



香港應對COVID-19的中醫藥防治方略

Prevention and treatment of Chinese Medicine for COVID19 in Hong Kong

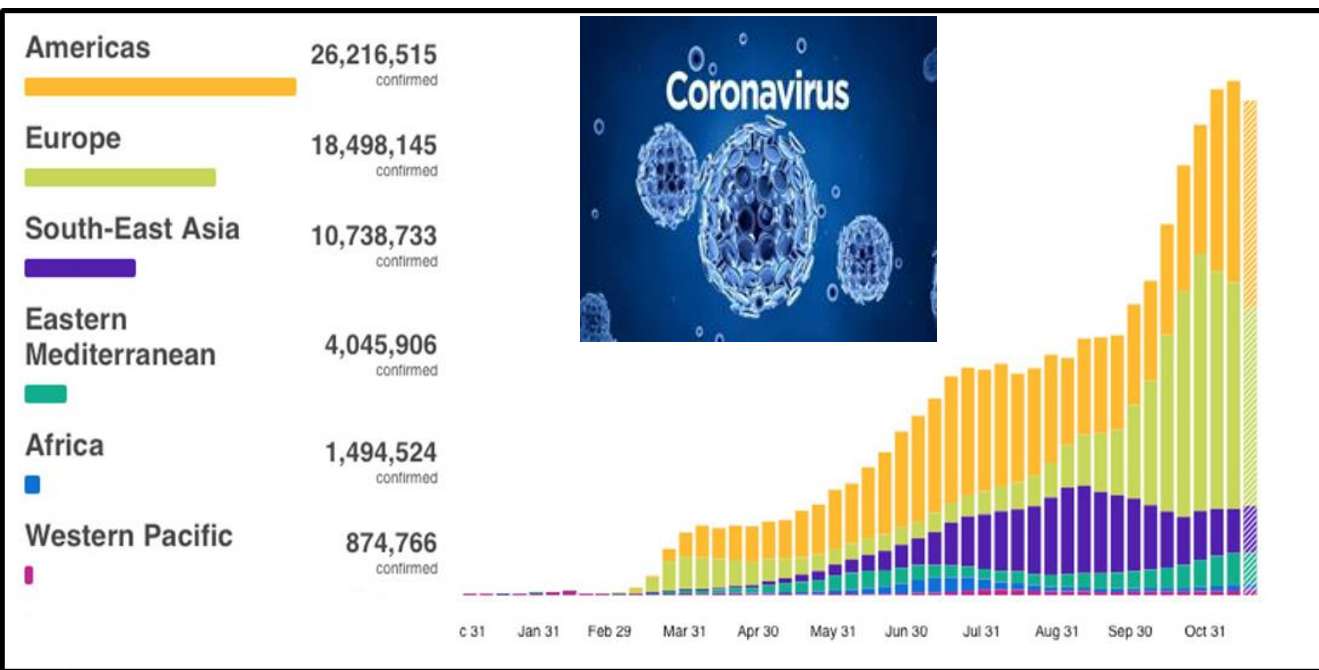
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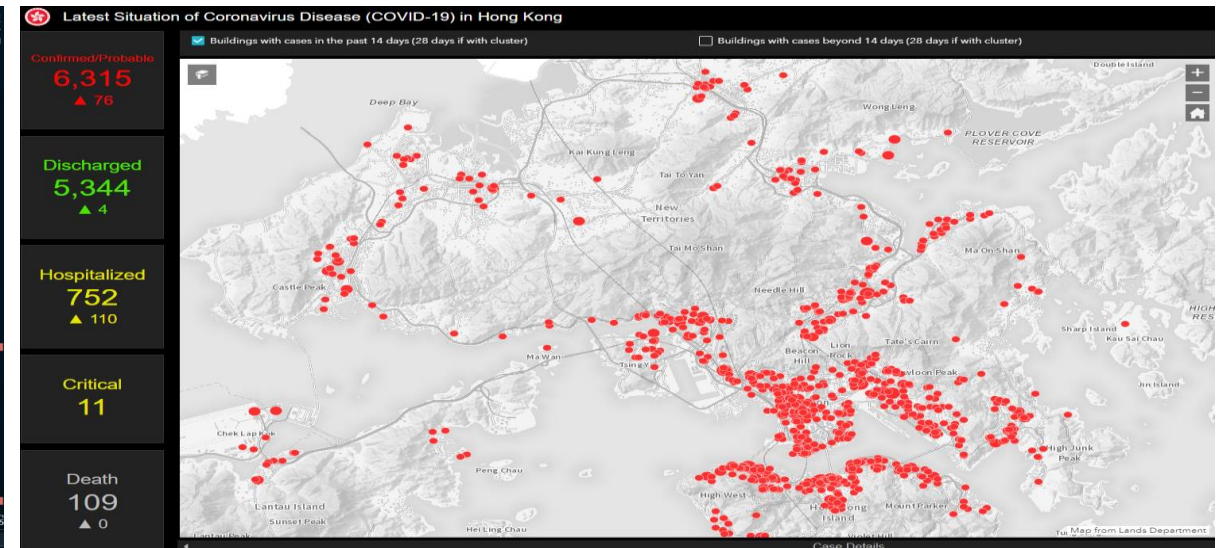
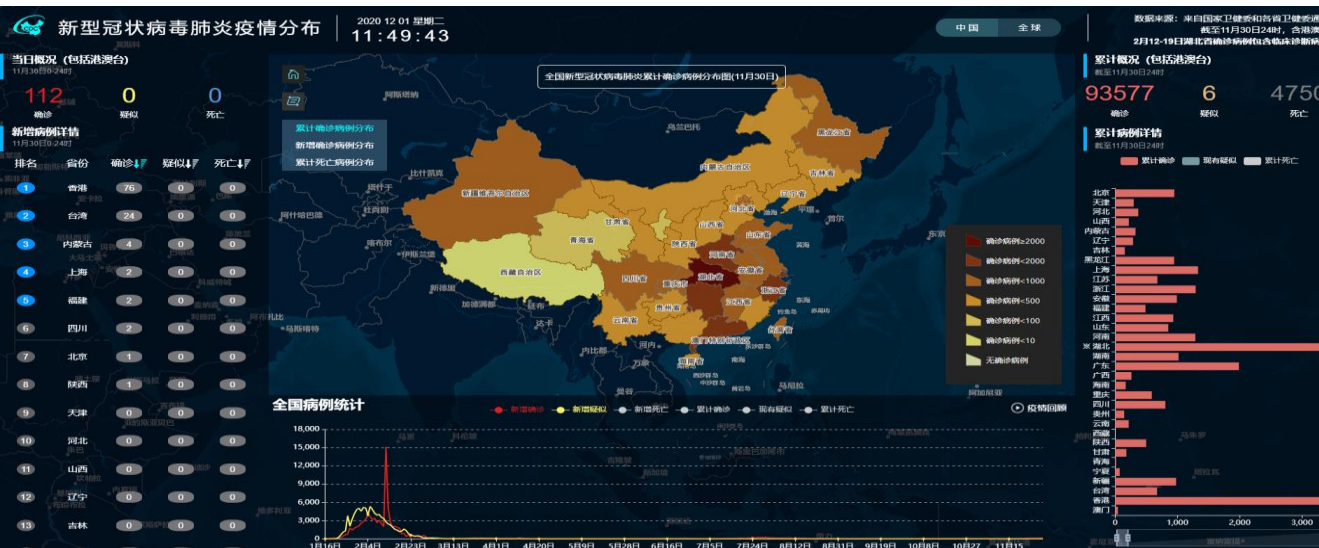
The University of Hong Kong



Name	Cases - cumulative total	Cases - newly reported in last 24 hours	Deaths - cumulative total	Deaths - newly reported in last 24 hours
Global	62,363,527	496,892	1,456,687	7,697
Norway	34,747	0	328	0
Republic of Korea	34,201	438	526	3

The table includes line graphs for Norway and the Republic of Korea, showing cumulative cases (left y-axis) and daily new cases (right y-axis) over time.

世界範圍COVID-19累計個案統計 (截至11月30日) Accumulated COVID-19 cases reported worldwide as of Nov 30. Source: WHO



中國的情況 Situation in China Source: Chinese Center for Disease Control and Prevention

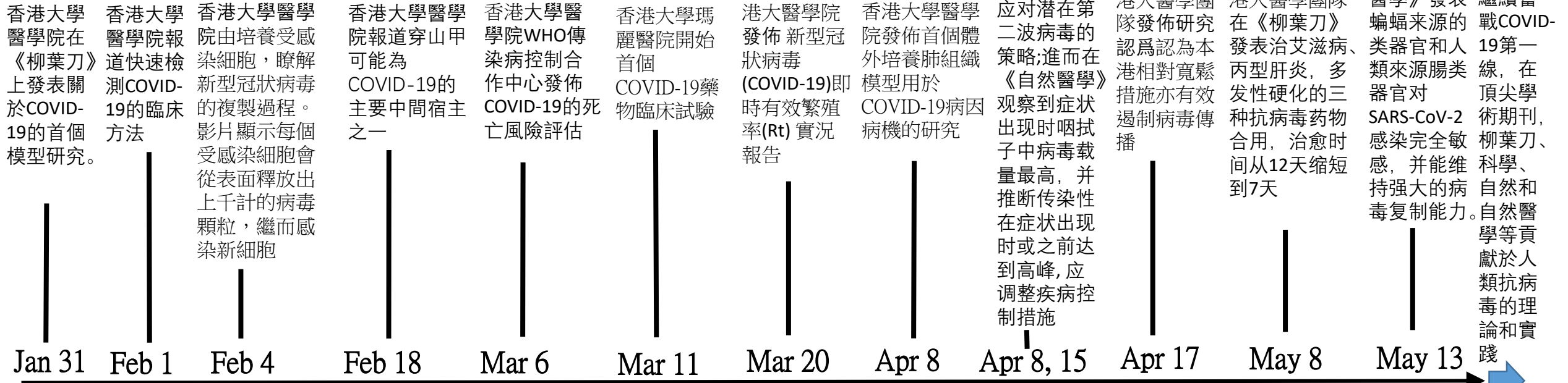
香港的情況 Situation in Hong Kong Source: GovHK

科学咨询小组



HKU scholars discovery in COVID-19, one of knowledge hub in the world

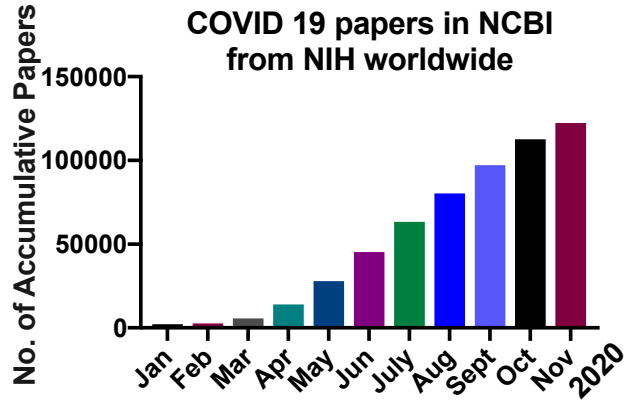
<https://fightcovid19.hku.hk/zh/category/research-zh/>



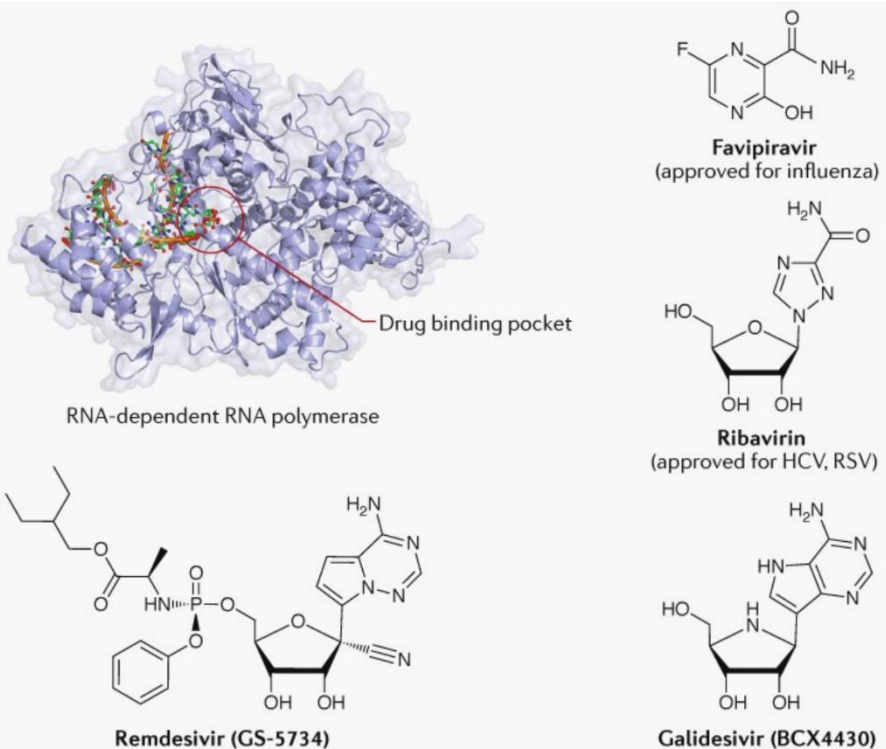
Continually published papers in top journal such as Lancet, Science, Nature, Nature Medicine, NEJM etc.



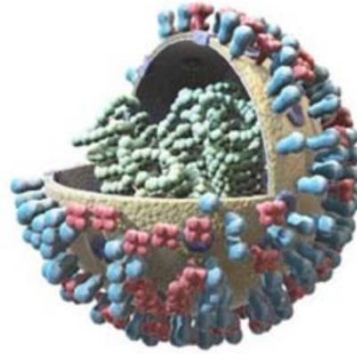
Highlights of potential therapeutic agents, vaccines for COVID-19 in the world



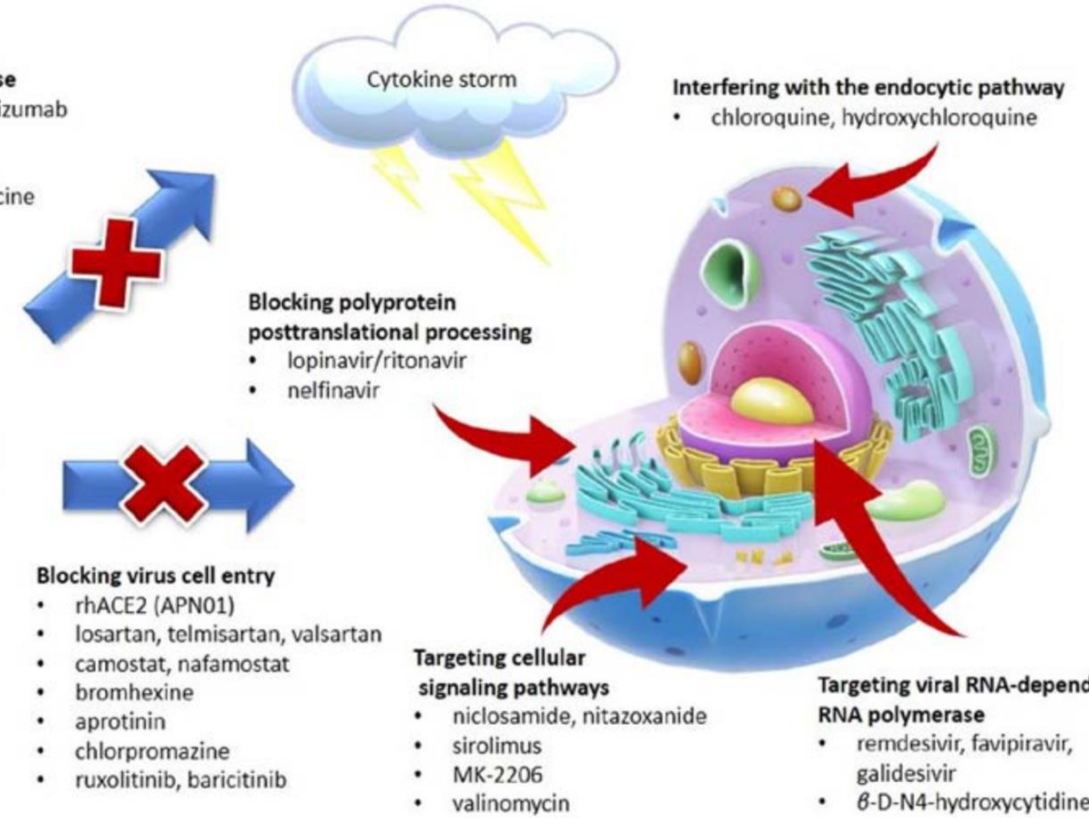
Source: Nature Reviews



- Modulation of the immune defense**
- tocilizumab, siltuximab, clazakizumab
 - adalimumab, eculizumab
 - IFN- α , IFN- β
 - methotrexate, imatinib, colchicine
 - thalidomide, lenalidomide
 - glucocorticoids



- Various antiviral mechanisms**
- umifenovir
 - ivermectin
 - emetine, zotatifin
 - homoharringtonine



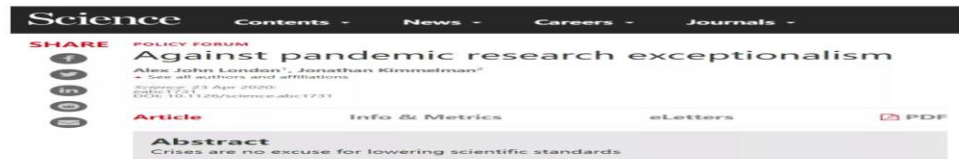
Source: International journal of Molecular medicine

The number of COVID-related articles is increasing rapidly. According to WHO report, from **Dec 2019 to Nov 2020**, more than **101 thousand papers** have been published in various languages. The themes cover **clinical manifestations, treatment options, virus structure, vaccines, antiviral drugs and diagnostic methods.**



Science : low-quality papers of COVID-19 are flooding, researchers should not "take advantage of the epidemic crisis" to lose their moral mission

他们认为，在正常情况下进行医学研究的许多不足之处，似乎在在这次大流行中被放大了。



危机不是降低科研标准的借口

根据 London 和 Kimmelman 的描述，一直以来存在一个普遍的认识，就是面对突发公共卫生事件，为加强科学研究的可行性，要求对平时高标准的研究进行例外处理。

而这一做法却会对科学研究工作构成威胁，造成大量名副其实的劣质研究论文泛滥成灾。

许多论文未经同行评议，发表在预印本网站上，而其中一些论文不仅引起了公众的注意，还成为政府决策人员的参考依据。

London 和 Kimmelman 认为：“虽然危险期带来了重大的逻辑上和实际上的挑战，但研究工作的道德使命始终如一，即减少不确定性，使护理人员、卫生系统和政策制定者能够更好地处理个人和公共卫生问题。”

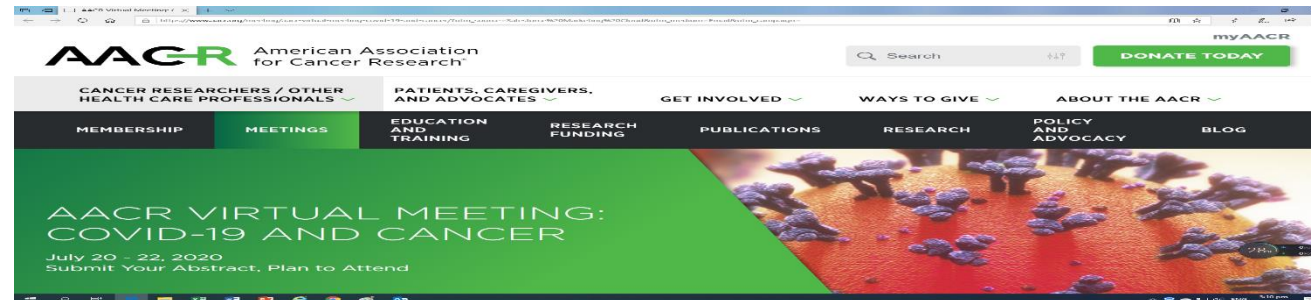
在这场 COVID-19 全球大流行中，首批出炉的许多论文都设计得很糟糕，没有很好的论据，或者报告的方式有失偏颇。在他们之后发表的大量论文重复率很高，有些研究甚至将目的放在如何受到媒体极大可能的关注上，从而增加了研究结果不可靠的风险。



预印本网站发表了大量未经同行审议的新冠相关论文

New Research Topics 新的研究領域

1. COVID-19 and other diseases
2. COVID-19 and Chinese Medicine



中醫藥作為新的研究領域亟待加強：中國發佈了新型冠狀病毒感染的肺炎診療方案一至七版，自第三版起，包含了中醫藥具體防治方案，中西醫結合治療成為國內的主要治療方式. 中醫藥防治COVID-19 在中國是中西醫結合的重要的或主要的防治方法之一。中国的9万多确诊的COVID患者中，有 91%用了复方中药，有效率超过 90%

TCM as new research fields need to be strengthened urgently: National Health Commission of the People's Republic of China promoted the vigorous and integrative use of TCM, and issued the 7th version of COVID-19 treatment guidelines which included the TCM treatment regimens from 4th version.

中西醫結合治療和中醫治療的優勢

• 中西醫結合治療新冠肺炎療效具有以下三個特點：

1. 對普通型患者能改善症狀，縮短療程，促進痊癒；
2. 對重症、危重症患者，可減輕肺部滲出，控制炎症過度反應，防止病情惡化；
3. 對恢復期患者，可促進其康復進程。

國家新冠肺炎診療方案一直都有中醫方案，做到了中醫治療早期的介入和全程介入，中西醫結合取得了很好的療效。

Ref. 韩园园, et al., 中西医结合治疗新型冠状病毒肺炎的应用分析. 中草药. 2020, 51(4):878-882.

• 本次COVID-19的診治中，中醫藥的優勢體現在以下三點：

1. 靈活性、個性化的治療：整體觀念、辯證論治，三因制宜的體現了具體情況具體分析，針對病人和國家的治療版本三版以後的分期論治；
2. 治療的穩定性：意識到本病為一種疫病，並開發了專方專藥，如清肺排毒湯；
3. 中西醫結合治療優勢互補：尚未知中藥對改善患者個別症狀和全身狀況方面具有一定的優勢。

Ref. 程健珊, et al., 中醫藥防治新型冠狀病毒感染的肺炎 (COVID-19) 的進展及展望. 2020, 15(2):11-20.

面對新發傳染病，中醫治療的優勢和不足

- 回顧分析這次中醫在COVID-19的脈因證治，結合中醫在歷史上及其他新發傳染病的應用，說明中醫治療疫病的優勢，其有方藥，仍是有證，用藥，隨一不明病原時，仍有證，知犯何逆，隨中醫是“有是證，知犯何逆，隨證治之”，所以將來對任何新發傳染病，根據中醫經驗，可以提出自己的診療方案。
- 但缺點是缺乏臨床和科學證據，如果加入現代研究方法（臨床觀察、隨機雙盲對照的臨床試驗、真實世界的臨床實踐記錄、體內外科學實驗等），就可以在治療患者同時，就可快速得到臨床證據和科學實驗的證據。
- 這次的COVID-19就加入了科研因素，與西醫一樣快速獲得了一些臨床和科學證據，中國政府一向重視中醫和中西醫結合工作，認為西醫、中醫、中西醫結合治療同等重要，所以國家新做到中西醫結合治療方案，早期介入，中西醫結合取得了很好的療效。

中國新冠肺炎方案和三藥三方 COVID-19 Protocol and “three drugs and three Prescriptions” of China

- 理論：內經、傷寒、溫病等熱病學說. Theory: theory of exogenous febrile disease such as internal classics, Treatise on Exogenous Febrile, and other fever theories
- 實踐：歷史上3百多次瘟疫流行，現代乙型腦炎、流行性腦脊髓膜炎、流行性出血熱、各類流感，SARS，COVID-19及將來的新發傳染病等. Practice: used for over three hundred epidemics in history, modern Japanese encephalitis, epidemic cerebrospinal meningitis, epidemic hemorrhagic fever, various types of influenza, SARS, COVID-19 and new infectious diseases
- 優勢：原因不明，仍可以有治療方案，原因已明，可以有更好的方案，辨證論治、分期論治、專病專方，老方新用，創制新方，中西醫結合. Advantages: The cause is unknown, there can still be a treatment plan, the reason is clear, there can be a better plan, syndrome differentiation treatment, treatment by stages, special treatment of special diseases, the old prescription for new use, new prescription for new diseases, integrated Chinese and Western medicine

金花清感顆粒用於潛伏期或衛分階段，銀翹散與麻杏石甘湯的合方加浙貝母、青蒿等

連花清瘟膠囊用於輕症仍屬衛分夾濕，也由銀翹散與麻杏石甘湯的合方加板藍根、綿馬貫眾、魚腥草、廣藿香、大黃、紅景天等。體外實驗，對新冠病毒有抑制作用

血必淨注射液用於重症屬營血證，主要藥物紅花、赤芍、川芎、丹參、當歸等，適用於全身炎症反應，也可配合治療多器官功能失常綜合征

- 中國發佈了新型冠狀病毒感染的肺炎診療方案一至七版China issued the first to seventh versions of the new coronavirus infection pneumonia diagnosis and treatment plan
- 中西醫結合防治 Integrated Chinese and Western Medicine
- 辨證分期治療 syndrome differentiation treatment and treatment by stages
- 三藥三方（金花清感顆粒、連花清瘟膠囊、血必淨注射液、清肺排毒湯、化濕敗毒方、宣肺敗毒方） Three medicines and three prescriptions (Jinhua Qinggan Granules, Lianhua Qingwen Capsules, Xuebijing Injection, Qingfei Paidu Decoction, Huashi Baidu Decoction, Xuanfei Baidu Decoction)

清肺排毒湯21味藥包括麻杏石甘湯、射干麻黃湯、小柴胡湯、五苓散加減而成，輕、中、重、危重均可加減運用

化濕敗毒方14味藥用於重症，由麻杏石甘湯、宣白承氣湯、達原飲、藿香正氣散、桃仁承氣湯、葶藶大棗瀉肺湯等加減而成，清三焦濕熱毒瘀

宣肺敗毒方由麻杏石甘湯、麻杏薏甘湯，千金葶藶湯和葶藶大棗瀉肺湯加減得十餘味藥，臨床研究在控制炎症、提高淋巴細胞計數方面具有顯著療效。與對照組相比，淋巴細胞的恢復提高17%，臨床治愈率能夠提高22%

RCT 和 各類臨床研究

Treatment of COVID-19 by anti-viral, anti-inflammatory and cytokine storm and inhibit ACE2 receptor etc.

網絡藥理學、化學和深入的機制研究

中國對單一中藥, 有效成分和複方治療新冠肺炎的研究

Analysis on single herbal medicines and composite formulae used in treatment of COVID-19 in China

系統分析單一中藥和可能的有效成分及其化學骨架分析

Systematic analysis of a single Chinese medicine and possible active ingredients and their chemical skeleton analysis

Chen's team conducted a systematic analysis of Chinese medicines and prescriptions used in the treatment of new coronary pneumonia, providing references for the screening of natural and synthetic drugs for new coronary pneumonia, as well as the selection of clinical trial drugs, and speeding up the search for effective natural drugs to inhibit the new coronavirus process. Analysis on single herbal medicines utilized for treatment of COVID-19 by Prof. Chen's team *Acta Pharma Sin B* 2020; <https://doi.org/10.1016/j.apsb.2020.05.007>

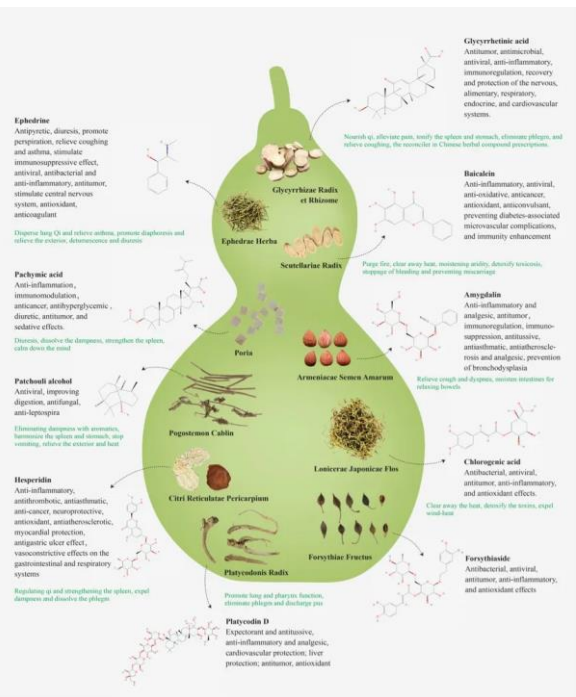


Figure 1 The top ten Chinese medicines and their important chemical components used in the treatment of new coronary pneumonia

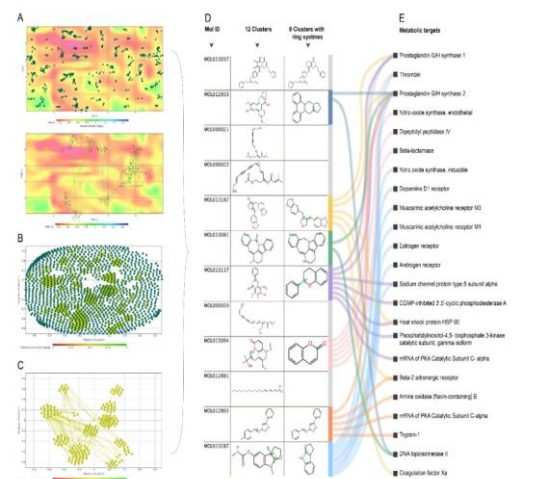
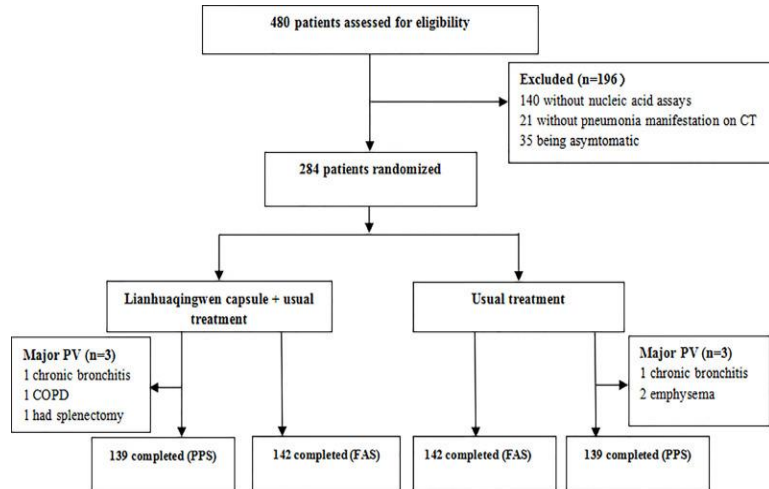


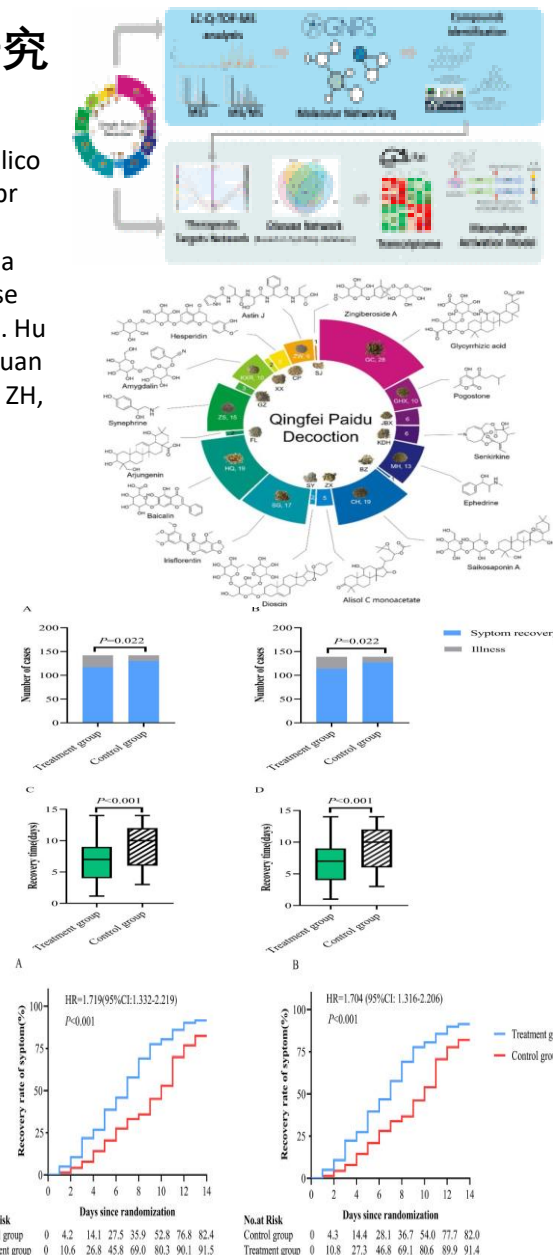
Figure 2 The 12 main chemical structures, 8 ring structures and possible metabolic pathways obtained by chemical skeleton analysis, self-organizing feature mapping and systematic clustering analysis of the chemical components of traditional Chinese medicine for the treatment of new coronary pneumonia

對複方治療新冠肺炎的基礎和臨床研究

1. 基礎研究: Chemical composition and pharmacological mechanism of Qingfei Paidu Decoction and Ma Xing Shi Gan Decoction against Coronavirus Disease 2019 (COVID-19): In silico and experimental study. Yang R et al. *Pharmacol Res.* 2020 Apr 29;157:104820.
2. 臨床研究: Efficacy and Safety of Lianhuaqingwen Capsules, a repurposed Chinese Herb, in Patients with Coronavirus disease 2019: A multicenter, prospective, randomized controlled trial. Hu K, Guan WJ, Bi Y, Zhang W, Li L, Zhang B, Liu Q, Song Y, Li X, Duan Z, Zheng Q, Yang Z, Liang J, Han M, Ruan L, Wu C, Zhang Y, Jia ZH, Zhong NS. *Phytomedicine.* 2020 May 16:153242.



Zhong's team carried out a prospective, randomized, controlled, national multi-center clinical trial of Lianhua Qingwen in the treatment of new coronavirus pneumonia. The results showed that after 14 days of treatment in the Lianhua Qingwen treatment group, the cure rate of main clinical symptoms (fever, fatigue, cough) was significantly higher than that of the control group, reaching 57.7% on the 7th day of treatment, and 80.3% on the 10th day of treatment. It reached 91.5% on the 14th day. The duration of individual symptoms of fever, fatigue, and cough is also significantly shortened. Lianhua Qingwen treatment can also significantly improve the improvement rate of lung CT imaging abnormalities and increase the overall clinical cure rate.



Noat risk	Control group	0	4.2	14.1	27.5	35.9	52.8	76.8	82.4
Treatment group	0	10.6	26.8	45.8	69.0	80.3	90.1	91.5	

Noat Risk	Control group	0	4.3	14.4	28.1	36.7	54.0	77.7	82.0
Treatment group	0	10.8	27.3	46.8	69.1	80.6	89.9	91.4	

Why we still need to do bench and clinical study for Chinese medicine against COVID-19?

- Worldwide $1,456,687/62,363,527 = 2.336\%$
- USA $263,946/13,082,877 = 2.017\%$
- Canada $11,976/364810 = 3.283\%$
- Switzerland $4,236/317,017 = 1.336\%$
- Russian Federation $39,895/2,295,654 = 1.738\%$
- The United Kingdom $58,245/1,617,331 = 3.601\%$
- Germany $16,248/1,053,869 = 1.542\%$
- Kenya $1,452/83,316 = 1.7423\%$
- China $4750/93577 = 5.076\%$
- India $137,139/9,431,691 = 1.454\%$
- Japan $2,119/146,760 = 1.444\%$
- Korea $526/34,201 = 1.538\%$
- Singapore $29/58,213 = 0.050\%$
- Hong Kong $109/6315 = 1.727\%$
- It is roughly calculated by WHO data on December 1, 2020
- Death ration need to be elaborated by medical condition, social condition, age, sex, other diseases and psychological issues etc.
- whether combination with traditional medicine treatment or not are important issue to further evaluation.
- General issues need to be addressed: life style, behavior and traditional medicine prevention etc.
- Scientific and clinical evidence for traditional medicine prevention and treatment in COVID-19

香港中醫藥界應對COVID-19 Chinese Medicine against COVID-19 in Hong Kong

-藥物註冊 Drug registration

蓮花清瘟膠囊在香港註冊
Registration of Lianhua Qingwen Capsule in Hong Kong

香港中醫雜誌2020年第二期



新型冠狀病毒疾病 (COVID-19) 的中醫藥防治進展及展望 Progress and prospect in the prevention and treatment of COVID-19 with Chinese medicine

程健興, 吳瑋, 陳建洋, 羅望, 蔡輝穎, 石軍, 榮建輝, 張達達, 沈劍剛, 馮奕斌*
CHENG Jianxiang, WU Wei, CHEN Jianping, et al.

(香港大學中醫藥學院 *通訊作者: yfeng@hku.hk)

[摘要] 新型冠狀病毒肺炎是由SARS-CoV-2引起的具有傳染性的急性呼吸道綜合徵，疫情發於武漢，此前被大規模散全國及世界多國，被世界衛生組織列為「國際關注的突發公共衛生事件」隨後，WHO進一步將其定名為全球大流行 (Global Pandemic)，並正式命名為2019新型冠狀病毒疾病 (COVID-19)。目前，作為新發疾病，尚未出現針對該病毒的特異性藥物，西醫治療主要以抗病毒、對症和支持治療為主。中國發佈新型冠狀病毒肺炎的肺炎診療方案一至七版，自第三版起，公佈中醫藥具體防治方案，中西醫結合治療成為國內的主要治療方式，加上各省市的治療方案，中醫治療豐富多彩。本文歸納總結本病的中醫診斷和治療的演變，分析中醫病機及其診療的複雜性，以及臨床研究和藥物研究方面的進展。基於國家和各省市的方案和臨床經驗，提出香港大學中醫藥學院對本病的防治方案及中醫藥在香港急性傳染性新發疾病中應用的可行性和展望。

[關鍵詞] 新型冠狀病毒肺炎；診療；中醫；香港防治方案

1 背景

新型冠狀病毒肺炎，暫命名為「新型冠狀病毒肺炎」，簡稱「冠肺炎」，英文名稱為「Novel Coronavirus Pneumonia」，簡稱「NCP」，世界衛生組織將其正式命名為2019冠狀病毒疾病^[1] (Coronavirus disease 2019, COVID-19)。COVID-19是一種由β屬的冠狀病毒^[2] (SARS-CoV-2，一種類似SARS的病毒^[3]) 引起的、具有傳染性的急性呼吸道綜合徵，臨床表現為發熱、咳嗽、乏力，以肺部為主要病變部位，多呈現雙側肺部感染，部分病例快速發展為急性呼吸窘迫綜合徵及急性呼吸衰竭^[4]，死亡率約為2.38%^[5]。根據目前的流行病學調查，人群具有普遍易感性，存在人與人之間傳播^[6]。目前所見傳染源主要是病毒感染的患者，可通過呼吸道飛沫和接觸等多個管道傳播^[10, 11]，通常潛伏期為7-14天，但亦有病例潛伏期長達24天^[12]，現已納入《中華人民共和國傳染病防治法》規定的乙類傳染病，按照甲類傳染病管理^[13]。2020年1月30日由世界衛生組織宣佈構成「國際關注的突發公共衛生事件」(英語: Public Health Emergency of International Concern; 簡稱: PHEIC)^[13]。冠狀病毒 (Coronavirus) 最早於1937年從雞身上分離出來；1965-1968年間, Tyrrel、Byone、Hamre、McIntosh、Almeida等人先後利用體外培養方法，從感冒患者鼻腔沖洗液中分離出人類冠狀病毒HCoV-229E、HCoV-OC43株，並利用電子顯微鏡進行形態學研究，發現病毒的包膜上有形狀類似日冕的棘突，將其命名為冠狀病毒，並於1975年正式由病毒命名委員會命名為冠狀病毒科^[14]。冠狀病毒感染在全世界非常普遍，2003年，冠狀病毒感染引起至今最大的公共衛生事件，即嚴重急性呼吸綜合徵 (SARS)，其後，2012年，MERS-CoV引發中東呼吸綜合徵，以及2019年於中國武漢地區發生新型冠狀病毒肺炎導致的肺炎疫情。目前研究顯示其與蝙蝠SARS樣冠狀病毒 (bat-SL-CoVZC45) 同源性達85%以上，認為是一種新型的冠狀病毒感染^[15]。

2 冠肺炎的臨床流行病學特徵：

COVID-19自2019年12月以來，起初認為為病毒宿主與人之間傳播感染，後出現在密切接觸人群中的人際傳播^[16]。根據香港大學李嘉誠醫學院世衛組織公共衛生學院傳染病流行病學和控制中心預測，在疫情爆發的早期階段 (2019年12月1日到2020年1月25日)，COVID-19的R0為2.68，即疫情規模每6.4天翻一倍，推測截止2020年1月25日，武漢及周邊地區可能

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COVID-19: An Update on the Epidemiological, Clinical, Preventive and Therapeutic Evidence and Guidelines for Integrative Chinese-Western Medicine for the Management of 2019 Novel Coronavirus Disease

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Published 13 March 2020

Abstract: As of 22 February 2020, more than 77662 cases of confirmed COVID-19 have been documented globally with over 2360 deaths. Common presentations of confirmed cases include fever, fatigue, dry cough, upper airway congestion, sputum production, shortness of breath, myalgia/arthralgia with lymphopenia, prolonged prothrombin time, elevated C-reactive protein, and elevated lactate dehydrogenase. The reported severe/critical case ratio is approximately 7-10% and median time to intensive care admission is 9.5-10.5 days with mortality of around 1-2% varied geographically. Similar to outbreaks of other newly identified virus, there is no proven regimen from conventional medicine and most reports managed the patients with lopinavir/ritonavir, ribavirin, beta-interferon, glucocorticoid and supportive treatment with remdesivir undergoing clinical trial. In China, Chinese medicine is proposed as a treatment option by national and provincial guidelines with substantial utilization. We reviewed the latest national and provincial clinical guidelines, retrospective cohort studies, and case series regarding the treatment of COVID-19 by add-on Chinese medicine. We have also reviewed the clinical evidence generated from SARS and H1N1 management with hypothesized mechanisms and latest *in silico* findings to identify candidate Chinese medicines for the consideration of possible trials and management. Given the paucity of strongly evidence-based regimens, the available data suggest that Chinese

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1

- 綜述 review articles



Opinion paper

Highlights of traditional Chinese medicine frontline expert advice in the China national guideline for COVID-19

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ABSTRACT

Introduction: The World Health Organization declared the coronavirus disease (COVID-19) as a pandemic on 11 March 2020, after the number of confirmed cases outside China increased 13-fold. As the epicentre of the initial outbreak, China has been updating the National COVID-19 Diagnostic and Treatment Guideline with up-to-date information about the disease. To facilitate the implementation of integrative Chinese-Western Medicine in COVID-19 management, Traditional Chinese medicine (TCM) has been recommended in recent editions of the national guideline.
Methods: The national guideline summarised the opinions and frontline experience of medical experts across the country to provide by far the best management for COVID-19. We extracted the case definition and clinical classifications of COVID-19 in China along with relevant TCM treatments cited in the seventh edition of the guideline, with an intent to disseminate practical information to TCM clinicians and researchers around the world.
Results: We present the most recent case definition, clinical classifications, and relevant TCM treatments of COVID-19 in accordance with the recommendations in the Chinese guideline. TCM treatments are stratified into two groups based on patients' disease status. Four types of Chinese patent medicines are recommended for suspected COVID-19 cases. Several herbal formulae are recommended for confirmed COVID-19 cases according to their clinical classification and TCM pattern diagnoses. Two herbal formulae are also recommended for re-habilitation of recovering cases.
Conclusion: To control the waves of COVID-19 outbreak, countries must ensure the adherence of their citizens to local public health measures. Medical professionals should diagnose and treat patients according to up-to-date guidelines. Future evaluation of the outcomes of implementing TCM recommendations will strengthen the evidence base for COVID-19 management for the sake of public health and the internationalisation of TCM.

1. Background

The coronavirus disease (COVID-19) unfolded in Wuhan, China, in December 2019 [1]. Without effective control measures, the disease has spread across the globe with more than one hundred countries reporting confirmed cases [2]. Having realised that the number of new confirmed cases outside China has increased 13-fold, the World Health Organization finally decided to characterise COVID-19 as a pandemic

on 11 March 2020 and requested member states to scale up their emergency response mechanisms [2].

Being the epicentre of the initial outbreak, China developed and has been constantly updating its National COVID-19 Diagnostic and Treatment Guideline with up-to-date information about the aetiology, epidemiology, pathology, clinical features, diagnosis, and treatments of the disease. With strong support from the Chinese government [3], Traditional Chinese Medicine (TCM), as a core component of the

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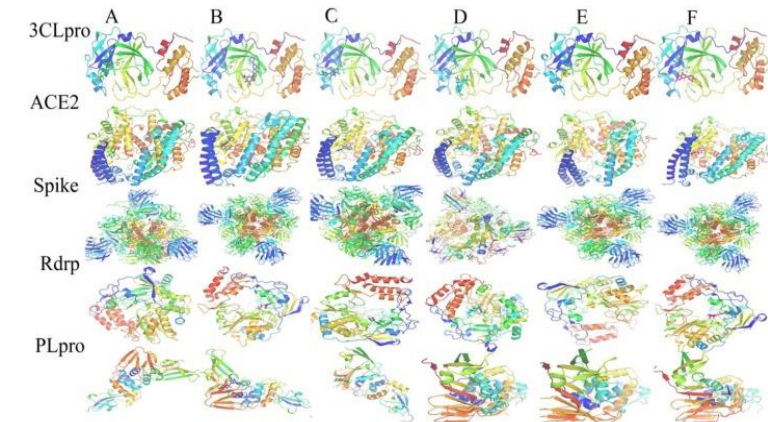
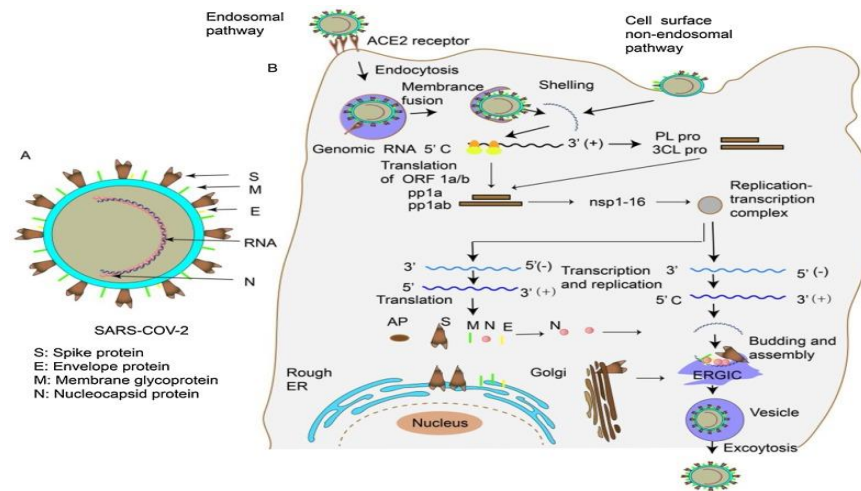
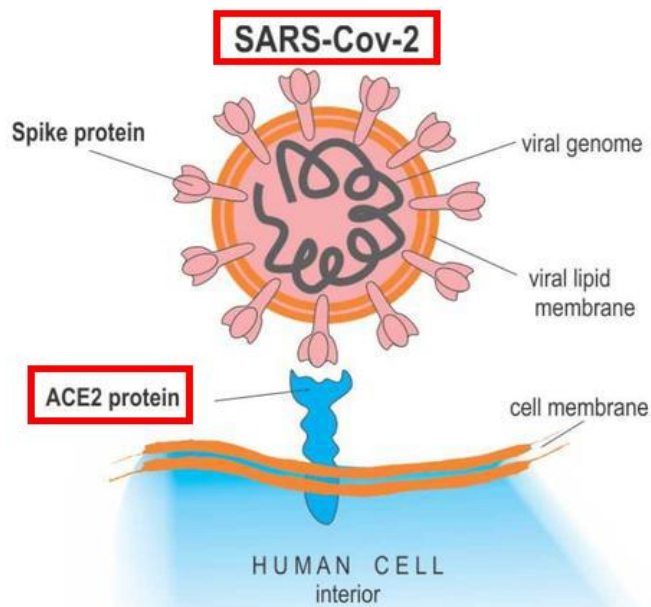
香港中醫學者評價診療方案中的中醫內容

Highlight of traditional Chinese Medicine frontier expert advice in Chinese national guideline for COVID-19

香港中醫藥界應對COVID-19

Chinese Medicine against COVID-19 in Hong Kong Clinical and basic research

- Clinical study in Prof. Zhang's group
- Drug discovery and mechanism of action in Prof. Feng, Dr. Chen's group and Prof. Shen's group, i.e. Hansen Chen and Qiaohui Du



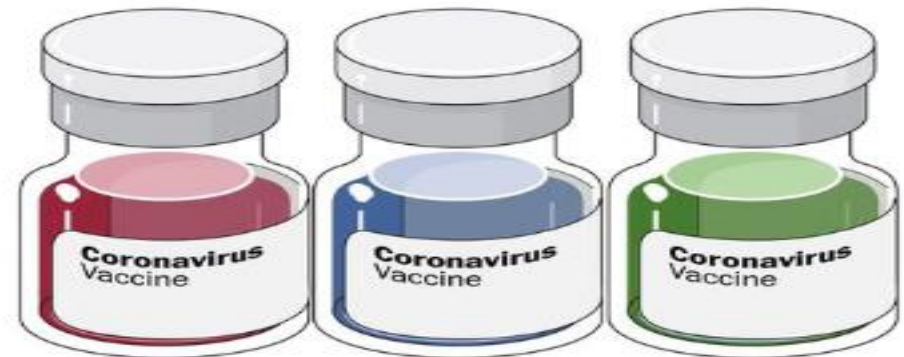
A review of therapeutic agents and Chinese herbal medicines against SARS-CoV-2 (COVID-19). Huang F et al., *Pharmacol Res.* 2020 May 20;158:104929. Fig. 2 Life cycle of SARS-CoV-2 in host cells. (A) Structure of SARS-CoV-2. (B) Mechanism of SARS-CoV-2 infection.

Fig. 3 The optimized binding patterns of ligands with key targets of SARS-CoV-2 by molecular docking, including (A) Andrographolide, (B) Baicalin, (C) Quercetin, (D) Glycyrrhizic acid, (E) Patchouli alcohol and (F) Luteolin.

Vaccines can be used now!



- Several Vaccines are in Clinical trials and some of the have used in susceptible population
- Recently, mRNA vaccines created by Moderna and Biotech Pfizer.
- Based on research results of Katalin Kariko and Weissman

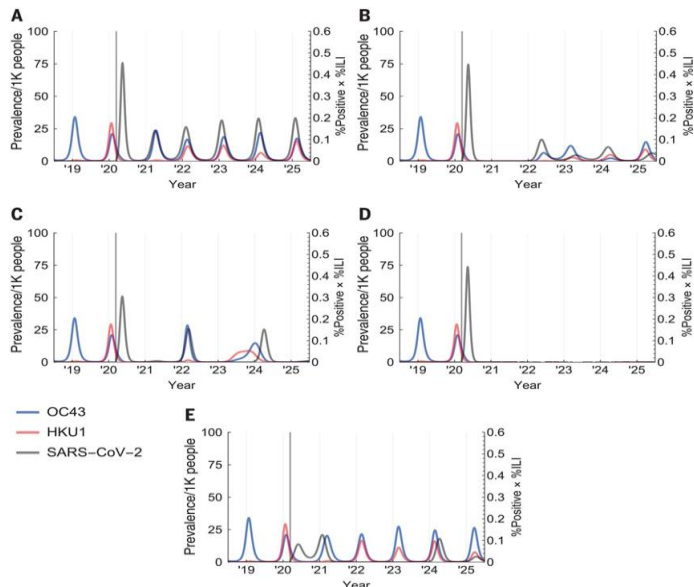


Why we should do research on prevention of COVID-19 by traditional medicine?

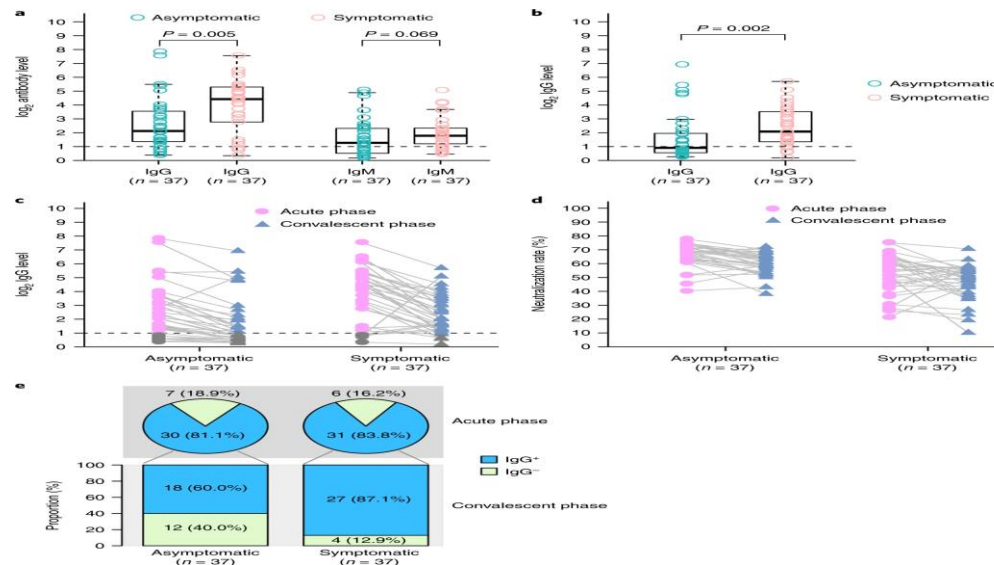
- **Vaccines effect:** November 23: U.S. failed to control pandemic, but vaccination provides 'chance to get next phase right' (Harvard Gazette). However, we don't know long time effect of the vaccines.
- **Seasonal visit:** COVI-19 maybe outbreak reaptely accoring to a methmatic model (Stephen M. Kissler et al. Science 2020;368:860-868)
- **Gone again:** You may have antibodies after cronavirse infection, but it will dispeared queckly (Long, QX., Tang, XJ., Shi, QL. *et al.* Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections. *Nat Med* 26, 1200–1204 (2020). <https://doi.org/10.1038/s41591-020-0965-6>)

- **COVID-19 of twice infection:** it's possible to get twice, and a man living in HK who did not have any symptoms in second time. This is the first report for twice infection of SARS-CoV-2 published in the world (*Clinical Infectious Diseases, August 14*). It's possible not only to get COVID-19 twice, but also to be sicker the second time (*Diseases evidence for reinfection with SARS-CoV-2: a case study. The Lancet infectious diseases. October 12, 2020* DOI: [https://doi.org/10.1016/S1473-3099\(20\)30764-7](https://doi.org/10.1016/S1473-3099(20)30764-7)).

Invasion scenarios for SARS-CoV-2 in temperate regions.



IgG and IgM levels in the acute and convalescent phases in patients infected with SARS-CoV-2.



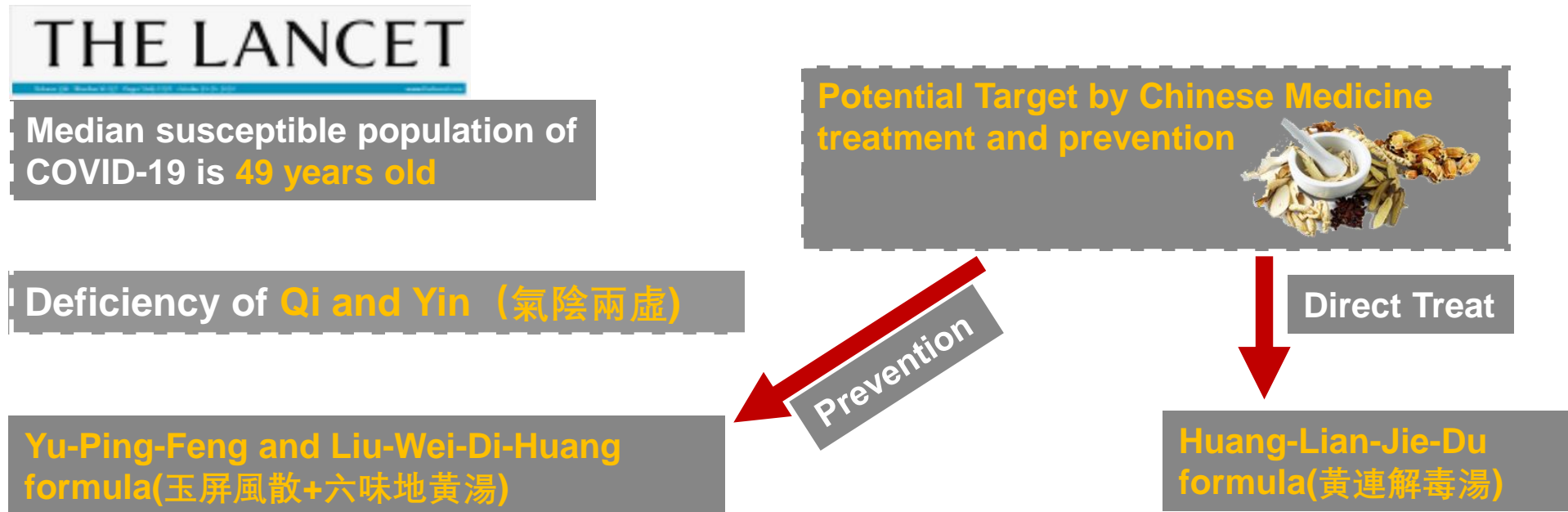
- **SARS-Cov-2** will become the top killer of the elderly or weak people with various diseases for a long time, and the overall medical expenditure of humanity will rise sharply, and life expectancy will decrease.
- **Vulnerable or susceptible people:** vaccination by various vaccines for specific body defence.
- **Vulnerable or susceptible people:** nutrition, excise, psychological counselling for general support
- **Vulnerable or susceptible people:** diet treatment and herbal medicine intervention based on the theory of "body constitution of Chinese Medicine" and "combination of prescription and syndrome" to improve COVID-19 susceptible body constitution and strengthen body defense.

Chinese Medicine prevention for COVID 19

Three steps for modern measures of prevention for infection diseases including COVID-19:

- Controlling transmission routes
- Cutting off pathogens (Direct with COVID19 inhibition)
- Reducing susceptible populations and strengthen body defense (Indirect with COVID19 inhibition)

We focus on the later two.



Yu-Ping-Feng formula(玉屏風散)



Yu-Ping-Feng formula(玉屏風散)

Constitute :

Huang Qi

Fang Feng

Bai Zhu

- During the “SARS” period in 2003, Yupingfeng formula was confirmed as a preventive formula used in Beijing, Shanghai, Guangzhou, Sichuan, which exerted profound beneficial effects.
- Now it is used in more than 10 cities in Mainland China for COVID19 prevention

Liu-Wei-Di-Huang formula (六味地黃湯)



Liu-Wei-Di-Huang decoction (六味地黃湯)

Constitute :

Shu Di Huang

Shan Zhu Yu

Shan Yao

Ze Xie

Fu Ling

Mu Dan Pi

Liu-Wei-Di-Huang formula is a famous prescription composed of “three tonics” and “three laxatives”. It is a classic prescription for liver and kidney yin deficiency.

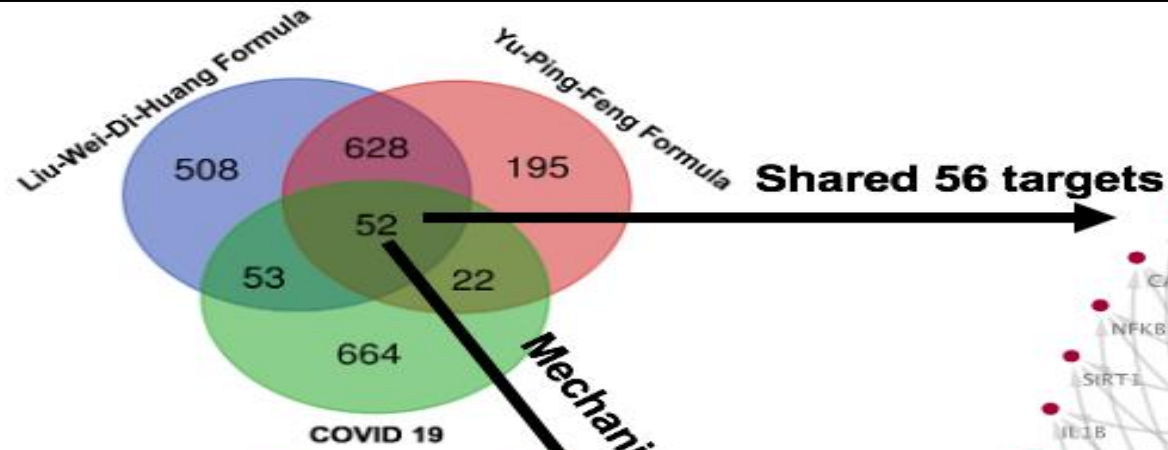
Yu-Ping-Feng and Liu-Wei-Di-Huang Formula (玉屏風散+六味地黃湯)



Individuals with deficiency of Qi and Yin and treated with Yu-Ping-Feng and Liu-Wei-Di-Huang formula, the following symptoms will reduce:

- Tiredness and weakness, shortness of breath when moving;
- Fear of heat, five heart hot, self-perspiration and night sweat;
- Red tongue, thin white or light peeling, weak and fast pulse

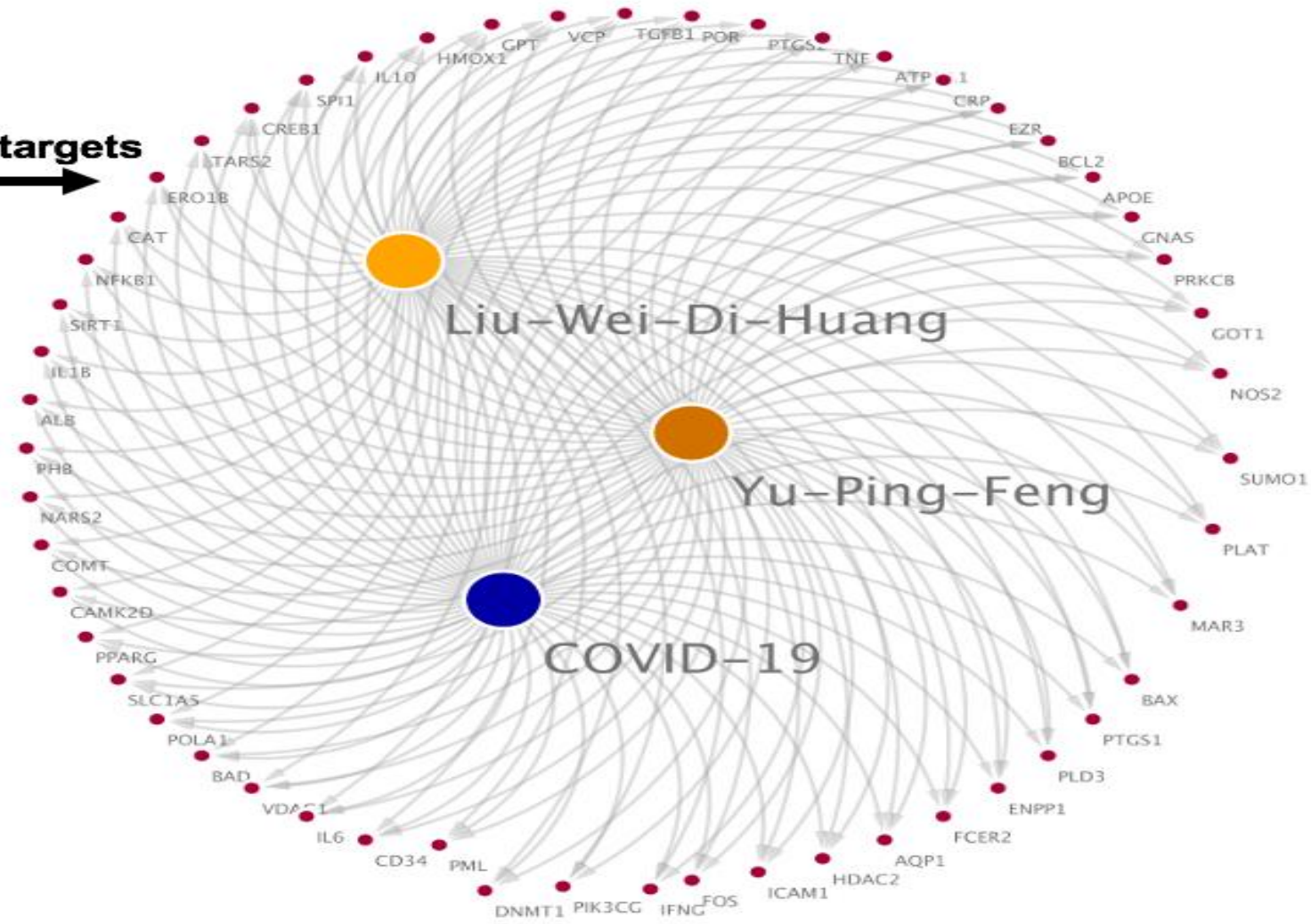
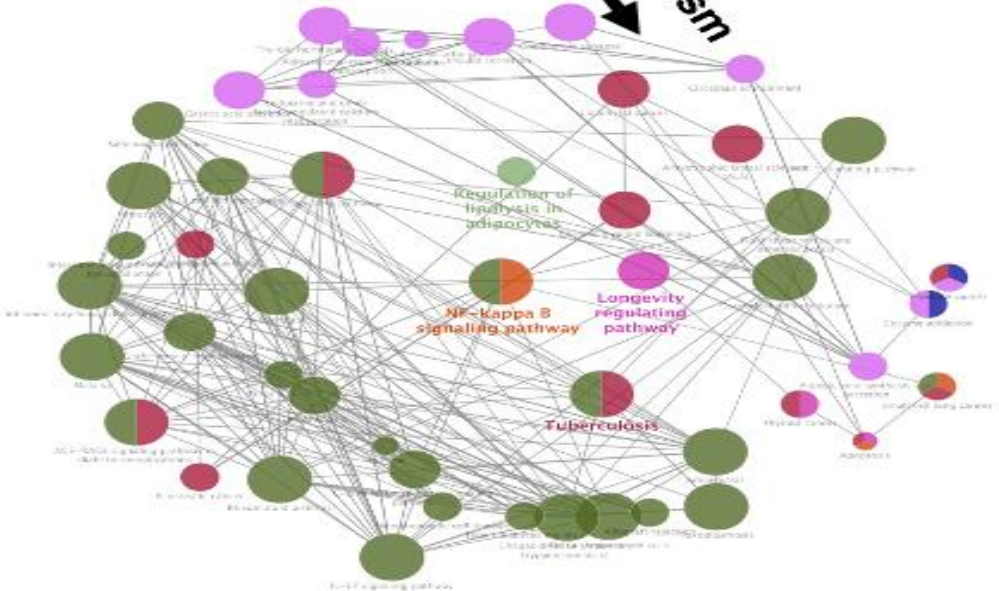
Network pharmacology-based target mining



Shared 56 targets

Mechanism

COVID 19



Some shared targets among Yu-Ping-Feng formula, Liu-Wei-Di-Huang formula, and COVID-19, which mainly regulate NF- κ B inflammatory related pathway

RCT plan

Primary outcome will be focused on change of fatigue symptom

- Evaluation of the improvement of COVID19-related susceptible body constitution by TCM preventive treatment

Questionnaires:

“Self-test for classification and judgment of body constitution by TCM theory (中醫體質分類判定自測表)”

“Questionnaire of TCM symptom (中醫症狀調查表)”

“Fatigue scale (疲勞量表)”

Second outcome will be focused on change of biochemical parameters

- Assessment of the distribution of COVID-19 susceptible residents in Hong Kong
- Identify the changes of blood biomarker which may be fluctuated by COVID-19

Included biochemical indicators:

Blood routine: Complete Blood Count (including monocyte), Erythrocyte sedimentation rate

Liver function: Aspartate aminotransferase (AST), Alanine aminotransferase (ALT)

Heart function: Lactate dehydrogenase (LDH), Troponin I

Kidney function: Creatinine, Blood urea

Inflammation-related indicator: C-reactive protein, IL-6, CD4/CD8 ration etc.

Group & Formulae

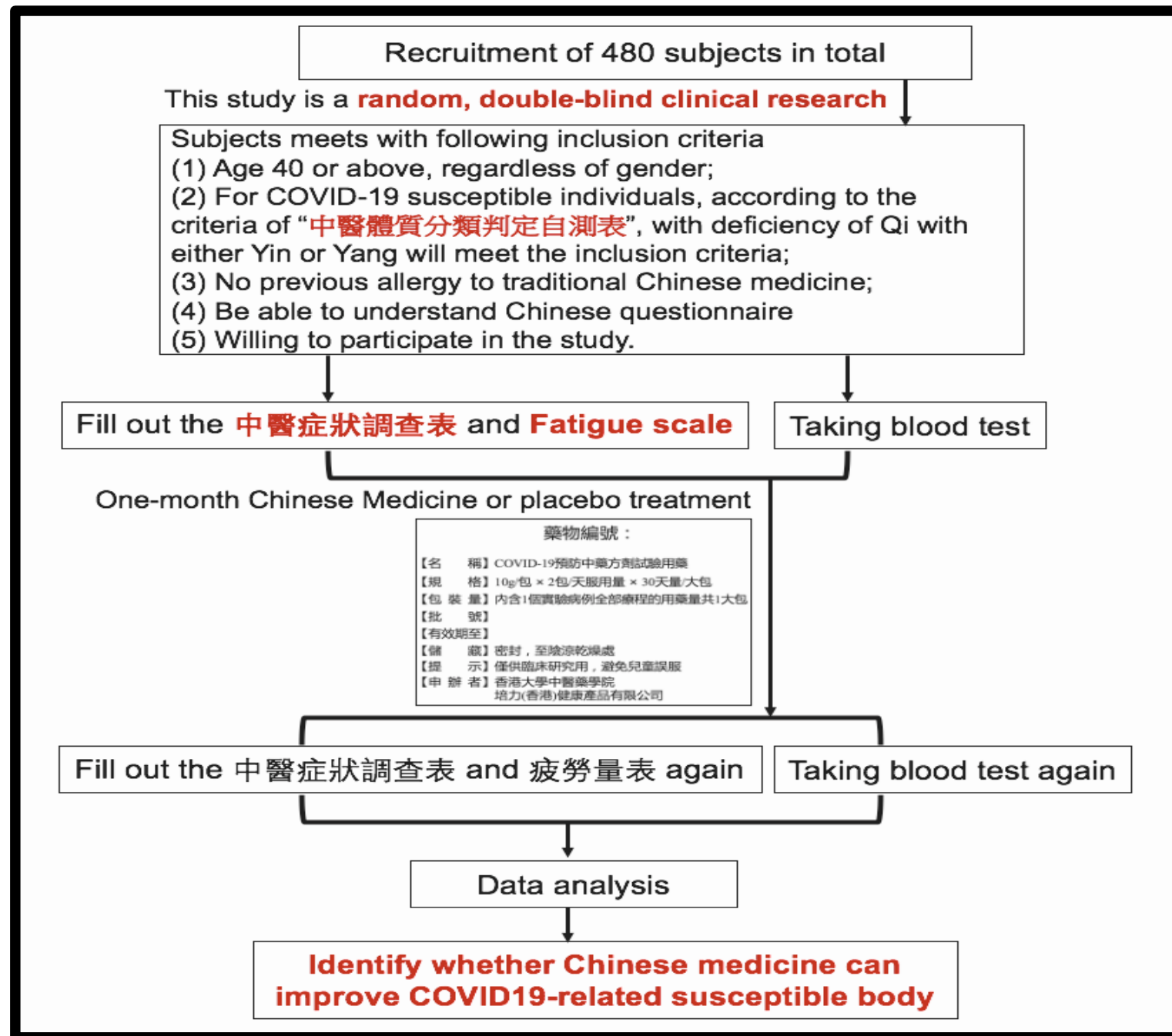
Symptom	Group	Formula
Deficiency of Qi and Yang	QYang-Chinese Medicine	Yu-Ping-Feng and Xiang-Sha-Liu-Jun formula
	QYang-Placebo	Placebo
Deficiency of Qi and Yin	Qyin-Chinese Medicine	Yu-Ping-Feng and Liu-Wei-Di-Huang formula
	Qyin-Placebo	Placebo

Research design

This study is a **random, double-blind clinical research**. All the subjects will be equally divided into **Chinese medicine** or **Placebo** groups, respectively

Exclusion criteria

- Not meet the terms of the inclusion criteria;
- Suspected or confirmed COVID-19 patients;
- Fever, body temperature > 37°C with cough and other respiratory symptoms;
- Those who have visited the epidemic area and have not completed self-isolation for 14 days



Risk of specific TCM treatment

- Subjects with **external self-perspiration, yin deficiency and night perspiration** cannot use Yupingfeng formula (玉屏風散), since it may aggravate the symptoms of sweating and yin deficiency.
- Subjects with **dry mouth and tongue** cannot use Xiangsha Liujun formula (香砂六君子湯), because it may aggravate this symptom.
- Subjects **without obvious deficiency of kidney yin** should not take Liuwei Dihuang formula (六味地黃丸), because it will cause diarrhea and loss of appetite. We will exclude these kinds of subjects in this study.
- If subjects **with fever, dry cough, fatigue, runny nose, sore throat, diarrhea and other side effects**, we will terminate the clinical study of this subject and offer essential treatment for reducing the side effect. Meanwhile, we will report the situation to Hospital Authority during the current COVID-19 pandemic.

Schedule

2020/12/01-2021/05/31:

- Recruitment of qualified subjects (480) for this project
- Prepare Chinese medicines and placebos

2021/06/01-2022/05/31:

- Carry out clinical trials, including the data collection from scales and blood biomarkers from subjects

2022/06/01-2022/11/30:

- Analysis of clinical trial data to construct a database of the relationship between susceptible body for COVID-19 and the level of biomarkers in Hong Kong residents

Huang-Lian-Jie-Du formula (黃連解毒湯)



Huang-Lian-Jie-Du formula(黃連解毒湯)

Constitute :
Huang Qin
Huang Lian
Huang Bai
Zhi Zi

- Huanglian Jiedu Formula has a good clinical effect on pneumonia caused by heat toxin accumulation. It has a variety of antibacterial and anti-virus activities.

Huang-Lian-Jie-Du formula(黃連解毒湯)



Published articles regarding Huang-Lian-Jie-Du formula in our group

Contents lists available at [ScienceDirect](#)

 **Journal of Ethnopharmacology**
journal homepage: www.elsevier.com/locate/jep



Inhibition of eukaryotic elongation factor-2 confers to tumor suppression by a herbal formulation Huanglian-Jiedu decoction in human hepatocellular carcinoma 

Ning Wang^{a,b}, Yibin Feng^{a,b,*}, Hor-Yue Tan^a, Fan Cheung^a, Ming Hong^a, Lixing Lao^a, Tadashi Nagamatsu^c

 **frontiers**
in Pharmacology

ORIGINAL RESEARCH
published: 10 March 2020
doi: 10.3389/fphar.2020.00252

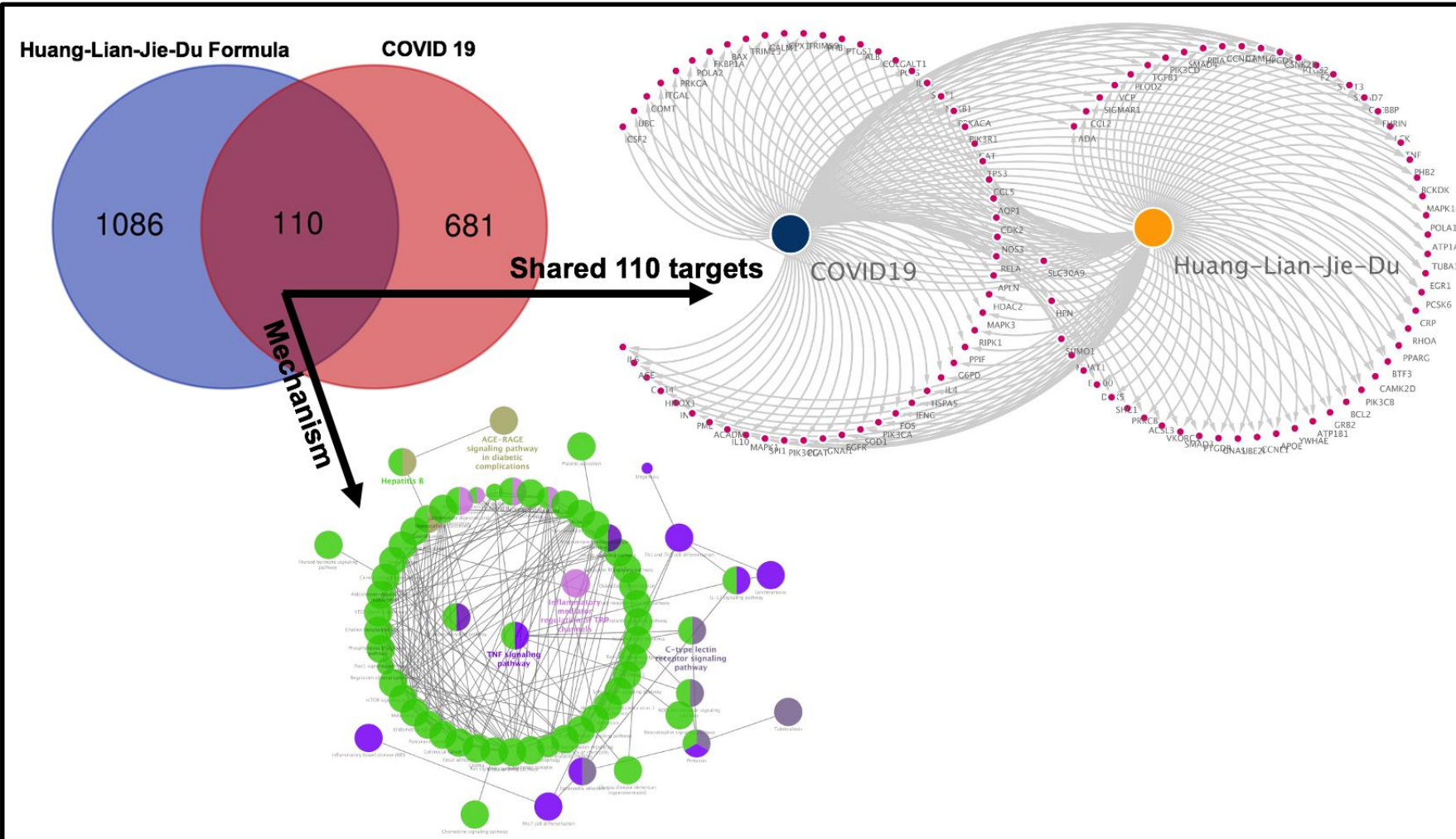


Ancient Chinese Medicine Herbal Formula Huanglian Jiedu Decoction as a Neoadjuvant Treatment of Chemotherapy by Improving Diarrhea and Tumor Response

Yau-Tuen Chan¹, Fan Cheung¹, Cheng Zhang¹, Bowen Fu¹, Hor-Yue Tan¹, Hisayoshi Norimoto², Ning Wang¹ and Yibin Feng^{1*}

Chinese medicine, being holistic and immunity strengthening, could also compensate for the weaknesses of Western medicine, particularly treatments such as cancer and chemotherapy. Though integrating Chinese and Western medicine in patient services is not common in Hong Kong, it is worth considering.

Network pharmacology-based target mining



110 shared targets among Huang-Lian-Jie-Du formula and COVID-19, which mainly regulate TNF and inflammation-related pathway



The University of Hong Kong

Thank you!

