

A Brief Review on Covid 19 by Treatment of Ayurveda

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ABSTRACT

In December 2019 in Wuhan, China the pneumonia caused by novel coronavirus (SARS-CoV-2) is a highly contagious disease. The World Health Organization (WHO) has declared the current rash as a global public health emergency. Currently, the research on novel coronavirus is immobile in the primary stage. Created on the recent published evidence, In this review systematically summarizes the epidemiology, clinical characteristics, diagnosis, treatment and prevention of knowledge surrounding COVID-19 also the ayurvedic treatments are placed. In this literature review, the causative agent, pathogenesis and immune responses, epidemiology, diagnosis, treatment and management of the disease, control and preventions strategies are all reviewed. This review in the anticipation of helping the public effectively recognize and deal with the 2019 novel coronavirus (SARS-CoV-2), also providing a reference for future studies.

KEYWORDS: Coronavirus, Covid-19, SARS-CoV-2, Ayurvedic treatments

How to cite this paper: Sneha. H. Salunkhe | Pooja. A. Petkar | Monali Lalge | Nilesh Bhosale "A Brief Review on Covid 19 by Treatment of Ayurveda" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-4 | Issue-4, June 2020, pp.1408-1416, URL: www.ijtsrd.com/papers/ijtsrd31574.pdf



IJTSRD31574

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1. INTRODUCTION

In late December 2019, a case of unidentified pneumonia was reported in Wuhan, Hubei Province, People's Republic of China (PRC). Its clinical characteristics are very comparable to those of viral pneumonia. After analysis on respiratory samples, PRC Centers for Disease Control (CDC) experts stated that the pneumonia, later known as novel coronavirus pneumonia (NCP), was caused by novel coronavirus [1]. WHO officially named the disease COVID-19. International Committee on Taxonomy of Viruses (ICTV) termed the virus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Designation of official name for the novel coronavirus and the disease it caused is conducive to communications in clinical and scientific research. This virus belongs to β - coronavirus, a large class of viruses predominant in nature. Similar to further viruses, SARS-CoV-2 has many possible natural hosts, intermediate hosts and final hosts. This positions great challenges to prevention and treatment of virus infection. Compared with SARS and MERS, this virus has high transmissibility and infectivity, despite of low mortality rate[2]. Genome analysis of novel coronavirus sequences discovered that the complete genome sequence recognition rates of SARS-CoV and bat SARS coronavirus (SARSr-CoV-RaTG13) were 79.5% and 96% respectively[3]. It suggests that the coronavirus capacity initiate from bat. On 29 February 2020, data published by World Health Organization showed that, since 12 December 2019 when the first case was reported, 79,394 cases were confirmed to be infected by novel coronavirus and 2,838 individuals were died in total[4]. In the meantime, 6009 cases were confirmed and 86 were died in 53 countries and regions exterior of

China (Figure 1) [4]. It posed a unnecessary threat to global public health. This report reviews the genetic structure, infection source, transmission route, pathogenesis, clinical characteristics, and treatment and prevention of the SARS-CoV-2, subsequently that it can provide references for follow-up research, prevention and treatment, and can help readers to have the newest thoughtful of this new infectious disease.

Genetic structure and pathogenic mechanism of SARS-CoV-2

Coronavirus (COV) is a single strand RNA virus with a diameter of 80-120nm. It is divided into four types: α -coronavirus (α -COV), β -coronavirus (β -COV), δ -coronavirus (δ -COV) and γ - coronavirus (γ -COV) [5]. Six coronaviruses were previously known to cause disease in humans; SARS-CoV-2 is the seventh member of the coronavirus family that infects human beings after SARS-Cove and MERS-CoV [6]. SARS-CoV-2, like SARS-Cove and MERS-Cove, belongs to β -coronavirus. The genome sequence homology of SARS-CoV-2 and SARS is about 79%, the 2019-nCoV is closer to the SARS-like bat Coves (MG772933) than the SARS-Cove[7], which is descended from SARS-like bat Coves. Interestingly, for high similarity of receptor-binding domain (RBD) in Spike-protein, several analyses reveal that SARS-CoV-2 uses angiotensin-converting enzyme 2 (ACE2) as receptor, just like as SARS-CoV [8]. Coronavirus mainly recognizes the corresponding receptor on the target cell through the S protein on its surface and enters into the cell, then causing the occurrence of infection. A structure model analysis

shows that SARS-CoV-2 binds ACE2 with above 10 folds higher affinity than SARS-CoV, but higher than the threshold required for virus infection [9]. The detailed mechanism about whether the SARS-CoV-2 would infect humans via binding of S-protein to ACE2, how strong the interaction is for risk of human transmission, and how SARS-CoV-2 causes pathological mechanisms of organs damage remains unknown, which need more studies to elaborate. These results further explains the more rapid transmission capability of the SARS-CoV-2 in humans than SARS-CoV, and the number of confirmed COVID-19 much higher than people with SARS-CoV infection. Considering the higher affinity of SARS-CoV-2 binds ACE2, soluble ACE2 might be a potential candidate for COVID-19 treatment.

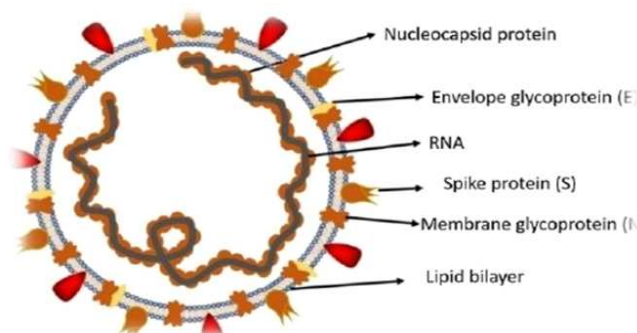


Fig. 1: Structure of COVID-19

2. Prevalence of SARS-CoV-2

Basic Reproduction Number (R_0) refers to the average amount of secondary infection that and his colleagues attuned R_0 to be 2.0-3.3 using the IDEA model [12]. The R_0 value of other viruses of patients can produce in entirely vulnerable population without intervention [10]. The estimation of R_0 differs between different research teams and is updated as more information is exposed. Wu, JT, Leung et al. of York University assessed the R_0 of novel coronavirus to be 2.47-2.86[11] using the SEIR model. Majumder of Boston Children's Hospital β - coronavirus, for example SARS-CoV, is estimated to be 2.2-3.6[13]. The R_0 value of MERS-CoV is estimated to be 2.0-6.7[14]. These designate that SARS-CoV-2 has relatively high transmissibility. Population is mostly liable to SARS-CoV-2, the median age was 47.0 years (IQR, 35.0 to 58.0), 87% case patients were 30 to 79 years of age, and 3% were age 80 years or older, and the number of female patients was 41.9%. [15, 16]. Most cases were diagnosed in Hubei Province, China (75%). 81% cases were classified as mild, 14% cases be located severe, and 5% were critical. The overall case-fatality rate (CFR) was 2.3%, but cases in those aged 70 to 79 years had an 8.0% CFR and cases in those aged 80 years and older had a 14.8% CFR [16]. This suggests that elderly male citizens are more susceptible to this coronavirus as compared with other groups, and this virus is more expected to affect elderly male peoples with chronic underlying diseases (heart disease, diabetes, hypertension etc.)[17]. In summary, COVID-19 is high in frequency and population is generally susceptible to such virus, and COVID-19 hastily spread from a single Wuhan city to the entire country in just 30 days. Consequently that rapid measures should be taken to control the spread of the disease.

3. Transmission of SARS-CoV-2

Previous epidemiological studies have shown that there are three conditions for inclusive spread of virus, that is the

source of infection, route of transmission, and susceptibility [18]. There's is no exception for SARS-CoV-2.

3.1. From the perspective of infectious sources

Bats are measured to be the natural hosts of SARS-CoV-2, whereas pangolins and snakes are supposed to be the intermediate hosts. Studies of Institute Pasteur of Shanghai displayed that bats might be the natural hosts of SARS-CoV-2. Moreover, studies of Peking University [19] propose that SARS-CoV-2 infection is maybe caused by snakes. However, later studies [20] found that no evidence exposed that snakes are the hosts of SARS-CoV-2. Study from wuhan institute of virology presented that the similarity of gene sequence between SARS-CoV-2 and bat coronavirus is as high as 96.2% by sequencing technology [21] This also indirect that bats are the possible basis of SARS-CoV-2. Apart from those, Xu. etal. [22] exposed that the similarity of SARS-CoV-2 isolated since pangolin and the virus strains presently infecting humans is as high as 99% using macrogenomic sequencing, molecular biological detection and electron microscopic analysis. The team similarly observed the distinctive novel coronavirus granules and revealed that pangolin is the potential intermediate host of the SARS-CoV-2. While the results of present research have not yet fully explained the potential natural host and the intermediate host of the SARS-CoV-2, adequate evidence has showed that this virus might be sourced from wild animals. At present, it is considered that the core infectious source of sars-cov-2 is COVID-19 patients in the population. Yet, there is still a dispute about whether SARS-CoV-2 patients in the incubation period are infectious, which needs further study.

3.2. From the perspective of route of transmission

Transmission and close contact are the maximum common behaviors of transmission for SARS-CoV-2. Aerosol transmission capacity also be a way of transmission. In addition, researchers also noticed SARS-CoV-2 in the samples of gastrointestinal tract, stool, saliva and urine. Based on bioinformatics evidence displayed that digestive tract might be a potential route of SARS-CoV-2 infection [23]. Constantly, SARS-CoV-2 RNA was also detected in gastrointestinal tissues as of COVID-19 patients [24]. Additionally, SARS-CoV-2 was detected in the tears and conjunctival secretions of covid-19 patients [25]. Meanwhile, a retrospective study based nine pregnant women with COVID-19 had for the first time designated that the possibility of intrauterine vertical transmission between mothers and infants in the late pregnancy was temporarily excepted [26]. Though, available data on pregnant women infected with SARS-CoV-2 were inadequate, and henceforth additional studies are required to verify the potential vertical transmission of SARS-CoV-2 in pregnant women.

3.3. From the perspective of viral latency

After the epidemiological investigation report, elderly citizens are susceptible groups for SARS-CoV-2, the median age of death was 75 years, and maximum of them had comorbidities or a history of surgery previously admission[27]. Zhong. Etal initiate that, based on clinical features of 1,099 COVID-19 patients, the median incubation period was 3.0 days (range, 0 to 24.0), the median time from the first symptom to death was 14 days [15, 27]. For SARS, the median latency of SARS is 4 days, the average period of first symptoms to hospital admission was 3.8 days, and admission to death was 17.4 days for victims [28], and the

median expectancy of MERS is 7 days [29]. Since the median incubation duration, COVID-19 is shorter than SARS and MERS. Though, the extreme expectancy of SARS-CoV-2 currently noticed is as high as 24 days, which can increase the risk of virus spread. Furthermore, it also form that people 70 years or older had quicker median days (11.5

days) from the first symptom to death than those with ages under 70 years (20 days), representing that elderly people have earlier disease progression than younger people[27]. From the overhead, the public should pay more attention to elderly people who might be additional vulnerable to the SARS-CoV-2.

4. Precautions:(74)



Fig (2)precautions

5. Clinical characteristics of SARS-CoV-2 infection

COVID-19 produces an acute viral infection in humans with median incubation period was 3.0 days [15], which is comparable to the SRAS with an incubation duration ranging from 2–10 days [30]. The presenting features of COVID-19 infection in adults are obvious. The presenting features in adults are pronounced. The furthest common clinical symptoms of SARS-CoV-2 infection were fever (87.9%), cough (67.7%), fatigue (38.1%), while diarrhea (3.7%) and vomiting (5.0%) were erratic [15, 31], which were similar to others coronavirus. Most patients had approximately degree of dyspnoea at presentation, since the time from beginning of symptoms to the growth of acute respiratory distress syndrome (ARDS) was only 9 days amongst the initial patients with COVID-19 infection [1]. Also, severe patients are prone to a variability of complications, including acute respiratory distress syndrome, acute heart injury and secondary infection [17]. There are already some indications that COVID-19 may cause damage to tissues and organs further than the lung. In a study of 214 COVID-19 patients, 78 (36.4%) patients had neurological indicators [32]. In addition, there is already suggestion of ocular surface infection in patients with COVID-19 and SARS-CoV-2 RNA

was distinguished in eye secretions of patient [33].Some COVID-19 patients have arrhythmia, acute heart injury, impaired renal function, and abnormal liver function (50.7%) at admission [1, 34, 35]. An event report of the pathological manifestations of a patient with pneumonia displayed reasonable micro vesicular steatosis in his liver tissue [36]. Besides, tissue samples of stomach, and rectal mucosa, duodenum were inveterate positive for SARS-CoV-2 RNA [37] (Figure 2). In general, the radio graphical features of coronavirus are comparable to those originate in community-acquired pneumonia caused by other organisms [38]. Chest CT scan is important tool to diagnose this pneumonia. Nevertheless, several typical imaging features are frequently detected in COVID-19 pneumonia, together with the major ground glass opacity (65%), consolidations (50%), smooth or irregular interlobular septal thickening (35%), air bronchogram (47%), and thickening of the adjacent pleura (32%), with predominantly peripheral and lower lobe involvement [39]. A recent study reported that most patients (90%) had bilateral chest CT findings and the sensitivity of chest CT to propose COVID-19 was 97% [33]. Combining chest CT imaging features with clinical symptom and laboratory test could facilitate early diagnosis of COVID-

19 pneumonia. Laboratory examination discovered that 82.1% of patients were lymphopenia and 36.2% of patients were thrombocytopenia. Most patients had normal leukocytes, but then leukopenia was observed in 33.7% of patients. In addition, most patients demonstrated raised levels of C-reactive protein (CRP), lactate dehydrogenase (LDH) and creatinine kinase (CK), but minority of patients had elevated transaminase, abnormal myocardial enzyme spectrum, or elevated serum creatinine [1, 15]. As compared with bacterial pneumonia, patients with SARS-CoV-2 showed lower oxygenation index. Cytokine release syndrome is a vital factor that aggravates disease progression. A higher levels of IL-6 and IL-10, and lower levels of CD4+T and CD8+T are detected in COVID-19 patients similar with the cruelty of the disease [40].

6. Diagnosis of SARS-CoV-2

The finding of viral nucleic acid is the standard for noninvasive diagnosis of COVID-19. Though, the present detection of SARS-CoV-2 nucleic acid was high in specificity and low in sensitivity, therefore there might be false negatives and the testing time might be relatively long. The Novel Coronavirus Pneumonia Diagnosis and Treatment Plan (5th trial version) seized "suspected cases with pneumonia imagery features" as per the clinical diagnostic measures in Hubei Province [41]. Then the sixth edition of diagnostic criteria abolishes the distinction among Hubei and other provinces outside Hubei [42]. One reason value is to distinguish the flu as of the COVID-19. Also, Zhang F of MIT developed a test paper for hasty detection of SARS-CoV-2 in one hour by SHERLOCK technology. Even though the clinical verification has not remained carried out so far, this technology, when proved, might be conducive to rapid diagnosis of the disease [43]. A research group of Peking University appealed to have developed a novel technique for hasty creation of transcriptome sequencing library of SHERRY, which is kind for rapid sequencing of SARS-CoV-2 [44].

7. Treatment of SARS-CoV-2

7.1. Antiviral western medicine treatment

On present, the treatments of patients by SARS-CoV-2 infection are mostly symptomatic treatments. Remdesivir was lately stated as an auspicious antiviral drug against a wide display of RNA viruses. Holshue et al. For the first time stated that treatment of a patient with COVID-19 used remdesivir and attained good results [45]. Formerly, Xiao et al. findings make known that remdesivir effectively in the control of 2019-nCoV infection in vitro. For the meantime, similarly found that chloroquine has an immune-modulating activity and might effectively inhibit in this virus in vitro [46]. Clinical controlled trials have revealed that Chloroquine was proved to be effective in the treatment of patients with COVID-19 [47]. Remdesivir is enduring a large number of clinical trials in several hospitals, and the final efficacy of the drug is uncertain. Arbidol, a small indole derivative molecule, was initiate to block viral fusion against influenza A and B viruses and hepatitis C viruses [48] and established to have antiviral effect on SARS-CoV in cell experiment [49], thus that it value be a choice for COVID-19 treatment. The randomized controlled study on treatment of novel coronavirus by Arbidol and Kaletra assumed at present showed that Arbidol had well therapeutic effect than Kaletra did and can significantly diminish the incidence of severe cases. Apart from the overhead, lopinavir/ritonavir,

nucleoside analogues, neuraminidase inhibitors, remdesivir, and peptide EK1 might also be the choices of antiviral drugs for COVID-19 treatment [50].

7.2. Chinese medicine treatment

Chinese medicine also played a significant role in the treatment of SARS-CoV-2 infection. Medical institutions and local governments published a number of traditional Chinese medicine prescriptions. The Novel Coronavirus Pneumonia Diagnosis and Treatment Plan (6th trial version) recommended to use clearing lung and cleansing decoction in the clinical treatment [42]. A combined study completed by Shanghai Institute of Materia Medica and Wuhan Institute of Virology. CAS found that Shuanghuanglian oral liquid can inhibit SARS-CoV-2. Earlier studies have showed that bacilli, chlorogenic acid and forsythin in Shuanghuanglian oral liquid have certain inhibitory effects on a variation of viruses and bacteria [51, 52]. The mechanism capacity be that these components played a therapeutic role by effectually reducing the inflammatory response of the body instigated by viruses and bacteria [53]. Lianhuaqingwen capsule has remained confirmed to have a wide-spectrum effect on a series of influenza viruses, including H7N9, and can regulate the immune response of the virus, reducing the level of inflammatory factors in the initial stage of infection [54].

7.3. Immunoenhancement therapy

Synthetic recombinant interferon α has verified to be actual in treatment of SARS patients in clinic trials [55]. Pulmonary X-ray abnormal diminution time was reduced by 50% in the interferon-treated group related with the glucocorticoid-treated group alone. Interferon was similarly found to be an effective inhibitor of MERS-CoV replication [56]. Those findings suggested that interferon might be used in the treatment of COVID-19. Intravenous immunoglobulin can be the safest immunomodulator for long-term use in entirely ages, and may well help to inhibit the production of proinflammatory cytokines and increase the production of anti-inflammatory mediators [57]. Furthermore, Thymosin alpha-1 (Ta1) can be an immune booster for SARS patients, effectively monitoring the spread of disease [58]. Intravenous immunoglobulin and Ta1 might also be measured as therapeutics for COVID-19.

7.4. Convalescent plasma therapy

When there are no enough vaccines and specific drugs, convalescent plasma therapy can be an effective technique to ease the course of disease for sternly infected patients [59]. In a retrospective analysis, convalescing plasma therapy is more effective than severe doses of hormonal shock in patients with severe SARS, reducing mortality and shortening hospital stays [60]. A prospective unit study by Hung and colleagues exhibited that for patients with pandemic H1N1 influenza virus infection in 2009, the relative risk of death was knowingly lower in patients treated with convalescent plasma [61]. Besides, from the perspective of immunology, maximum of the patients recovered from COVID-19 would produce specific antibodies against the SARS-CoV-2, and their serum might be used to prevent reinfection. At the same time, antibodies can limit the virus reproduction in the acute phase of infection and support clear the virus, which is conducive to the rapid recovery of the disease [62]. Theoretically, viremia peaks during the first week of maximum viral infections, and it must be further effective to give recovery plasma early in the

disease[63]. Hence, the plasma of some patients recovered from COVID-19 might be composed to prepare plasma globulin specific to SARS-CoV-2. Though, the safety of plasma globulin products specific to SARS-CoV-2 deserves more consideration.

7.5. Auxiliary blood purification treatment

At present, extracorporeal blood purification technology in the treatment of unadorned NCP patients[42]. According to the newest studies[34], ACE2, the significant receptor of SARS-CoV-2, is highly expressed in human kidney (nearly 100 times higher than that in lung). Kidney might be key target of attack for novel coronavirus. Initial continuous blood purification treatment possibly will reduce renal workload and aid to indorse the recovery of renal function [64]. Maximum of the severe patients with new coronavirus might suffer from cytokine storm. The unevenness of pro-inflammatory factors and anti-inflammatory factors might cause immune damage. Consequently, blood purification technology meight be used to eliminate inflammatory factors, eliminate cytokine storm, exact electrolyte imbalance, and keep acid-base balance, to control patient’s capacity load in an effective means [65]. In this reason, the patient’s symptoms might be enhanced and the blood oxygen saturation could be increased. In rapid, the drug treatment for COVID-19 mainly comprised four behaviors, i.e., antiviral Western medicine, Chinese medicine, immunoenhancement therapy, and viral specific plasma globulin. Machines could be used as auxiliary therapy. Though, randomized double-blind great sample clinical trial must be obliged as the standard to determine hwther the antiviral drugs could be used in clinical practice.

7.6. Ayurvedic herbs for coronavirus treatment(75)



Fig(3)ayurvedic herbs

In recent positive development, ministry of Ayush, in collaboration with and industrial research (CSIR) has the council of scientific started clinical trials testing formulations of four important ayurvedic herbs in fighting the novel corona virus. the medicines under study include ashwagandha, Guduchi, Yashtimadhu, Peepli and another formulated drug, 'ayush64'.

Ashwagandha

It was observed that one of the compounds present in ashwagandha, called, Withanone(Wi-N) and another natural medicine, New Zealand Propolis are quite effective and useful blocking and weakning the structure of mpro. hence used in the production of covid fighting vaccine, in the right quantity and dosage. it can be helpful indealing and stopping the spread of coronavirus.



Fig (4)Ashwagandha

Considered as a modern superfood, This ayurvedic herb is said to contain magical powers of healing the body of infections and symptoms of cold, cough and viral bugs. while ashwagandha should be consumed regularly to charge the body’s immunity. an immunity power is very essential to avoid corona virus.

Guduchi:



Fig (5)Guduchi

Gauche, or Giloy, also known as the ayurvedic root for immortality has wondrous healing powers. It possesses anti-inflammatory, anti-cancer, antipyretic, antioxidant and immunomodulatory properties. With the high antioxidant preent in the compound, the drug boost your immunity and fight free radicals.

Yashtimadhu:



Fig(6)Yashtimadhu

The sweet herb, also known as mullet or liquor ice has been hailed for its therapeutic benefits, especially for those who are recovering from a cough, cold or flue. It has high anti-inflammatory notes and helps deal with problems related to sore throat, cough or any irritation.

Peepli:



Fig(7)Peepli

Peepli is a traditional medicinal herb which is also known for its strong aromatic notes. A lot of non-traditional studies have also shown that regular usage of this root may be helpful in curbing down the symptoms usually associated with a persistent respiratory infection, bronchitis, cold, cough, asthma, improve blood circulation, strengthen immunity.

Ayush



Fig (8)Ayush

Ayush 64 is another drug under testing for COVID-19 which has been exclusively developed by the Central Ministry by procuring age-old ayurvedic herbs. It has been said that this medicine works as a malaria fighting drug. It is surprising to know that one of the allopathic drug Hydroxychloroquine (HCQ) has also been administered many patients and high risk frontline workers to fight COVID. (75)

8. Prevention of SARS-CoV-2

So far, there are no exact antiviral treatments or vaccines for SARS-CoV-2. And the clinical treatment of COVID-19 has been limited to provision and comforting care till here and now. Thus, it is crucial to develop a safe and stable COVID-19 vaccine. Dr. Tedros, director-general of WHO, said that novel

coronavirus vaccine was anticipated to be complete in 18 months. In addition, SARS-CoV-2 is an RNA virus. RNA virus correlated vaccines, including measles, polio, encephalitis B virus and influenza virus, could be the maximum promising alternatives. And interpersonal transmission of the virus could be disallowed by immunizing health care workers and non-infected population [66]. Prevention of infectious diseases by traditional Chinese medicine has remained noted for a long time in Chinese history, and there have been prior studies on the prevention of SARS by traditional Chinese medicine [67]. The present principles on prevention of COVID-19 are to tonify body energy to protect outside body, dispel wind, dispel heat, and dissipate dampness with aromatic agent. The six most generally used Chinese herbal medicines are liquorice, astragalus, baizhu, fangfeng and honeysuckle. Though, the decoction is not appropriate for long-term use, and the best period is one week only [68]. Studies have shown that vitamin C may avoid the susceptibility of lower respiratory tract infection beneath certain conditions [69], whereas COVID-19 might cause lower respiratory tract infection. Hence, a moderate amount of vitamin C supplementation could be a means to prevent COVID-19. In addition, the decrease in vitamin D and vitamin E levels in cattle could lead to the infection of bovine coronavirus [70]. This recommends that suitable supplementation of vitamin D and vitamin E may augment our resistance to SARS-CoV-2. Patients with primary basic diseases, specifically those with chronic diseases for example diabetes, hypertension, coronary heart disease and tumor, are further susceptible to SARS-CoV-2 and their risk of poor prognosis will increase knowingly after infection, for the reason that they have low systemic immunity as a result of the disease itself and treatments [71]. Thus, it is particularly important to increase self-resistance. The key way to boost personal immunity is to keep personal hygiene, a healthy lifestyle and adequate nutritional intake [72, 73]. For individuals, taking protective measures can effectively avoid SARS-CoV-2 infection, including improving personal hygiene, wearing medical masks, suitable rest and good ventilation [15].

Conclusion:

In conclusion, COVID-19 is a serious infectious disease caused by the novel coronavirus, SARS-CoV-2. Its main initial symptoms, fever, cough and fatigue, are similar to that of SARS. The most likely source of SARS-CoV-2 is bats. This virus is highly infectious and can be transmitted through droplets and close contact. Some patients are life-threatening and such disease has posed a great threat to global health and safety, so to control the spread of the epidemic and reduce the mortality as soon as possible is our burning issue. But by far, the specific mechanism of the virus remains unknown, and no specific drugs for the virus have been developed. At present, it is important to control the source of infection, cut off the transmission route, and use the existing drugs and means to control the progress of the disease proactively. We must also strive to develop specific drugs, promote the research and development of vaccines, and reduce morbidity and mortality of the disease, so as to better protect the safety of people's lives.

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