder (生脉散) or Dushen decoction (独参汤) orally taken, and appliance of syndrome differentiation the intravenously used Shenfu injection (参附注射液), SMI, Salvia injection, etc. were used. For severe case, adequate dosage of glycocorticoid was used, it was not suitable for large dosage and long-term administration, and ventilation therapy should be used in respiratory failure. In this stage, the secondary infection of other microbes should be prevented. When monitoring the functional changes of heart, lung, liver

and kidney, the symptomatic treatment should be performed in time. In this stage, Replenishing qi flow and nourishing yin to assist vital qi could adjust immune status of the organism, elevate cellular immunity, at the same time it has the effect of anti-free radical injury and protect tissue cell. Activate blood circulation could improve microcirculation and blood hypercoagulation status and improve the tissue perfusion.

TCM syndrome differentiation for treatment is individualized treatment according to the chief pathophysiology of different individual and various stage, it might alleviate inflammatory injury, protect tissue cells, adjust immune status of organism, raise the cellular function, facilitate the illness improvement and recovery.

Late stage occurred mostly 10-14 days after the onset. Those belonged to both qi-yin injury could select modified Shengmai powder or Shashen Maidong decoction (沙参麦冬汤), belonged to Fei-Pi qi deficiency syndrome with damp, phlegm or stasis, who could select modified Li's Qingshu Yiqi decoction (清暑益气汤) or Shenling Baizhu powder (参苓白术散) combined with Xuefu Zhuyu decoction (血府逐瘀汤); those belonged to Fei-Pi qi deficiency could select Buzhong Yiqi decoction; those belonged to damp-heat-stasis evil lingering could use Sanren decoction supplemented with fresh Cat-tail Pollen, Motherwort herb, Peach kernel, Safflower, Platycodon root, Bitter orange and other herbs to treat patient with clear-up heat, remove dampness, regulate qi flow to activate blood circulation; during this stage the patient appeared skin rash, white bud, skin itching, the recipe selected was Mahuang Lianqiao Chixiaodou decoction (麻黄连翘赤小豆汤) or Yinqiao powder (银翘散) supplemented with broom cypress fruit, Dittany bark, Ledebouriella root, Cicada slough, Morus leaf, Red peony root, Peony tree bark, Smilax glabra rhizome, fresh Fleeceflower root, Rehmannia root, etc. In this stage SMI, Astragalus injection, Xiangdan injection (香丹注射液) and Shengmaiyin (生脉饮) oral liquid, Xuefu Zhuyu oral liquid, Bailing capsule (百令胶囊) could be used with syndrome differentiation. This stage is the recovery stage of WM, the treating principle with symptomatic treatment was performed, the glycocorticoid was withdrawn or in reduced dosage. And in this stage using TCM could improve microcirculation, promote absorption of inflammation and tissue cell function recovery of organism.

In short, we understand clinically that the

effect of ICWM in treating SARS is embodied as follows: (1) Alleviating various symptoms occurring in the course of SARS such as fever, headache, nausea, vomiting, anorexia, diarrhea, fatigue, lassitude, short breath, dyspnea, etc; (2) Slowing down the development, alleviating the severity of disease, particularly under peak stage and ameliorating the illness; (3) Under certain degree reducing the dosage of WM to avoid the side-effects of western drugs; (4) Promoting the rehabilitation of the patients, particularly the absorption of pulmonary inflammation and the recovery of systemic function; (5) Shortening the illness course and hospitalization period. The possible mechanism of ICWM treatment is: (1) Antivirus and inhibit its replication; (2) Anti-inflammation to alleviate the damage of inflammation; (3) Immuno-modulation; ICWM, through the above-mentioned mechanism and effect, could bring about the disease under control and help the patients passing through the difficulties.

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Treating SARS with Integrative Chinese and Western Medicine

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An abrupt attack of severe acute respiratory syndrome (SARS) broke out in Beijing in the spring in 2003, with thousands of patients suffering from the malady and hundreds of victims on the death toll, which seriously threatened the people's life and

health with a heavy psychological blow. This is a catastrophe for the whole mankind, and every responsible medical worker should wholeheartedly concern themselves with and plunge into this struggle to safeguard human survival. Sterilization and isolation have been the most efficacious preventive and defensive measure so far. The treatment regimen needs to be consummated incessantly, and the participation of traditional Chinese medicine (TCM) is imperative, for integrative Chinese and western medicine (ICWM) is the unique clinical medicinal mode in our country. The TCM and ICWM clinical medicine would be testified during the process of treating SARS, and the

academic level would grow and get popularized as they try to keep pace with the times.

TCM has been in service for our nation's health care for thousands of years, with abundant experiences accumulated, including those in combating febrile infectious diseases, and specific herbs and recipes for infectious diseases having been discovered. In Ming and Qing dynasties even schools were established for the purpose of treating epidemics. After the founding of new China, TCM took part in treating epidemic encephalitis B, and the efficacy was elevated and the mortality rate lowered markedly, which was the beginning in treating epidemics with the ICWM approach.

WHO has affirmed that the pathogen of SARS is a new type of coronavirus, which might be originated from animals, and, owing to its new origin, man hasn't developed any immunity against SARS yet. The direct damage of virus on human tissues and human's immune response to virus are the common features of viral infectious illness. The point in remedy is to clear up the virus and suppress the hyperactive immune response, to regulate the organism to keep itself in normal status under stress, and to alleviate the adverse reactions and complications, so as to finally realize the aim of shortening the treatment course and lowering the mortality. And this is exactly where ICWM is superior. TCM treats viral infectious malady by clearing up heat to detoxify, and dispelling evil to support vitality. Although these antiviral measures showed effective in vitro, they failed to reach efficient antiviral concentration in vivo. But modern pharmacology revealed that the antiviral effect of Chinese herbs could be realized by enhancing human's antiviral capability, such as raising the phagocytic activity of macrophages, inhibiting the complement formation, alleviating the antigen-antibody circulatory immune complex (CIC) formation and the damage of CIC on tissues, elevating the granulocyte and lymphocyte in secreting interferon, interleukin-2, etc. The syndrome differentiation and treatment with TCM herbs could ameliorate symptoms by means of regulating the visceral function. Many new techniques such as etiological study, emergency medical agents, corticosteroids (CS) and antibiotics application of modern medicine have been widely used, and their advantage of high and swift efficacy is evident. ICWM is the combination of the two medical modes, and mutual complementarity of these two is a beneficial system formed by the Chinese people, which could be applied according to various needs of clinical manifestations.

The etiology of SARS is considered by TCM as pestilential qi. Its evil character is held by the majority of TCM scholars as warm-heat with dampness. The tongue picture in the initial stage is white, and as the malady develops, the tongue coating gradually thickens and becomes greasy, while in the recovery stage the tongue fur exfoliates and tenderness shows in tongue proper. During the course of illness, the tongue proper is light or dark red in the majority of the patients, and only a few showed bright red or crimson tongue coating. These are the chief basis for TCM clinical diagnosis and treatment. Therefore, the principal point in TCM treatment should be aimed at the damp-heat evil, in order to dispel the evil without impairing vitality, to solidify and protect qi and fluid, and to avoid the use of extremely bitter and cold herbs. The well-known specialist of febrile diseases, Dr. Wu You-ke in Ming Dynasty, advocated that febrile disease should be mainly treated with dispelling the evil pathogen. The majority of the victims of SARS were youngsters or of prime adulthood, because in them evil is exuberant and prevails over vitality. Although many deficiency symptoms appeared, evil should be dispelled first to support the vitality, and there is no need to take tonics too early as that could cause the evil pathogenic factor lingering. Our patients had all their lymphocyte subsets monitored, which got reduced after the onset, reflecting that the vitality was impaired by the evil. Those who used CS had it even more reduced. This can be taken as a parameter to reflect the status in TCM vitality, as it recovers naturally to normal count in the convalescent phase, proving the TCM theory that "well-being would be realized after evil is gone". And it awaits for further investigation whether the lymphocyte was destroyed or it is a matter of redistribution in the course of illness.

SARS is similar to other viral infectious malady in that it is a self-limited disease. In the majority of cases, the illness course undergoes for 3 weeks before entering the convalescence phase. At present the therapeutic measures are mainly to prevent serious damage of internal organs, reduce complications, assist the patients to smoothly tide over. The small sample data of randomized controlled study revealed that the ICWM group could reduce the number of CS applicants and their average amount used, and accordingly CS related hyperglycemia and the number of infected patients decreased. Finally the illness course got shortened and mortality lowered. Our study on the data of a much larger sample is going on. Before any specific

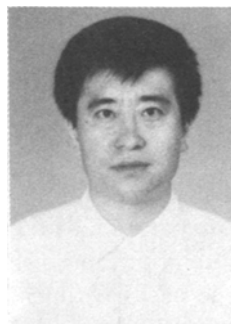
efficacious therapeutic regimen appear, that of ICWM treatment is a treating mode worthy of advocacy, particularly early intervention by TCM could possibly yield a beneficial effect on the final outcome of SARS.

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Understanding the Treatment of SARS with Integrative Chinese and Western Medicine

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SARS, the abbreviation of severe acute respiratory syndrome, is also called infectious atypical pneumonia in China, which is caused by coronavirus. Since it was discovered in Guangdong Province by the end of 2002, owing to its strong infectivity, it has been a huge threat to the life and safety of the Chinese people half a year later. And thanks to the swift and resolute measures adopted by the Chinese government and the tenacious struggle against SARS put up by the vast medical professionals and medical science personnel, at present the incidence and mortality of SARS has already been markedly reduced. However, we still couldn't loosen our vigilance. The following was the experience of the author who has been working in the SARS ward about the understanding of using integrative Chinese and western medicine (ICWM) in treating SARS for the reference of colleagues.

Application of ICWM in Treating SARS

At present, western medicine (WM) treatment is mainly symptomatic and supportive therapy, using gancyclovir, ribavirin, or in severe cases corticosteroid and antibiotics, owing to the lack of effective agents against virus infection. TCM has superiority in preventing and treating virus infection. We have observed many clinical manifestations of patients in the early stage. Besides fever, myalgia, fatigue, etc., the tongue proper of most patients was red or dark red, tongue coating thin white or thin yellow, or yellow-white mixed together, which is quite different from the observations in Guangdong, Hong Kong and some other

districts in South China, where the weather is damp, and the patients' tongue coating is thick and greasy. Such difference should be noticed in our treatment. But in the mid or late stage, there would appear the symptoms of dry mouth and throat, thirst, and the accompanied symptoms of dry cough, palpitation, anorexia, dark or dark purple tongue proper with little or no coating. While treating it with WM, we carried on TCM syndrome differentiation, supplemented with clearing up heat and detoxifying, reinforcing and nourishing qi-yin, activating blood circulation in order to formulate the TCM recipe in treating the patients suffering from different stages of SARS and good results were obtained. Our understanding is: from the early to the middle stage, such recipe as Yinqiaosan decoction (银翘散) to clear up heat for detoxification, ventilate Fei to purgate heat should be used, one dose every day, 7 days as one treatment course; for those whose body temperature is higher than 38.5°C, Gypsum, Anemarrhenae rhizome, Skullcap root should be added to potentiate the recipe's heat-clearing strength. Also the compound TCM patent preparations of composite Yinhuang (银黄) oral liquid or Qingre Jiedu (清热解毒) oral liquid could be used, 3 times daily, 2 ampoules per day, taken 7-10 days consecutively. Zixue powder (紫血散) or Angong Nihuang bolus (安宫牛黄丸) could be used for those with high fever, which at the same time should be combined with anti-inflammatory and symptomatic WM treatment. These principles for antifebrile and relieving symptoms have better effect than those with simple WM treatment. Patients in the critical stage, the majority of whom had got into the 9th to 12th day of their disease course, were indicated for the principle of heat-clearing-up, yin-nourishing, and blood cooling and activating, and what should be used for them is Qingwen Baidu decoction (清瘟败毒饮). And those with vexation and restlessness could be supplemented with Salvia root to clear stagnated heat, nourish Xin-blood and remove vexation; or should have intravenous dripping of Qingkailing (清开灵) and Salvia injection. For patients in the rehabilitation stage the principle of reinforcing and nourishing qi-yin, activating blood circulation, tonifying Fei and Pi was mainly adopt, intravenously dripping Shengmai (生脉) injection and Salvia injection combined with Shenling Baishu pill (参苓白术散) taken orally, with 10 days as one treatment course and 1-2 courses given. Using the above-mentioned principle, we can formulate different decoctions in the treatment of SARS. If the patients in the rehabilitation period have obvious symptoms of

dry mouth and throat, dry cough, Shashen Maidong decoction (沙参麦冬汤) or Yiwei decoction (益胃汤) should be used. For those who had used large dosage of corticosteroid over a long time, in order to prevent rebound after withdrawal of corticosteroid, Jingui Shenqi pill (金匱肾气丸) should be taken, and herbs for warming yang and tonifying Shen such as Psoralea fruit, Dodder seed, Cistanche herb should be added to the decoction.

The clinical observation of 20 or more SARS patients showed the superiority of ICWM treatment in treating SARS as it showed far better effect than that of simple WM treatment. It has the effect of quick defervescent action, relieving symptoms, promoting absorption of pulmonary exudation and pulmonary fibrosis prevention and amelioration. Its mechanism is possibly through modulating the immune function, strengthening antiviral capability or interfering replication of virus and inhibiting pulmonary fibrosis through activating blood circulation, but the precise analysis and mechanism await further systematic observation and deep-going study.

Application of Corticosteroid in SARS treatment

At present, the pathogenetic mechanism of SARS is not clear. But no matter lung tissue destruction is caused by the direct invasion of virus or indirectly through immune reaction, once large amount of pulmonary exudation is discovered by X ray chest film, application of corticosteroid has to be given as early as possible to inhibit the exudation, alleviate tissue cell injury, ameliorate the disease condition, and at the same time facilitate the prevention of pulmonary fibrosis formation. The dosage of corticosteroid should comply with X ray chest film and the severity of symptoms. In order to restrain the development of the illness, the initial dosage should not be too small. Take the currently used methylprednisolone for example, intravenous dripping of 160-240 mg every day would be appropriate, and in the case of those with severe toxic symptoms or serious SARS, double dosage could be used, even shock dosage therapy can be applied to supplement the ordinary dosage. Only when the symptoms get relieved, and X ray film manifests that pulmonary exudation has been absorbed more than before, could the dosage be gradually reduced, but the reduction should not be too fast, and the dosage should be reduced and interval between two reduction episodes shortened according to the disease condition. In general, the interval between two reduction episodes should not be less than 3 days. As for those severe cases of

SARS who were given large dosage and long-term application, in order to prevent secondary infection or induced GI tract ulceration and GI bleeding, one should use antibiotics and H₂ receptor antagonist, and for those diabetic patients one should take care to control the blood glucose.

If obvious dyspnea or asthma with oppressed feeling appeared in SARS patients or their arterial oxygen partial pressure gets lower than 80 mmHg, respirator mask should be applied for them to inhale oxygen as early as possible to relieve the symptom and help the patient to undergo the most critical period, thus reducing the mortality. Owing to over-aeration, sweating and urination, some patients usually manifested respiratory alkalosis complicated with metabolic alkalosis. In this case, besides mask oxygen inhalation, potassium salt should be supplemented, and if necessary, sedative should be added to adjust acid-base imbalance and electrolytes disturbances.

Over-scaredness is often one of the causes of aggravation and intractability of patients, particularly with severe SARS patients. Therefore, while using sedative to treat them, psychotherapy is also necessary, which, when possible, can be combined with music therapy: let the patient listen to his favorite musical or dramatical pieces to help him out of the scared mental state, which could facilitate the treatment of the disease as well as the prognosis. And then optimal outcome could be expected.

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TCM Therapeutic Strategy on Acute Lung Injury Caused by Infectious Atypical Pneumonia and Acute Respiratory Distress Syndrome

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Infectious atypical pneumonia (IAP) is also called severe acute respiratory syndrome (SARS) by WHO. In its development, around 20% of SARS can develop into the stage of acute lung injury (ALI) or acute respiratory distress syndrome (ARDS), active and effective treat-

ment of it constitutes the important basis for lowering mortality and reducing secondary pulmonary function impairment and pulmonary fibrosis.

According to our understanding of clinical manifestations and treating practice of SARS, and combining such understanding with our recognition of past pathophysiologic mechanism of ALI and ARDS, integrative Chinese and western medicine (ICWM) is helpful in elevating efficacy, lowering mortality and reducing complications in these stages of SARS. The fit in point of TCM treatment lies in that when treating them, it always aims at curing the patients of their pathologic characteristics.

Inflammatory Reaction and Oxygen Free Radical Injury

When ALI and ARDS appeared in SARS patients, the inflammatory reaction was amplified, excessive oxygen free radicals were generated and lipid peroxide produced, which would induce injury in pulmonary tissues and other organs which in turn constitutes one of the pathologic mechanisms for the formation of ALI and ARDS. In order to alleviate lipid peroxide caused tissue injury, one could, besides using anti-oxidants such as Vit C or N-Acetylcysteine (NAC), use herbal medicine to assist vitality for detoxification and activate blood to dredge the vessels, thus producing promising effect against lipid peroxide and ameliorating tissue injury. Studies showed Shenmai injection (参脉注射液, which can assist body resistance), Qingkailing injection (清开灵, which can clear up heat and detoxify) and Composite Salvia injection (which can activate blood circulation to remove stasis), all have good effects in antagonizing free radical injury.

Immune Inhibition and Secondary Infection

As to serious SARS, owing to the fact that both SARS virus and corticosteroid inhibits the immune function of organisms, it can affect the ventilating function of respiratory tract, increase the opportunity of secondary infection and double infection, such as the occurrence of respirator related pneumonia, lowered respiratory tract fungus and other virus infection, etc. Aiming at curing the patients of such complicated pathologic status as deficiency mixed with excess, TCM treatment focuses on regulating the immune status of organism. Hence large dosage of Shenmai injection (over 100 ml/day), and the use of American ginseng 5-10 g/day, taken orally to protect vital energy, assist vital qi and dispel pathogenic factors.

Gastrointestinal Dysfunction and Intestinal Flora Imbalance

Owing to the susceptibility of injuries in multiple organs caused by this disease and also the application of broad spectrum antibiotics, gastrointestinal dysfunction and intestinal flora imbalance is liable to occur. While adjusting antibiotics regimen, we should combine the treatment with Chinese medicine to “preserve Wei qi and store fluid”, adjust gastrointestinal function, improve the imbalance of intestinal flora, alleviate the intestinal bacteria translocation, reduce the endotoxin absorption, improve the appetite and promote the absorption of nutrients, for this has been proved to have positive effects in adjusting ALI and ARDS. The key point of its treatment is not to replenish Pi, but to regulate qi function, and to use aromatic agents to resume the qi flow of ascending-descending function of Pi-Wei.

The High Coagulation Stage of Disseminated Intravascular Coagulation (DIC)

In this stage DIC could appear in part of the patients. In high coagulation stage (DIC) of SARS, the TCM pathogenesis was damp-heat and epidemic toxin turning into dryness, internally closed Xinbao and blood vessel stasis. Besides using heparin to act against coagulation, TCM uses, in order to clear up ying to purge heat, open the aperture to dredge stasis, Xidi Qingluo Decoction (犀地清络饮, with buffalo horn in replacement of rhinoceros horn, Peony tree bark, Forsythia fruit, Bamboo juice, Rehmannia root, red Peony root, Peach kernel, Ginger juice), and at the same time, through intravenous dripping of Chinese patent blood-activating herbs such as Compound Salvia injection or Erigeron injection, tries to improve microcirculation and the status of high blood coagulation. When coma appeared, TCM resuscitative agents should be used.

In short, when ALI and ARDS appeared in SARS patients, the treatment should be started from deficiency and excess, to assist vital qi by dispelling evil, and the treating principle should be: Assisting vital qi to detoxify, and dredging the qi activity and blood vessels. The recipe should be simplified, but the medication should be done

through multiple means, i. e. the medicine should be given intravenously or orally. For emergency cases urgent method should be used, i. e. intravenous administration is preferred. The patients should be divided into three groups: One group is to have their vital qi assisted, for the purpose of which the first choice is Shenmai injection in large dosage, more than 100 ml/day; Another group is to be detoxified for the purpose of which the first choice is Qingkailing injection, 20 – 40 ml/day; Still another group is to have their blood activated and their vessels dredged for the purpose of which compound Salvia injection or Erigeron injection 30 ml/day is the first choice.

To take oral decoction according to individual characteristics and syndrome differentiation, one should follow the ancient teaching, i. e. , to “protect Wei qi and store fluid”, with the qi function of Triple Energizer dredged, Fei and Chang simultaneously treated to give evil pathogen an outlet, so as to put an end to the source of internal generation of phlegm. In the medication one should take care of the fact that bitter cold drugs could injury Wei but help get rid of damp, and warm dry drugs could aggravate heat and give rise to changes in disorder. Regulation of Wei-Chang should be done in accordance with the different degrees in severity of damp, heat, turbidity and toxic substance, and in this respect what should be selected are Giant hyssop herb, Magnolia bark, Tuckahoe, bitter Apricot seed, round Cardamom seed, Coix seed, Silkworm feces, Gleditsia seed, Goldthread rhizome, Pinellia tuber, Germinated Soya bean, Eupatorium herb, Medicated leaven, and Germinated Barley, etc. And also according to whether cold or heat dominates the patent drugs Huoxiang Zhengqi liquid (藿香正气水) or Gegen Qinlian pill (葛根芩连微丸) should be given orally. Besides, to those of mild damp-turbidity and exuberant heat-toxin, Xuanbai Chengqi decoction (宣白承气汤), Niuhuang Chengqi decoction (牛黄承气汤) and Zengye Chengqi decoction (增液承气汤) should be used to treat the bowel and intestine simultaneously so as to ventilate Fei and purge the bowel, thus providing an outlet for the evil pathogenic factors.

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