

Combination of Traditional Chinese and Western Medicine to Improve the Cure Rate of Elderly Patients with Severe Novel Coronavirus Infection

Duan Rubing^{1*}, Rao Dongping², Chen Qinxian³, Hu Miner⁴, Guo Jianghua¹ and Liping¹

¹Jiangmen Central Hospital Reproductive Center, China.

²Jiangmen Central Hospital Medical Record Room, China.

³Radiology department of Jiangmen Central Hospital, China.

⁴Traditional Chinese medicine department of Jiangmen Central Hospital Jiangmen, Guangdong, China.

*Correspondence:

Duan Rubing, Jiangmen Central Hospital Reproductive Center, China.

Received: 14 Aug 2023; Accepted: 19 Sep 2023; Published: 26 Sep 2023

Citation: Rubing D, Dongping R, Qinxian C, et al. Combination of Traditional Chinese and Western Medicine to Improve the Cure Rate of Elderly Patients with Severe Novel Coronavirus Infection. Clin Rev Cases. 2023; 5(2): 1-6.

ABSTRACT

Objective: To study the curative effect of traditional Chinese and western medicine on novel coronavirus's (COVID-19) patients in Jiangmen Central Hospital.

Methods: This study was a retrospective cohort study. A total of 582 cases of COVID-19 patients admitted to Jiangmen Central Hospital from January 2020 to March 31, 2023 were collected, and five indicators, such as cure rate, improvement rate, inefficiency rate, mortality rate and hospitalization time, were analyzed, and the curative effects and treatment days under different treatment methods were compared among the integrated traditional Chinese and western medicine group, the western medicine group and the Chinese medicine group.

Results: There was no significant difference in the cure rate, improvement rate, inefficiency rate and mortality rate of ordinary patients of all ages and severe middle and light years (≤ 65 years old) after treatment with integrated traditional Chinese and western medicine, pure western medicine or pure Chinese medicine ($P > 0.05$). The cure rate and effective rate of severe elderly patients (> 65 years old) were significantly higher than that of pure western medicine group ($P < 0.05$) and the ineffective rate was significantly lower than that of western medicine group ($P < 0.01$). There was no significant difference in improvement rate and mortality ($P > 0.05$). Except severe young patients (≤ 40 years old), the treatment time of western medicine group was significantly shorter than that of traditional Chinese medicine group and traditional Chinese and western medicine treatment group ($P < 0.05$).

Conclusion: The combination of traditional Chinese and western medicine can significantly improve the cure rate and effective rate of elderly patients and reduce the inefficiency of their treatment. Compared with Chinese medicine, western medicine has a better effect in shortening hospitalization time.

Keywords

Novel coronavirus infection, The cure rate, The improvement rate, The treatment time, Integrated traditional Chinese and western medicine.

Since December 26th, 2022, when the "Class B Management" was implemented for novel coronavirus infection, medical and health units at all levels have actively explored many measures, means and ways to treat patients in the case of large-scale epidemic

outbreak, and achieved certain results [1,2]. In particular, give full play to the wisdom of Chinese medicine, and actively treat patients infected in novel coronavirus by traditional Chinese medicine or integrated traditional Chinese and western medicine [3,4]. In order to objectively evaluate the clinical efficacy of traditional Chinese medicine and traditional Chinese and western medicine in treating novel coronavirus infection, this study retrospectively analyzed 582 cases of COVID-19 patients admitted to Jiangmen Central Hospital from January 2020 to March 31, 2023, and analyzed

their cure rate, improvement rate, inefficiency, mortality rate and treatment time under different treatment methods, so as to provide high-quality medical evidence for the treatment of COVID-19 infection with integrated traditional Chinese and western medicine.

Data and methods

Research objects from January 2020 to March 31, 2023, 585 patients with COVID-19 were admitted to Jiangmen Central Hospital, and 3 patients with missing key variable data were excluded, and finally 582 patients were included.

Admission Conditions

① Simple infection with novel coronavirus (that is, novel coronavirus infection or pneumonia as the main diagnosis); ② Age ≥ 18 years old; ③ Not pregnant and not in perinatal period; ④ No other major diseases (such as malignant tumor) affecting the survival of patients; ⑤ No mental illness.

Conditions for getting out of the group: ① novel coronavirus is infected with other serious diseases that affect survival (that is, novel coronavirus infection or pneumonia is the secondary diagnosis), such as malignant tumors, acute cardiovascular and cerebrovascular diseases, severe hypertension, etc. ② Age < 18 years old; ③ Pregnancy or perinatal period; ④ Patients with mental illness.

Patients with clinical classification refer to the diagnostic criteria and clinical classification in novel coronavirus Diagnosis and Treatment Plan (Trial Ninth Edition) [5]. (Hereinafter referred to as the "Plan"), and after the diagnosis of COVID-19, they are divided into ordinary type and severe type. Ordinary type: fever; Symptoms are mild, mostly concentrated in respiratory manifestations; Pulmonary imaging showed mild pneumonia. Heavy: shortness of breath: $RR \geq 30$ times/minute; Resting refers to oxygen $\leq 93\%$; $PaO_2/FiO_2 \leq 300$ mmHg; Pulmonary imaging showed that the lesion progressed significantly within 24-48 hours $> 50\%$; Respiratory failure, and need mechanical ventilation; Go into shock; Other organ failure requires ICU monitoring and treatment.

Study grouping the subjects were divided into three groups according to the types of therapeutic drugs. Traditional Chinese Medicine Group: There are many syndromes of "dampness" in the epidemic in COVID-19, Guangdong Province, and the main drugs used are to remove dampness, such as Dayuanyin [6]. Basic prescription: 6g areca nut, 3g magnolia officinalis, 1.5g tsaoko, 3g anemarrhena rhizome, 3g Paeonia lactiflora, 3g scutellaria baicalensis and 1.5g liquorice, decocted in water; Addition and subtraction: with intermittent fever, add 5g of Bupleurum; With symptoms of qi deficiency and blood stasis, Radix Codonopsis 10g, Radix Astragali 5g, Radix Salviae Miltiorrhizae 5g and Rhizoma Polygoni Cuspidati 5g are added; 10g of Notopterygium Rhizoma or 10g of Saposhnikovia divaricata and 5g of Schizonepeta tenuifolia are added with fever and no sweat. In the early stage of the course of disease, dispersing lung qi and resolving turbidity should be the main method; In the middle stage, it is mostly

caused by dampness and heat entering the body, and it is mainly to disperse lung and detoxify; At the extreme stage (severe), the main pathogenesis is internal closure and external detachment, and the main pathogenesis is opening and closing fixation; The recovery period is deficiency of lung and spleen. The above symptoms need to be dialectical and treated according to people.

Western medicine group: symptomatic treatment, mainly divided into anti-inflammatory, antiviral, immunotherapy, anticoagulation and other therapies, for respiratory distress, low oxygen saturation, nasal catheter or mask oxygen therapy; For those with dyspnea and hypoxemia, high-flow nasal catheter oxygen therapy or noninvasive mechanical ventilation can be used, and respiratory support such as organ intubation or invasive mechanical ventilation can also be carried out according to the progress of the disease; And improve microcirculation, use vasoactive drugs and other circulatory support.

Integrated traditional Chinese and western medicine group: the above two therapies were used at the same time according to the specific situation of patients.

Research Methods

According to the electronic medical record system and paper medical records of hospitalized patients in Jiangmen Central Hospital, the diagnosis and treatment data of COVID-19 patients over 18 years old were derived or collected. Evaluate the quality of cases to ensure the integrity and accuracy of key data. The name, sex, age, first symptom, main diagnosis, secondary diagnosis, clinical classification, inspection, treatment plan, antibiotic use, hospitalization days, treatment outcome, follow-up records, etc. of the patients were extracted by two staff members. The main research indicators are cure rate, improvement rate, inefficiency and mortality rate, and the secondary indicators are treatment time. Effective rate (%) = (cured cases + improved cases) / total number of cases $\times 100\%$.

Statistical Methods

SPSS19.0 software was used for statistical analysis. Continuous variables were expressed by median (interquartile interval) [M (IQR)], and the comparison was made by single factor AVOVA test. Classification variables were expressed by the number of cases (composition ratio), and chi-square test was used for comparison between groups. $P < 0.05$ is statistically significant.

Results

See Table 1-5 for general information.

A total of 582 patients were included in this study. According to the treatment situation, they were divided into two groups: 299 cases in the integrated traditional Chinese and western medicine group, 231 cases in the western medicine group and 52 cases in the traditional Chinese medicine group. The age of the western medicine group and the integrated traditional Chinese and western medicine group was significantly older than that of the traditional Chinese medicine group ($P < 0.01$). There was no significant difference in sex ratio among the three groups ($P > 0.05$) (see Table 1).

Table 1: Comparison of baseline data of patients in each group.

Group	Number of cases	age [M (IQR)]	Gender	
			Male	Female
Integrated traditional Chinese and western medicin group	299	56 (18-94)**	169 (56.5)	130 (43.5)
Western medicin group	231	69 (21-99)**	139 (60.2)	92 (39.8)
Traditional Chinese medicin group	52	36 (18-67)**	38 (73.1)	14 (26.9)
Total	582	59 (18-99)	346 (59.5)	236 (40.5)
<i>F value</i>	-	51.654	5.119	
<i>P value</i>	-	0.000	0.077	

Patients were divided into three age groups according to their age: young (18-40 years old), middle-aged (41-65 years old) and old (> 65 years old). There is no significant difference in age among patients in the integrated traditional Chinese and western medicine group, western medicine group and Chinese medicine group ($P > 0.05$) (see Table 2).

Table 2: Comparison of baseline data of patients of different ages.

Age group	Subgroup	Number of cases	Median/age interval [M (IQR)]	<i>F</i>	<i>P</i>
Youth (18-40 years old)	Integrated traditional Chinese and western medicin group	83	33 (18-40)	2.315	0.103
	Western medicin group	24	32 (21-39)		
	Traditional Chinese group	32	30 (18-40)		
Middle (41-65 years old)	Integrated traditional Chinese and western medicin group	109	53 (41-65)	3.052	0.051
	Western medicin group	76	56 (41-65)		
	Traditional Chinese group	18	52 (42-61)		
old (>65 years old)	Integrated traditional Chinese and western medicin group	107	75 (66-94)	1.808	0.166
	Western medicin group	131	76 (66-99)		
	Traditional Chinese group	2	67		

Among them, the average type cases (45.53%), severe type cases (54.46%), and there was no significant difference among the three groups (see Table 3).

Table 3: Comparison of cases with different clinical types in each group (%).

Clinical classification	Integrated traditional Chinese and western medicin group	Western medicin group	Traditional Chinese group	Total
Common type	159 (60.00)	58 (21.89)	48 (18.11)	265 (45.53)
Severe type	140 (44.16)	173 (54.57)	4 (1.26)	317 (54.46)
Total	299 (51.37)	231 (39.69)	52 (8.93)	582 (100.00)

There is no significant difference in age and sex ratio between the traditional Chinese and western medicine group, the western medicine group and the Chinese medicine group ($P > 0.05$) (see Table 4-5).

Table 4: Comparison of baseline data of common patients in different age groups.

Project	Age group	Total	Integrated traditional Chinese and western medicin group	Western medicin group	Traditional Chinese group	<i>P value</i>
Age [M (IQR), years]	18-40 years old	32 (18-40)	32 (18-40)	33 (21-39)	32 (18-40)	0.267
	41-65 years old	53 (41-65)	53 (41-64)	55 (41-65)	53 (42-61)	0.117
	>65 years old	74 (66-95)	75 (66-89)	76 (66-95)	67	0.205
Gender [male/female]	18-40 years old	72/38	41/24	7/9	20/9	0.236
	41-65 years old	58/45	35/32	12/7	11/6	0.522
	>65 years old	24/28	9/18	15/8	0/2	0.052

Table 5: Comparison of baseline data of severe patients in different age groups.

Project	Age group	Total	Integrated traditional Chinese and western medicine group	Western medicine group	Traditional Chinese group	<i>P value</i>
Age [M (IQR), years]	18-40 years old	32 (18-40)	36 (18-40)	32 (24-37)	27 (22-30)	0.247
	41-65 years old	56 (41-65)	55 (42-65)	57 (41-65)	42	0.187
	>65 years old	76 (66-99)	77 (66-94)	76 (66-99)	-	0.970
Gender [male/female]	18-40 years old	17/12	13/5	2/6	2/1	0.075
	41-65 years old	56/44	24/18	31/26	1/0	0.648
	>65 years old	119/69	47/33	72/36	-	0.287

Efficacy Evaluation

There is no significant difference in the cure rate, improvement rate, inefficiency and mortality rate among the general patients of all ages ($P > 0.05$) (see Table 6).

There was no significant difference in the cure rate, inefficiency and effective rate between young and middle-aged (18-65 years old) patients with severe diseases ($P > 0.05$). The cure rate and effective rate of elderly patients (> 65 years old) in Chinese and western medicine group were significantly higher than those in western medicine group ($P < 0.05$), and the ineffective rate was significantly lower than that in western medicine group ($P < 0.01$), with statistical significance. There was no significant difference in the improvement rate and mortality rate between the traditional Chinese and western medicine groups and the western medicine group ($P > 0.05$) (see Table 7).

Hospitalization time

The hospitalization time of ordinary patients of different age groups in TCM and WM group was longer than that in TCM group

Table 6: Comparison of curative effects of patients in common groups [case (%)].

Age group	Subgroup	Numbers of cases	Cure rate	Improvement rate	Inefficiency rate	Mortality rate	Effective rate (%)
18-40 years old	Integrated traditional Chinese and western medicine group	65	52 (80.00)	6 (9.23)	7 (10.77)	0	89.23
	Western medicine group	16	14 (87.50)	0	2 (12.50)	0	87.50
	Traditional Chinese medicine group	29	26 (89.66)	1 (3.45)	2 (6.90)	0	93.10
	<i>P</i>	-	0.456	0.302	0.793	-	0.793
41-65 years old	Integrated traditional Chinese and western medicine group	67	59 (88.06)	4 (5.97)	4 (5.97)	0	94.03
	Western medicine group	19	16 (84.21)	1 (5.26)	2 (10.53)	0	89.47
	Traditional Chinese medicine group	17	15 (88.23)	1 (5.89)	1 (5.89)	0	94.12
	<i>P</i>	-	0.899	0.993	0.774	-	0.774
>65 years old	Integrated traditional Chinese and western medicine group	27	23 (85.19)	0	4 (14.81)	0	85.19
	Western medicine group	23	21 (91.30)	1 (4.35)	1 (4.35)	0	95.65
	Traditional Chinese medicine group	2	2 (100.00)	0	0	0	100.00
	<i>P</i>	-	0.695	0.526	0.409	-	0.409

Table 7: Comparison of curative effects of patients in severe groups [case (%)].

Age group	Subgroup	Numbers of cases	Cure rate	Improvement rate	Inefficiency rate	Mortality rate	Effective rate (%)
18-40 years old	Integrated traditional Chinese and western medicine group	18	18 (100.00)	0	0	0	100.00
	Western medicine group	8	8 (100.00)	0	0	0	100.00
	Traditional Chinese medicine group	3	3 (100.00)	0	0	0	100.00
	<i>P</i>	-	-	-	-	-	-
41-65 years old	Integrated traditional Chinese and western medicine group	42	41 (97.62)	0	1 (2.38)	0	97.62
	Western medicine group	57	53 (92.98)	0	4 (7.02)	0	92.98
	Traditional Chinese medicine group	1	1 (100.00)	0	0	0	100.00
	<i>P</i>	-	0.563	-	0.563	-	0.563
>65 years old	Integrated traditional Chinese and western medicine group	80	72 (90.00) *	5 (6.25)	1 (1.25) **	2 (2.5)	96.25**
	Western medicine group	108	84 (77.78) *	3 (2.78)	13 (12.04) **	8 (7.41)	80.56**
	Traditional Chinese medicine group	0	0	0	0	0	-
	<i>P</i>	-	0.031	0.288	0.005	0.194	0.002

Table 8: Comparison of hospitalization time of common patients (days).

Age group	Subgroup	Average hospitalization days	95% confidence interval		Minimum days	Maximum number of days
			Lower limit	upper limit		
18-40 years old	Integrated traditional Chinese and western medicine group	17.9**	15.0	20.8	1	70
	Western medicine group	7.9**	4.8	10.9	3	20
	Traditional Chinese medicine group	12.6	9.9	15.2	4	32
	<i>P</i>	0.001	-	-	-	-
41-65 years old	Integrated traditional Chinese and western medicine group	16.4**	13.7	19.0	2	60
	Western medicine group	6.3**	4.5	8.2	1	13
	Traditional Chinese medicine group	9.5	6.5	12.4	1	22
	<i>P</i>	0.000	-	-	-	-
>65 years old	Integrated traditional Chinese and western medicine group	13.4*	9.7	17.1	5	49
	Western medicine group	8.8*	7.0	10.6	3	18
	Traditional Chinese medicine group	-	-	-	-	-
	<i>P</i>	0.033	-	-	-	-

Table 9: Comparison of hospitalization time of severe patients (days).

Age group	Subgroup	Average hospitalization days	95% confidence interval		Minimum days	Maximum number of days
			Lower limit	upper limit		
18-40 years old	Integrated traditional Chinese and western medicine group	14.8	10.9	18.6	5	35
	Western medicine group	8.0	3.1	12.9	2	16
	Traditional Chinese medicine group	8.3	6.3	10.3	6	12
	<i>P</i>	0.061	-	-	-	-
41-65 years old	Integrated traditional Chinese and western medicine group	13.0**	10.8	15.2	1	30
	Western medicine group	8.8**	7.3	10.3	2	31
	Traditional Chinese medicine group	7**	7	7	7	7
	<i>P</i>	0.006	-	-	-	-
>65 years old	Integrated traditional Chinese and western medicine group	14.0**	11.6	16.3	1	54
	Western medicine group	10.3**	9.0	11.6	1	43
	Traditional Chinese medicine group	-	-	-	-	-
	<i>P</i>	0.005	-	-	-	-

and WM group, and the difference was statistically significant ($P < 0.05$) (see Table 8).

There was no significant difference in hospitalization days among the severe young patients (18-40 years old) in the traditional Chinese and western medicine group, western medicine group and traditional Chinese medicine group ($P > 0.05$). The hospitalization days of middle-aged (41-65 years old) and elderly (> 65 years old) patients in the integrated traditional Chinese and western medicine group were significantly longer than those in the western medicine group and the Chinese medicine group, and the difference was statistically significant ($P < 0.01$) (see Table 9).

Discussion

This study compared the effects of different age groups of patients treated by Chinese and Western medicine, Western medicine and Chinese medicine. It was found that the general patients had a good prognosis and no death cases, and there was no statistical difference in the cure rate, improvement rate, inefficiency and efficiency among the three treatment methods ($P > 0.05$). The prognosis of severe patients under different treatment methods is related to their age: when the age is over 65 years old, the cure rate and effective rate of the integrated traditional Chinese and western medicine group are significantly higher than those of the western medicine group ($P < 0.05$), while the ineffective rate is significantly lower than that of the western medicine group ($P < 0.01$), and the difference is statistically significant; When the age is less than 65 years old, there is no significant difference in the cure rate, inefficiency and efficiency among the three treatment methods ($P > 0.05$) (see Table 7). This is basically consistent with MA Jie [7]'s report that the effect of antiviral therapy combined with the theory of "reinforcing the middle energizer" is better than that of antiviral therapy alone or dialectically using the theory of "reinforcing the middle energizer" alone, which may be related to the fact that western medicine's anti-inflammatory, antiviral, anticoagulation, oxygen inhalation and mechanically assisted ventilation can provide timely and effective symptomatic treatment for patients, and Chinese medicine can comprehensively treat

patients dialectically, which needs more evidence-based medical evidence to confirm.

Table 8-9 shows that the treatment time of the integrated traditional Chinese and western medicine group is significantly longer than that of the western medicine group ($P < 0.05$), which may be due to two reasons: First, in the treatment of novel coronavirus infection, doctors prefer to use a combination of various treatment methods (such as integrated traditional Chinese and western medicine) to achieve the purpose of timely treatment [8,9]; For patients with relatively mild illness, Western medicine or Chinese medicine therapy may be used alone [10,11], which is consistent with the clinical practice in the real world. 2. According to the Diagnosis and Treatment Plan for Infected Pneumonia in novel coronavirus (Trial Ninth Edition) [5] and the Treatment Plan for Traditional Chinese Medicine in novel coronavirus, Guangdong Province (Trial Second Edition) [6], the discharge conditions of patients are as follows: ①The body temperature has returned to normal for more than 3 days; ②Respiratory symptoms improved obviously; ③Pulmonary imaging showed that acute exudative lesions were obviously improved; ④Two consecutive respiratory tract samples, such as sputum and nasopharyngeal swab, were negative for nucleic acid detection (the sampling time was at least 24 h apart). Those who meet the above conditions can be discharged. Some patients may still have symptoms such as anorexia, weakness and qi deficiency after meeting the above discharge conditions [12], and Chinese medicine practitioners will make corresponding treatments according to the specific tongue and pulse conditions of the patients, which may be one of the reasons why the treatment time of Chinese medicine group and integrated traditional Chinese and western medicine group is longer than that of western medicine group, which needs to be confirmed by a larger-scale epidemiological investigation.

This study systematically reviewed the COVID-19 patients treated in our hospital from January 2020 to March 31, 2023. By analyzing the curative effects of different treatment methods of traditional Chinese and western medicine, it was found that the combination

of traditional Chinese and western medicine significantly improved the prognosis of elderly patients with severe COVID-19, significantly improved their cure rate and effective rate, but more treatment measures correspondingly prolonged the treatment time of patients. This reminds us that at different stages of epidemic in novel coronavirus, we should formulate more suitable diagnosis and treatment plans according to the specific treatment capabilities of different regions and hospitals: when novel coronavirus is concentrated, we should choose a fast and effective method to treat patients, shorten the hospitalization time of patients and improve the bed turnover rate, and Western medicine is a good choice; When novel coronavirus's infection is spreading, the combination of traditional Chinese and western medicine can better improve the prognosis of patients, reduce the occurrence of COVID-19's sequelae, and facilitate the post-infection rehabilitation in novel coronavirus, which need more epidemiological data from the center and high-quality evidence-based medical evidence to confirm.

References

1. Wang Z, Chen X, Lu Y, et al. Clinical characteristics and therapeutic procedure for four cases with 2019 novel coronavirus pneumonia receiving combined Chinese and Western medicine treatment[J]. *Bioscience trends*. 2020; 14: 64-68.
2. Zhang S, Zhu Q, Zhan C, et al. Acupressure therapy and Liu Zi Jue Qigong for pulmonary function and quality of life in patients with severe novel coronavirus pneumonia (COVID-19): a study protocol for a randomized controlled trial. *Trials*. 2020; 21: 751.
3. Shu Z, Zhou Y, Chang K, et al. Clinical features and the traditional Chinese medicine therapeutic characteristics of 293 COVID-19 inpatient cases. *Front Med*. 2020; 14: 760-775.
4. Xie Y, Wang J, Li S, et al. A single arm clinical study of 86 patients with common type of coronavirus disease 2019 treated by integrated traditional Chinese and Western medicine: multicenter case observation from designated hospitals in Henan Province]. *Zhonghua Wei Zhong Bing Ji Jiu Yi Xue*. 2020; 32: 922-927.
5. General Office of the National Health and Wellness Commission, state administration of traditional Chinese medicine Office. On Printing and Distributing novel coronavirus Lung Notice on the Treatment Scheme of Inflammation (Trial Ninth Edition) EB/OL]. (2021-05-11) [2022-04-01].
6. Lin Lin, Chen Yuanbin, Tan Xinyuan, et al. Treatment Scheme of Traditional Chinese Medicine in novel coronavirus, Guangdong Province (Trial Second Edition) [J]. *Journal of traditional Chinese medicine*. 2020; 61: 1197-1199.
7. Ma J, Wu H Y, Chen Y Z, et al. Thoughts on Traditional Chinese Medicine Treatment of Novel Coronavirus Pneumonia Based on Two Cases[J]. *China Journal of Combined Medicine: English Edition*. 2021; 27: 4.
8. Huang Chao qun, Lv Wenliang, Li Hao, et al. Real-world clinical study on 2132 cases of novel coronavirus infection in Hubei Province [J]. *Chinese Journal of Traditional Chinese Medicine*. 2023; 38: 7.
9. Wei Lai, Mao Qichao, Yang Jianfei. Retrospective study on 34 cases of novel coronavirus's patients treated with integrated traditional Chinese and western medicine [J]. *Journal of emergency in traditional Chinese medicine*. 2021; 30: 1947-1949.
10. Liu Z, Li X, Gou C, et al. Effect of Jinhua Qinggan granules on novel coronavirus pneumonia in patients[J]. *Journal of traditional Chinese medicine*. 2020; 40: 467-472.
11. Xu H, Li S, Liu J, et al. Bioactive compounds from Huashi Baidu decoction possess both antiviral and anti-inflammatory effects against COVID-19. *Proc Natl Acad Sci USA*. 2023; 120: e2301775120.
12. Li L, Gou CY, Li XM, et al. Effects of Chinese Medicine on Symptoms, Syndrome Evolution, and Lung Inflammation Absorption in COVID-19 Convalescent Patients during 84-Day Follow-up after Hospital discharge: A Prospective Cohort and Nested Case-Control Study. *Chin J Integr Med*. 2021; 27: 245-251.