



Supplemental Materials for

Herbal Medicine and COVID-19: An Umbrella Review

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Table S1: Additional citation overlap analysis: papers with 5 or more articles cited more than once.

Listing of references	Ang L, Song E, et al., 2020	Ang L, Song E, et al., 2022	Chien TJ, Liu CY, et al., 2022	Du XQ, Shi LP, et al., 2021	Fan AY, Gu S, et al., 2020	Fan Z, Guo G, et al., 2021	fei J, Xu N, et al., 2021	feng Z, Yang J, et al., 2021	Kang X, Jin D, et al., 2022	Kumar A, Rai A, et al., 2022	Li L, Xie H, et al., 2022	Liang SB, Fang M, et al., 2021	Luo X, Ni X, et al., 2021	Pang W, Liu Z, et al., 2020	Shi S, Wang F, et al., 2019	Sun CY, Sun YL, et al., 2020	Wang H, Xu B, et al., 2021	Wang X, Ma T, et al., 2022	Wu H, Dai R, et al., 2022	Xiong X, Wang P, et al., 2019	Xu J, Liu H, et al., 2022	Yin B, Bi YM, et al., 2021	Yu R, Zhang S, et al., 2022	Zhuang J, Dai X, et al., 2022	Zhang L, Ma Y, et al., 2022	Zhang S, Yang Z, et al., 2022	Zhou L, Wang J, et al., 2021	Jin D, Wang J, Xue J, et al., 2022	Total count
Ai X, Luo C, et al., 2020		X		X					x	X					x		X				X	X					X		9
Chen CW, et al., 2021			x								x				x						x								5
Chen LZ, Liu H, et al., 2020							x				x											x	x			x			6
Cheng DZ, Wang WJ, et al., 2020						x	x		x				x														x		5
Ding XJ, Zhang Y, et al., 2020		x		X	x		x		x	x			x	x	x	x			x	x	x	x	x				x		18
Duan C, et al., 2020	x	x	x	X			x		x	x	x	x	x	x		X			x	x	x	x	x			x	x	x	23
Fu X, Lin L, et al., 2020	x	x	x	X	x				x	x	x	x	x	x	x	x			x	x	x	x	x				x		21
Fu X, Lin L, et al., 2020	x	x		X	x				x	x	x	x	x	x							x								11
He Q, Zhang QJ, et al., 2021			X						x		x					X			X			x					x		8
Hu C, et al., 2020		x	x	X			x									x										x			7
Hu K, Guan W, et al., 2020					x	x		X	x	x	x			x						X	x	x			X	x			13

Listing of references	Ang L, Song E, et al., 2020	Ang L, Song E, et al., 2022	Chien TJ, Liu CY, et al., 2022	Du XQ, Shi LP, et al., 2021	Fan AY, Gu S, et al., 2020	Fan Z, Guo G, et al., 2021	Fei J, Xu N, et al., 2021	Feng Z, Yang J, et al., 2021	Kang X, Jin D, et al., 2022	Kumar A, Rai A, et al., 2022	Li L, Xie H, et al., 2022	Liang SB, Fang M, et al., 2021	Luo X, Ni X, et al., 2021	Pang W, Liu Z, et al., 2020	Shi S, Wang F, et al., 2019	Sun CY, Sun YL, et al., 2020	Wang H, Xu B, et al., 2021	Wang X, Ma T, et al., 2022	Wu H, Dai R, et al., 2022	Xiong X, Wang P, et al., 2019	Xu J, Liu H, et al., 2022	Yin B, Bi YM, et al., 2021	Yu R, Zhang S, et al., 2022	Zhuang J, Dai X, et al., 2022	Zhang L, Ma Y, et al., 2022	Zhang S, Yang Z, et al., 2022	Zhou L, Wang J, et al., 2021	Jin D, Wang J, Xue J, et al., 2022	Total count
e Group, 2020																													
Yu P, Li Y, et al., 2020	x	x		X		x		X	x	x	x	x		x	x		x		x	x	x	x			x	x	x		21
Zeng XH, Ma WH, et al., 2020																	x						x	x	x		x		6
Zhang C, Yang Y, et al., 2020		x			x					x	x		x		x			x		x		x							10
Zhang Y, Lei L, et al., 2020		x	x	X			x			x	x						x				x		x			x			10
Zheng Z, Bai Z, et al., 2020		x					x		x								x			x									5
Zhou WM, Zhao FM, et al., 2020							x			x	x						x		x							x			7
Total duplicate references cited	7	18	14	8	6	5	19	6	21	20	14	6	15	11	11	7	20	5	11	15	19	17	12	12	5	10	9	8	687

Table S2: AYUSH Regimens

Regimen	Formula
Regimen I	5 – 6 times OD <ul style="list-style-type: none"> • Dashamula and Pathyadi Kwatha 20ml each • Trikatu Churna 2g • Sanshamani Vati 500mg • AYUSH-64 500mg • Yastimadhu Ghanavati 500mg ADD Vitamin-C 500mg + Azithromycin 500mg OD for the first five days <ul style="list-style-type: none"> • Paracetamol 500mg s.o.s. in pyrexia
Regimen II	<ul style="list-style-type: none"> • 1g – Giloy Ghanavati • 2g -Swasari Ras • 0.5g each of Ashwagandha and Tulsi Ghanavati BD. • Anu Taila 4 drops nasal drop morning
Regimen III	<ul style="list-style-type: none"> • Shunthi Churna 2 grams with warm water BD after meals • Rasona Kalka 1 gram with warm water OD
Regimen IV	<ul style="list-style-type: none"> • Vyaghradi Kashaya 50ml BD with 250mg of Pippali powder empty stomach morning and evening • Sanshamani Vati 2 tablets 500mg BD
Regimen V	<ul style="list-style-type: none"> • Two tablets Dasamoolkaduthrayadi Kashaya • Guluchyadi Kwatham BD • Standard of care
Regimen VI	<ul style="list-style-type: none"> • Kabasura Kudineer 2 tablets taken thrice a day. • Shakti drops 6 drops with 100ml of water thrice a day. • Turmeric plus tablets 2 tablets thrice a day
Regimen VII	<ul style="list-style-type: none"> • Kabasura Kudineer 60ml BD • Vasantha Kusumakaram Mathirai 130mg 1 tablet BD • Thippili Rasayanam 2gms BD • Adathodai Manapagu 15ml BD with 30ml lukewarm water

Table S3: Chinese Herbal / Traditional Formulations studied by number of papers reporting (Systematic Reviews Only)

Formulation / Combination	Number of Papers
Lianhua Qinwen	8 ^{35, 41, 42, 55,56,57,38, 49}
Keguan-1 decoction	2 ^{35,38}
Xuanfei Baidu decoction	2 ^{35, 41}
Jinhua Qinggan granules	6 ^{35, 41,42, 38, 49, 74}
Xue-Bi-Jing (XBJ),	2 ^{38, 41}
Qing-Fei-Pai-Du (QFPD),	4 ^{41, 61, 62, 68}
Hua-Shi-Bai-Du (HSBD).	1 ⁴¹
Mahuang (Herba Ephedrae	3 ^{42,43, 48}
Kuxingren (Semen Armeniacae Amarum	4 ^{42, 43, 44, 48}
Shigao (Fibrosus Gypsum),	2 ^{42, 48}
Jinyinhua (Flos Lonicerae Japonicae),	3 ^{42, 48, 41}
Lianqiao (Fructus Forsythiae),	3 ^{42, 44, 48}
Huangqin (Radix Scutellariae)	2 ^{42, 44}
Taizishen (Radix Pseudostellariae).	1 ⁴²
Glycyrrhizae radix et rhizoma (gancao)	2 ^{43, 44}
Pinelliae rhizoma (banxia),	2 ^{43, 44}
Citri reticulatae pericarpium (chenpin)	1 ⁴³
TCM + CWM	7 ^{47, 48, 52, 60, 51, 54, 69}
Lianhuaqingke LHQK	1 ⁴⁹
Toujie Quwen TJQW	2 ^{49, 38}
Not specified TCM	3 ^{45, 46, 50}
Formulation Pneumonia No. 1,	1 ³⁸
Formulation for Powerful Pneumonia No. 1	1 ³⁸
Formulation for Pneumonia No.2	1 ³⁸
Modified Maxingshigan formula	1 ³⁸
Maxing Xuanfei Jiedu decoction	1 ³⁸
Toxin blocking lung formulation	1 ³⁸
Diammonium glycyrrhizinate capsules	1 ³⁸
Feiyan Yihao Chinese Medicine granules	1 ³⁸
Lianhua-Qingke granules	1 ³⁸
Jiaweidayuan granules	1 ³⁸
Qingfei Touxie Fuzheng recipe	1 ³⁸
Reyanning mixture formulation	1 ³⁸
Shufeng Jiedu capsule	1 ³⁸
Xuanfei-Baidu Decoction (XBD)	1 ³⁸
Compound Yin Chai granule + Qingqiao detoxification granule	1 ³⁸

Appendix S1: Herbal Formulations and Singles

Narrative reviews examined the following herbs –

Boesenbergia rotunda (Panduratin A), Andrographis paniculata, Acorus calamus, Strobilanthes cusia, Melicope glomerata, Zingiber officinale, Blumea balsamifera, Elephantopus scaber, Psidium guajava, Zingiber ottensii, Artemisia annua, Artemisia afra, Cannabis sativa, Echinacea purpurea, Olea europaea, Piper nigrum, Punica granatum, Scutellaria baicalensis, Cephalotaxus fortune, Glycyrrhiza uralensis, Forsythia suspense, Artemisia apiacea, Tinospora cordifolia, Glycyrrhiza glabra, Adhatoda vasica, Swertia chirata, Moringa oleifera, Trikatu, Cinnamomum verum, Aloe, Neem, Triphala, Cloves, Quercetin, Flavonoid, Lectin, Tobacco, Momordica charantia, Cannabis sativa, Citrus spp. Nigella sativa, Chamellia sinensis, Cnidioscolus aconitifolius, Scutellaria baicalensis, Ginkgo biloba, Allium sativum,

Potentially toxic herbs if misused

Oleandrin (Nerium oleander), Datura, Aconitum carmichaelii (aka Fuzi), Semenarmeriacae amarum (aka Xing Ren), Ephedra herba, Glycyrrhizin

TCM Herbal Formulation Details

Formulation Pneumonia No. 1 contains following herbs: Pinellia (*Pinelliae tematae*) Rhizome 10g, Codonopsis (*Codonopsis pilosulae*) Root 15g, Thorowax (*Bupleuri*) Root 20g, Baical Skullcap (*Scutellariae baicalensis*) Root 10g, Snakegourd (*Trichosanthis*) fruit 10g, Areca Seeds 10g, , Liquoric (*Glycyrrhizae*) Root 10g, Tangerine Pericarp (*Citri reticulatae*)10g, Giant Knotweed (*Polygoni cuspidati*) Rhizome 10g, Caoguo (*Tsaoko*) Fruit 15g, Magnolia-Bark (*Magnoliae officinalis*) 15g, Anemarrhenae aspheloidis-Rhizome 10g, Roots-White Peony 10g.

Formulation Maxing Xuanfei Jiedu decoction contains: Ephedra (Herba Ephedrae) 9g, Thunbergg Fritillary Bulb 12g, Apricot Bitter (*Armeriacae amarum*) seed 12g, Gypsum (*Gypsum fibrosum*) powder 15–30g, Circada Moulting (*Periostracum ccadae*) 10g, Turmeric (*Curcuma longae*) rhizome 12g, Sick Silkworm (*Bombyx batryticatus*) 15g, Balloon Flower (*Platycodi*) root powder 12g, Caoguo (*Tsaoko*) fruit 9g, Cardamon (*Ammomi rotundus*) 12g, Orange fruit 12g.

Toxin blocking lung formulation; Haoqin-Qingdan decoction; Huopu Xialing decoction; Damp-toxin obstructing lung formulation; Ganlu-Xiaodu pills; Mangxing Shigan decoction; Chailing-Pingwei decoction; Qiwei decoction; Lianhua Qingwen granules; Huoxiang Zhengqi liquids; Tanreqing injection; Shenfu injection Xuebijing injection

Formulation for Powerful Pneumonia No. 1 contains: Areca seeds 15g, Caoguo (*Tsaoko*) Fruits 6g, Thorowax (*Bupleuri*) Root 10g, Root-Baical Skullcap (*Scutellariae baicalensis*) 10g, Pinellia (*Pinelliae tematae*) Rhizome 10g, Snakegourd (*Trichosanthis*) Fruit 10g, Root-Liquoric (*Glycyrrhizae*) 6g, Rhizome-Giant Knotweed (*Polygoni cuspidati*) 10g, Rhizome-Coptis (*Rhizoma coptidis*) 10g, Bitter Orange Immature (*Citri seu ponciri*) 15g, Honey-fried-root of Tatarian Aster 10g, Flower-Common Coltsfoot (*Tussilago farfarae*) 10g, Cablin patchouli (*Herba pogostemonis*) 10g, Fortune eupatorium (*Herba eupatorii*) 10g, Bulb-Thunbergg Fritillary 20g, Root-Balloon Flower (*Platycodi radix*) 10g, Root-Hogfennel (*Peucedani*) 10g, Root-Stemona (*Radix stemonae*) 10g

Formulation for Pneumonia No. 2 contains: Ephedra Herb 10g, Climbing Nightshade (*Herba solani*) 20g, Atrina Glass (*Patriniae*) herb 15g, Mongolian Dandelion 15g, Tokyo Violet (*Herba violae*) 15g, Seed-Bitter Apricot (*Armeriacae amarum*) 10g, Rhizome- Pinelliae Tematae 10g, Bitter Orange (*Citri seu*) 20g, Snakegourd fruit (*Fructus trichosanthis*) 10g, root-Hogfennel (*Peucedani*) 10g, Honey-fried-

root Tatarian Aster 10g; 10 g each of Flower-Common Coltsfoot, Rhizome-Coptidis, Root-Balloon Flower (*Platycodi radix*), Root-Stemona; Thunberg Fritillary Bulb (*Fritillariae thunbergii*) 20g

Lianhua Qingwen granules: Roseboot (*Herba rhodiolae*), Licorice (*Glycyrrhizae*) root, menthol, Ephedra (*Herba ephedrae*), Bitter Apricot (*Armeniaca Amarum*) seed, Gypsum Fibrosum powder, root-Indigowoad (*Isatidis*), rhizome-Male fern (*Dryopteris crassirhizomae*), Herb-Heartleaf houttuynia (*Houttuyniae*), Cablin patchouli (*Pogostemonis*), Root-Rhubarb (*Rhei*), Forsythiae Suspensae fruit, Flower-Honeysuckle (*Lonicerae*)

Shufeng Jiedu capsules: Rhizome-Giant Knotweed (*Polygoni cuspidati*), Fruit-Forsythia (*Forsythiae suspensae*), Root-Indigowoad (*Isatidis*), Root-Thorowax (*Bupleuri*), Atrina Glass (*Patriniae*), European Verbenae herb, Reed (*Phragmitis*) rhizome, Licorice (*Glycyrrhizae*) root

Xuanfei Zhisou Formulation: Mint (*Menthae haplocalycis*), Poppy (*Papaveris*) capsule, Licorice (*Glycyrrhizae*) root, Root-Hogfennel (*Peucedani*), leaf schizonepeta herb, Root-Balloon Flower (*Platycodi*), Root-Stemona, Honey- fried-root Tatarian Aster (*Asteris tatarici*), Tangerine Pericarp (*Citri reticulatae*), Heartleaf houttuynia

Yuping-feng Formulation: Root-Astragalus (*Astragali membranacei*), Rhizome-White Atractylodes (*Atractylodis macrocephalae*), Root-Ledebouriellae Divaricatae

Shuanghuanglian liquid formulation for oral use: Flower and bud-Honeysuckle (*Lonicerae*), Baical Skullcap (*Scutellariae baicalensis*) root, Forsythiae Suspensae fruit

Modified maxingshigan formulation: stir baked Armeniaceae Amarum seed 10g, Persicae Seed 10g, 30g each of Gypsum Fibrosum and Trichosanthis Fructus, Rhei Radix 6g added in prepared decoction; Herba Ephedrae- raw 6g and honey-fried 6g; Descurainiae Seed 10g, Atractylodis Rhizome 10g, Arecae Seed 10g, Tsaoko Fructus 6g

Keguan-1 formulation: 30g each of Lonicera japonica, Coix lacrymajobi L. and *Forsythia suspensa*, 15g each of Morus alba L. and Fritillaria thunbergii, Chrysanthemum morifolium 10g, Prunus armeniaca L. 9g

Lianhua-Qingke granules formulation: Bitter Apricot (*Armeniaca amarum*) seed, Forsythia (*Forsythiae suspensae*) fruit, Honeysuckle (*Lonicerae*) bud flower, Root and Rhizome of Rhubarb (*Rhei*), Ephedra herb, Mulberry (*Mori radices*) bark root

Jiaweidayuan granules: Xingren 15g, 20g each of Gypsum powder (*Gypsum fibrosum*), Tricosanthes bark, Rhubarb (*Rhei*) Root and Rhizome; 10g each of Pepperweed seed, Areca Seed, Mahuang (*Ephedra sinica*), Atractylodes Rhizome, Peach Kernel (*Persicae*), Caoguo (*Tsaoko*) fruit 6g

Qingfei Touxie Fuzheng recipe: 30g each of Reed rhizome (*Rhizoma phragmitis*), Coix (*Coicis*) seed, Honeysuckle (*Lonicerae*) bud flower; 10g each of sick Silkworm (*Bombyx batryticatus*) body, Turmeric (*Curcuma longae*), Cicada Moulting (*Periostracum Cicadae*), White Peony (*Paeoniae lactiflorae*) root, Bitter Apricot (*Armeniaca amarum*) Seed; 15g each of Giant Knotweed (*Polygoni cuspidati*) rhizome, Forsythiae Suspensae Fruit, Licorice (*Glycyrrhizae*) root; Pseudostellaria Root 20g, Ephedra (*Herba ephedrae*) 6g, Gypsum (*Gypsum fibrosum*) 20g.

Reyanning formulation: Giant Knotweed (*Polygoni cuspidati*) rhizome, Atrina Glass (*Patriniae*) herb, Mongolian Dandelion (*Taraxaci*) herb, Barbated Skullcup (*Scutellariae barbatae*) herb

Shufeng Jiedu capsule: European Verbena Herb (*Herba Verbenae*), Reed (*Phragmitis*) rhizome, Licorice (*Glycyrrhizae*) root, Giant Knotweed (*Polygoni cuspidati*) Rhizome, Forsythia (*Forsythiae suspensae*) fruit, Indigowoad (*Isatidis*) root, Thorowax (*Bupleuri*) root, Atrina Glass (*Patriniae*)

Toujie Quwen granules: Thorowax (*Bupleuri*) root 5g, 10g each of Sweet Wormwood (*Artemisiae* *Apiaceae*), Cicada Moulting (*Periostracum cicadae*), Baical Skullcap (*Scutellariae baicalensis*) root, Dyers-Woad Leaf leaf, Ningpo Figwort (*Scrophulariae ningpoensis*) root, Tendrilleaf Fritillary (*Fritillariae Cirrhosae*) bulb, Thunberg Fritillary (*Fritillariae thunbergii*) bulb; Hogfennel (*Peucedani*) root 5g, *Forsythiae suspensa* fruit 30g, Appendiculate Cremastra Pseudobulb 20g, Honey-suckle bud and flower 15g, Astragalus (*Astragali membranacei*) root 45g, Poria Cocos 30g, Smoked Plum 30g, *Pseudostellaria* root 15g

Xuanfei-Baidu Decoction (XBD): *Atractylodis* Rhizome 10g, Semen Coicis 30g, *Agastachis* Herba 15g, *Ephedrae* Herba 8g, Armeniacae seed 15g, Gypsum Fibrosum powder 30g, *Polygoni cuspidati* Rhizome 20g, *Glycyrrhizae* Rhizome 10g, *Lepidiiseu descurainiae* 15g, *Verbenae* Herba 30g, *Phragmitis* Rhizome 30g, *Artemisiae annua* 25g, Citri Grandis Rubrum *Exocarpium* 20g.

Xuebijing (XBJ) Herbal IV injection: Herbal injection containing five Chinese herbs that contains *Angelica sinensis*, *Radix Paeoniae rubra*, *Salvia Miltiorrhiza*, Chuanxiong and Honghua (*Flos carthami*).