International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

A Review of Coronavirus Disease- 2019 (COVID- 19)

Pradeep Singh[1], Karishma[2], Devender Singh[3]
[1]*School of Pharmaceutical Science , Lingaya's Vidyapeeth, Faridabad-121001, Haryana*

Submitted: 20-06-2023 Accepted: 29-06-2023

ABSTRACT
A new threat to global public health has emerged with the emergence and spread of the severe acute respiratory syndrome coronavirus (SARS-CoV-2) or 2019 novel coronavirus (2019-nCoV). In December 2019, the infection spread to humans in Wuhan, Hubei, China, through unidentified intermediary creatures. Bats were the source of the infection. There have been around 96,000 uncovered occurrences of Coronavirus disease 2019 (Covid2019) and 3300 nitty gritty passings to date (05/03/2020). The illness is spread through inhalation or contact with tainted beads, and the hatching period lasts from two to fourteen days. Common side effects include fever, hack, sore throat, windedness, exhaustion, and disquietude. The disorder is delicate in a considerable number individuals; It might advance to pneumonia, ARDS, and multiorgan brokenness in certain individuals, commonly the older and those with comorbid conditions. Numerous individuals lack symptoms. Optical, electrochemical, and piezoelectric biosensors, as well as wearable and sophisticated Nano biosensors, immunosensors, aptasensors, and Geno sensors, are among the most widely recognized biosensors for Coronavirus recognition, and we discuss their components, advantages, and disadvantages.
KEYWORDS: Review 2019-nCOV, SARS-CoV-2, COVID-19,

I. INTRODUCTION

At the end of December 2019, the first cases of COVID-19 were found in Wuhan, Hubei Province, China. The pandemic is spreading. Initially referred to as Novel Coronavirus 2019 (2019-nCoV) by the Chinese Center for Disease Control and Prevention (CDC), it was later renamed Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) by the International Committee on Taxonomy of Viruses (ICTV) due to its homology with SARS-CoV (1, 2). The disease brought on by SARS-CoV-2 was later given the new name Coronavirus Disease-2019 (COVID-19) by the World Health Organization (WHO) (3). The most common signs and symptoms of COVID-19, which affects the parenchyma of the lungs, are fever, cough, and shortness of breath. Ongoing examinations have demonstrated the way that it can influence numerous organ frameworks and cause advancement of extra-pneumonic side effects. Patients may suffer from delayed or even incorrect COVID-19 diagnosis as a result of the presence of extra-pulmonary symptoms. As scientists around the world keep on understanding Coronavirus and its suggestions on the human body, information about the different clinical introductions of Coronavirus is central in early diagnosing and treatment to diminish the grimness and mortality brought about by the illness. The 2019 novel Covid (2019-nCoV) or the serious intense respiratory condition Covid 2 (SARS-CoV-2) as it is currently called, is quickly spreading from its starting point in Wuhan City of Hubei Region of China to the remainder of the world [1]. Till 05/03/2020 around 96,000 instances of Covid sickness 2019 (Coronavirus) and 3300 passings have been accounted for [2].

HISTORY

Positive sense RNA infections with an envelope have a breadth of 60 to 140 nm and have spike-like projections on their surface, providing them with the presence of a crown under an electron magnifying instrument. Hence, its name, "Coronavirus" [3]. The four corona viruses HKU1, NL63, 229E, and OC43, all of which typically cause mild respiratory illness, have all been exposed to humans.

Two severe diseases have been brought on by animal betacorona viruses that cross over to humans over the past two decades. In the years 2002–2003, palm civet cats in the Chinese province of Guangdong served as the intermediary host for a new coronavirus that originated in bats and spread to humans. Known as the severe acute respiratory syndrome coronavirus, this virus affected 8122 people, mostly in China and Hong Kong, causing 926 deaths (a mortality rate of 11%)[4]. The Middle East respiratory syndrome coronavirus

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

(MERS-CoV), which was also derived from bats and spread through dromedary camels as an intermediate host, infected 2324 people in 2012, causing 848 deaths (a mortality rate of 32%) [5].

Origin and Spread of CORONA VIRUS[1, 2, 6]

In December 2019, adults in Wuhan, capital city of Hubei locale and a critical transportation focus of China started acquainting with neighborhood clinical centers with outrageous pneumonia of dark explanation. The Huanan discount fish market, which additionally exchanged live creatures, was normal openness for the vast majority of the underlying cases. The surveillance system (set up after the SARS discharge up) was authorized and respiratory instances of patients were transported off reference labs for etiologic assessments. On December 31st 2019, China informed the eruption to the World Prosperity Affiliation and on first January the Huanan Sea base market was closed. The infection was recognized as a Covid on January 7 with >65% similitude to the SARS-CoV and >85% homology to the bat Covid [7]. Natural examples from the Huanan Ocean bottom market additionally tried positive for the infection, demonstrating that it started there. There was a remarkable expansion in the quantity of cases, some of which had not been presented to the live creature market, showing that human-to-human transmission was occurring [8]. On January 11, 2020, the primary lethal case was accounted for. Cases in various regions of China, various countries (Thailand, Japan and South Korea in a steady progression) were represented in people who were returning from Wuhan. Transmission to clinical benefits workers truly zeroing in on patients was depicted on 20th Jan, 2020. By 23rd January, the 12 million people of Wuhan was set under secure with constraints of section and exit from the area. Before long, extra urban areas in the territory of Hubei were remembered for this lockdown. Instances of Coronavirus were accounted for by people who had not recently gone to China, showing that neighborhood human-to-human transmission was occurring in these countries [9]. To distinguish suggestive people getting back from China, air terminals in various countries, including India, introduced screening systems, segregated them, and tried them for Coronavirus. In a little while it was clear that the illness could be imparted from asymptomatic people and moreover prior to start of secondary effects[10]. Accordingly, nations like India that took unique trips to clear their residents from Wuhan or had explorers getting back from China disconnected all suggestive or in any case for 14 days and tried for the infection.

Fig. 1: Timeline of the key events of the CORONA-19 outbreak.

Cases continued to grow emphatically and showing focuses on uncovered a scourge increasing time of 1.8 d [10]. Truly, on the twelfth of February, China changed its importance of certified cases to consolidate patients with negative/impending sub-nuclear tests anyway with clinical, radiologic and epidemiologic features of Covid provoking an extension in cases by 1,000 in a single day [6]. Beginning around 05/03/2020 96,000 cases all over the planet (81,000 in China) and 87 distinct countries and 1 worldwide development (693, in the excursion transport valuable stone Princess visited the coastline of Japan) have been represented [2]. It is crucial for

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

remember that while the quantity of new cases in China has diminished as of late, others, like South Korea, Italy, and Iran, have expanded dramatically. Of those polluted, 22% are in

The main recorded cases were accounted for in December 2019 in Wuhan, China. Throughout the span of the accompanying 10 months, in excess of 30 million cases have been affirmed around the world. 2019 coronavirus disease, COVID-19; ICTV, Global Panel on Scientific categorization of Infections; PHEIC, general wellbeing crisis of worldwide concern; The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) The World Health Organization, or WHO.

Fundamental condition, 23% have recovered, and 3310 (3023 in China and 295 in various countries) have passed on [2]. India, which had definite only 3 cases till 2/3/2020, has in like manner seen a surprising splash in cases. 29 cases had been accounted for as of Walk 3, 2020; by and large, in Delhi, Jaipur and Agra in Italian travelers and their contacts. An Indian got back from Vienna and uncovered numerous schoolchildren at a birthday celebration at a city inn, as per one report. Quarantine has been put on large numbers of these cases' contacts.

These numbers are potentially a misjudge of the tainted and dead because of constraints of reconnaissance and testing. However, the SARS-CoV-2 started from bats, the go-between creature through which it moved over to people is questionable. Pangolins and snakes are the ongoing suspects.

Epidemiology and Pathogenesis [10, 11]

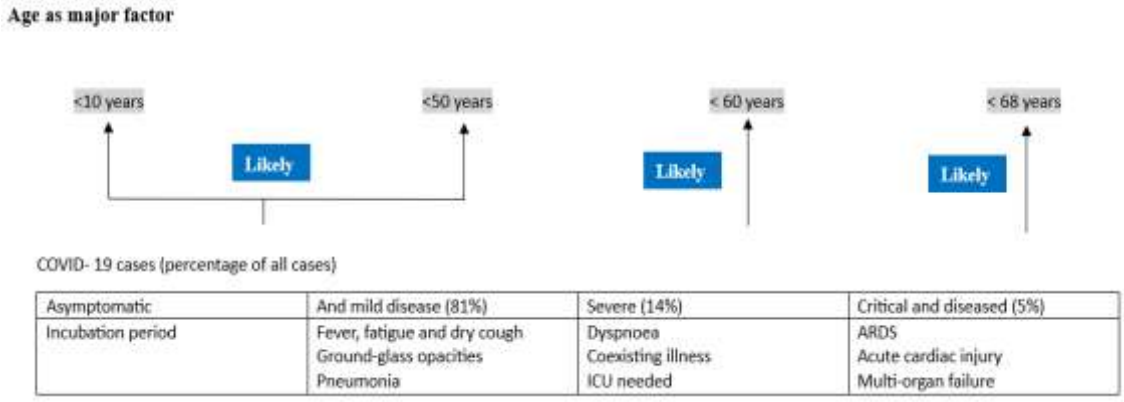
Individuals of any age are in danger. Huge drops created by suggestive patients while hacking and sniffling can spread the contamination [9], however disease can likewise spread from asymptomatic people before side effects show up. Studies have shown that the nasal hole has higher viral burdens than the throat, however there is no distinction in viral burdens between individuals who are suggestive and the people who are not [12]. Indeed, even after clinical recuperation, patients can stay irresistible however long their side effects continue. A few people may be super spreaders; An English public who was in Singapore for a gathering contaminated 11 others while remaining at a hotel in the French Alps and upon his re-visitation of the Unified Realm [6]. These irresistible beads can make a trip up to two meters and choose surfaces. In great environmental circumstances, the infection can stay practical on surfaces for a really long time, however normal sanitizers like hydrogen peroxide, sodium hypochlorite, and others obliterate it in under a moment. [13]. Either by breathing in these drops or by contacting surfaces that have been tainted with them and afterward contacting the nose, mouth, and eyes, contamination can happen. The infection is likewise tracked down in the stool, and it is speculated that pollution of the water supply will bring about the infection's resulting transmission by means of aerosolization or the oral course [6]. There is at present no portrayal of transplacental transmission from pregnant ladies to their embryo [14]. In any case, neonatal contamination on account of post-natal transmission is portrayed [14]. The hatching time goes from 2 to 14 days, with a middle of 5 days. The infection enters the respiratory mucosa through angiotensin receptor 2 (ACE2), as per studies [11].

In an assortment of displaying studies, the fundamental case propagation rate (BCR) is assessed to go from 2 to 6.47 [11]. In evaluation, the BCR of SARS was 2 and 1.3 for pandemic influenza H1N1 2009 [2]

Clinical Features [8, 15–18]

The clinical elements of Coronavirus are differed, going from asymptomatic state to intense respiratory misery disorder and multi organ brokenness. The normal clinical highlights incorporate fever (not altogether), hack, sore throat, cerebral pain, weakness, migraine, myalgia and windedness. Conjunctivitis has additionally been depicted. Hence, they are unclear from other respiratory contaminations. By the end of the first week, the disease can progress to pneumonia, respiratory failure, and death in a subset of patients. This development relates to preposterous climb in searing cytokines including IL2, IL7, IL10, GCSF, IP10, MCP1, MIP1A, and TNFα [15]. In published series, the need for intensive care admission occurred in 25–30% of affected patients. The middle time from the beginning of side effects to dyspnea was 4 days, hospitalization was 6 days, and intense respiratory misery disorder (ARDS) was 7 days. Shock, acute kidney injury, and acute lung injury were among the complications that were observed. Recuperation began in the second or third week. Elderly patients and those with underlying co-morbidities are more likely to experience adverse outcomes and die (50–75% of fatal cases). The median length of stay in the hospital for those who recovered was 10 days.

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781



COVID- 19 cases (percentage of all cases)

Asymptomatic	And mild disease (81%)	Severe (14%)	Critical and diseased (5%)
Incubation period	Fever, fatigue and dry cough Ground-glass opacities Pneumonia	Dyspnoea Coexisting illness ICU needed	ARDS Acute cardiac injury Multi-organ failure

. **Fig. 2: Clinical features of COVID-19.**

Strangely, it has been reported that patients outside of Wuhan have a milder disease than those in Hubei [17]. Similarly, the severity and case fatality rate have been reported to be lower in patients outside of China [6]. This could be because of selection bias, as the cases reported from Wuhan only included severe cases, or because the Asian population is more susceptible to the virus because the respiratory mucosa contains more ACE2 receptors [11].

Sickness in youngsters, babies and kids has been likewise answered to be altogether milder than their grown-up partners. In a progression of 34 youngsters confessed to an emergency clinic in Shenzhen, China between January nineteenth and February seventh, there were 14 guys and 20 females. The infection was associated with a family member in 28 of the children, and 26 of the children had a history of traveling to or residing in China's Hubei province. The median age was 7 years and 10 months. Every one of the patients were either asymptomatic (9%) or had gentle illness. There were no serious or critical cases. Cough and fever (50%) were the most common symptoms. With symptomatic treatment, all patients recovered, and there were no deaths. A child has also been diagnosed with severe pneumonia and multiorgan dysfunction [19]. Furthermore, the gentle neonatal cases that have been accounted for. [20]

Diagnosis [21]

A suspect case is characterized as one with fever, sore throat and hack who has history of movement to China or different areas of relentless nearby transmission or contact with patients with comparable travel history or those with affirmed Coronavirus contamination. At any rate cases may be asymptomatic or even without fever. An affirmed case is a suspect case with a positive sub-atomic test.

Explicit analysis is by unambiguous sub-atomic tests on respiratory examples (throat swab/nasopharyngeal swab/sputum/endotracheal suctions and bronchoalveolar lavage). Stool and, in severe cases, blood can also contain virus. Keep in mind that the COVID-19 is not included in the multiplex PCR panels that are currently available. Additionally, commercial tests are currently unavailable. The fitting example should be shipped off assigned reference labs in India or the Public Foundation of Virology in Pune in a suspect case in India. Commercial tests will become available as the epidemic grows.

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

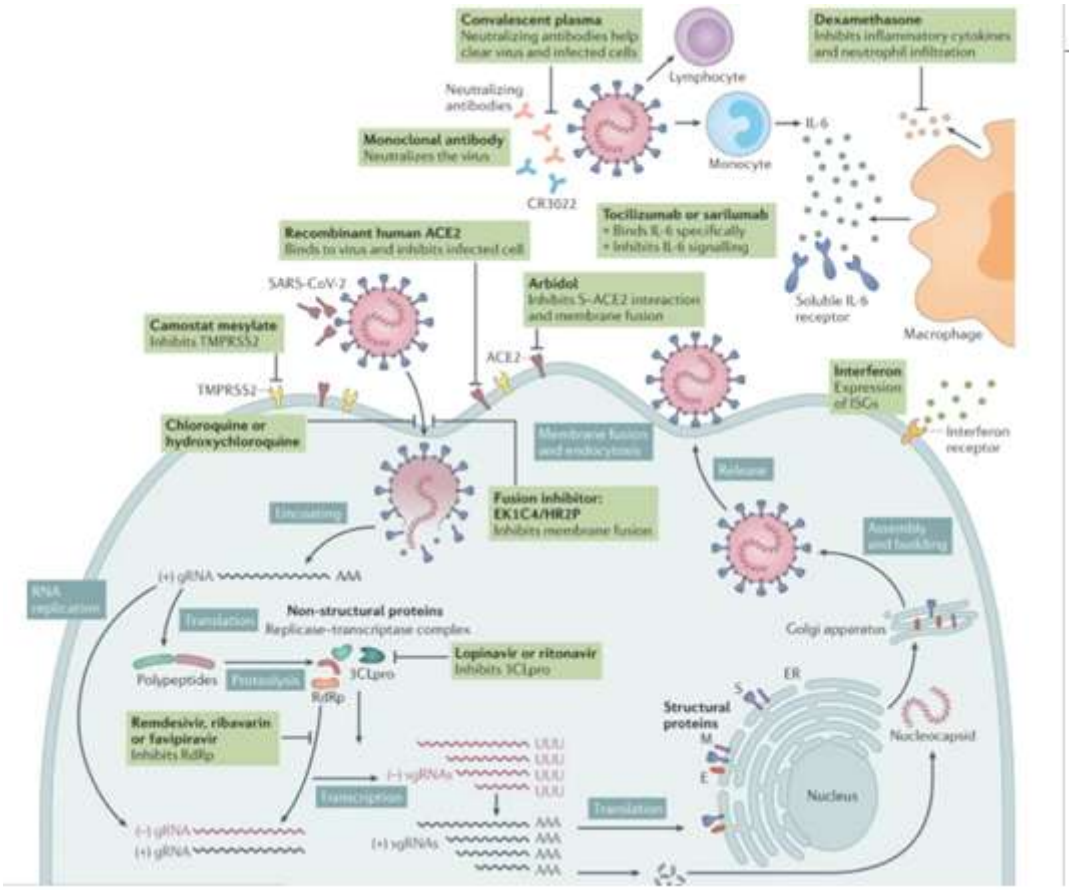


Fig. 3: SARS-CoV-2 replication

The various stages of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) replication, including receptor binding, entry, and fusion, are the targets of potential antivirals. Additionally, immunomodulatory and immunoglobulin-based medications have the potential to treat disease.

Most of the time, other laboratory investigations are not specific. Typically, the white cell count is low or normal. There might be lymphopenia; A lymphocyte count of less than 1000 has been linked to severe illness. The platelet count is commonly standard or fairly low. The CRP and ESR are by and large raised, however procalcitonin levels are generally typical. A co-infection with bacteria could be the cause of a high procalcitonin level. High levels of the ALT/AST, prothrombin time, creatinine, D-dimer, CPK, and LDH are associated with severe disease.

The chest X-beam (CXR) typically shows respective penetrates yet might be ordinary in early sickness. The CT has better specificity and sensitivity. CT imaging for the most part shows invades, ground glass opacities and sub segmental solidification. It is additionally strange in asymptomatic patients/patients with no clinical proof of lower respiratory plot contribution. As a matter of fact, unusual CT examines have been utilized to analyze Coronavirus in suspect cases with negative sub-atomic conclusion; a significant number of these patients had positive sub-atomic tests on recurrent testing [22].

Differential Diagnosis [21]

The differential diagnosis includes all respiratory viral infections, including adenovirus, human metapneumovirus, respiratory syncytial virus (RSV), non-COVID-19 coronavirus, and atypical organisms like mycoplasma and chlamydia. COVID-19 and these infections cannot be distinguished using routine and clinical laboratory tests. Thusly travel history becomes huge. Nonetheless, the movement's history will become unimportant as the plague spreads.

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

Treatment [21, 23]

Most of the treatment is robust and indicative.

In order to prevent transmission to patients, healthcare professionals, and other contacts (more on this later), the first step is to ensure adequate isolation. Delicate sickness should be regulated at home with coordinating about risk signs. Maintaining adequate hydration and nutrition, as well as controlling the fever and hack, are the usual guidelines. In affirmed cases, anti-infection agents and antivirals like oseltamivir ought not be taken consistently. Arrangement of oxygen via nasal prongs, facial covering, a high stream nasal cannula (HFNC), or noninvasive ventilation is demonstrated in hypoxic patients. Mechanical ventilation and additional corporeal membrane oxygen support may be required. Renal replacement therapy may be required in some instances. If co-diseases are suspected or demonstrated, antibiotics and antifungals are required. Corticosteroids have a dubious function; while current worldwide arrangement and WHO advocate against their use, Chinese guidelines genuinely recommend transient treatment with low-to-coordinate part corticosteroids in Covid ARDS [24, 25]. The World Health Organization (WHO) has distributed itemized guidelines for the executives' basic consideration of Coronavirus [26]. There is at present no FDA-endorsed treatment for Coronavirus. Antiviral prescriptions like ribavirin, lopinavir-ritonavir have been used considering the association in SARS and MERS. In a previous control study [15], SARS patients treated with lopinavir-ritonavir and ribavirin had better outcomes than those treated with ribavirin alone.

In the Wuhan case series of 99 Coronavirus tainted hospitalized patients, 76% got oxygen, 13% got harmless ventilation, 4% got mechanical ventilation, 3% got extracorporeal film oxygenation (ECMO), 9% got persistent renal substitution treatment (CRRT), 71% got anti-toxins, 15% got antifungals, 19% got glucocorticoids, and 27% got intravenous immunoglobulin treatment [15]. Antiviral treatment including oseltamivir, ganciclovir and lopinavir-ritonavir was given to 80% of the patients. Painless ventilation lasted from 4 to 22 days (median 9 days), while mechanical ventilation lasted from 3 to 20 days (median 17 days). All of the children in the earlier case series recovered with standard therapy and did not require specialized care [17].

There is roundabout contribution in usage of remdeswir, a wide reach threatening to RNA drug made for Ebola in organization of Covid [27]. Before these medications are recommended, additional evidence is required. Arbidol, an antiviral prescription that is accessible in Russia and China, intravenous immunoglobulin, interferons, chloroquine, and the plasma of patients who have recuperated from Coronavirus are other potential restorative choices [21, 28, 29]. Traditional Chinese herbs are also recommended in the Chinese guidelines [21].

Prevention [21, 30]

Since there are currently no approved treatments, it is essential to prevent this infection. Countermeasures are challenging due to this infection's ambiguous characteristics, including its infectivity before symptoms appear during the laying period, its transmission from asymptomatic individuals, its long hatching period, its preference for mucosal surfaces like the conjunctiva, its prolonged duration, and its persistence even after clinical recovery.

Separation of insisted or thought cases with delicate infection at home is recommended. Sunlight and adequate ventilation are necessary for virus destruction in the home. Patients should be drawn nearer to wear a clear cautious cover and practice hack tidiness. Gatekeepers should be drawn closer to wear a cautious cloak when in a comparable room as getting it and use hand neatness every 15-20 min.

Transmission of Coronavirus to medical services laborers represents the best danger. In the SARS episode of 2002, 21% of those affected were clinical benefits workers [31]. The infection, which has infected nearly 1500 Chinese healthcare workers, has resulted in the deaths of six people. The doctor who had previously warned about the infection has also passed away. It is essential to protect healthcare workers to ensure patient continuity and prevent infection transmission to other patients. Even though COVID-19 is a Category B infectious agent (highly pathogenic H5N1 and SARS) and only transmits as a droplet pathogen, the China National Health Commission still recommends infection control measures for Category A agents (cholera, plague). Patients ought to be accommodated in cohorts or separate rooms. Negative pressure rooms are rarely necessary. Typically, the equipment, surfaces, and rooms should be disinfected using sodium hypochlorite. Healthcare professionals should have access to fit-tested N95 respirators, protective suits, and goggles. During spray-producing procedures like

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

intubation, pull, and tracheostomies, safety precautions should be taken to prevent airborne transmission. All contacts including clinical benefits workers should be noticed for development of symptoms of Covid. When a patient is afebrile for at least three dimensions and has two continuous negative subatomic tests at a one-day inspection span, they can be released from confinement. Patients affected by the pandemic flu were instructed to resume work and school once they had recovered for at least 24 hours, or by day 7. Negative molecular tests were not required for release.

People ought to be asked to avoid crowded areas and postpone non-essential travel to communities where the disease is still spreading. They should be asked to practice hack hygiene by hacking with a tissue or sleeve rather than their hands, and they should also practice hand hygiene as frequently as possible every 15-20 minutes. Veils should be used with caution on patients who have respiratory side effects. Because it has not been demonstrated to protect against respiratory viral infections, the World Health Organization (WHO) does not recommend that healthy individuals wear masks in public. However, massive gatherings (such as amusement parks) are against the law in China, and people have been asked to cover their faces when they are in crowded areas. China is furthermore considering familiarizing guideline with limit selling and trading of wild animals [32].

The response on a global scale has been significant. At first, there were a lot of restrictions on traveling to China. People who return from China or are cleared to leave China are checked for clinical side effects, kept in isolation, and tested for the Coronavirus for two weeks. whether or not asymptomatic. In any case, these movement limitations have now been reached out to different countries because of the infection's quick worldwide spread. It is unknown whether these efforts will result in a reduction in viral spread.
A vaccine is being considered.

Practice Points from an Indian Perspective

- India has an extremely low Covid risk at the hour of composing this article. However, in the coming weeks, this may change. Thusly coming up next is recommended:
- All patients with respiratory side effects ought to have their movement accounts taken, remembering any global travel for the beyond about fourteen days and contact with wiped out explorers.
- In the short-term office, they ought to set up a framework to focus on patients with respiratory sicknesses and furnish them with a clear careful cover to wear. They should regularly practice hand hygiene and wear careful veils when examining such patients.
- For testing and disengagement, thought cases ought to be alluded to government-assigned focuses (Kasturba Clinic in Mumbai as of now). There are no available commercial testing kits in India.
- While their travel history is examined, patients admitted with severe pneumonia and acute respiratory distress syndrome should be placed in contact and droplet isolation. Decontamination of surfaces should be performed frequently. The samples should be tested for SARS-CoV-2 if no pathogen is found, and multiplex PCR panels should be used if logistic permit.
- All clinicians should keep themselves revived about late enhancements including overall spread of the infection.
- At this time, it is best not to go abroad for reasons other than necessity.
- People should stop spreading rumors and false information about the infection and make an effort to calm society's frenzy and tension.

II. CONCLUSION

China's and some of its neighbors' financial, medical, and overall health frameworks have been put to the test by this new infection flare-up. The infection's effects on our lives in India will only become clear over time. Consequently, zoonotic beginning microorganisms and subsequent infections are likely to continue. Therefore, in addition to controlling this outbreak, comprehensive measures should be developed to prevent future outbreaks of zoonotic disease.

REFERENCES

[1]. Wang Chen, Horby Peter W, Hayden Frederick G, Gao George F. A novel coronavirus outbreak of global health concern. TheLancet. 2020;395(10223):470–473. doi: 10.1016/S0140-6736(20)30185-9. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[2]. Coronavirus Outbreak. Available at: https://www.worldometers.info/coronavirus/. Accessed 23 Feb 2020.
[3]. Richman DD, Whitley RJ, Hayden FG. Clinical Virology, 4th ed. Washington: ASM Press; 2016.
[4]. Chan-Yeung M, Xu RH. SARS: epidemiology. Respirology. 2003;8:S9–14. doi: 10.1046/j.1440-1843.2003.00518.x. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
[5]. Middle East Respiratory Syndrome Coronavirus. Available at: https://www.who.int/emergencies/mers-cov/en/. Accessed 16 Feb 2020.
[6]. World Health Organization. Situation reports. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/. Accessed 22 Feb 2020.
[7]. Xinhua. China's CDC detects a large number of new coronaviruses in the South China seafood market in Wuhan. Available at: https://www.xinhuanet.com/2020-01/27/c_1125504355.htm. Accessed 20 Feb 2020.
[8]. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, Fan G, Xu J, Gu X, Cheng Z, Yu T, Xia J, Wei Y, Wu W, Xie X, Yin W, Li H, Liu M, Xiao Y, Gao H, Guo L, Xie J, Wang G, Jiang R, Gao Z, Jin Q, Wang J, Cao B. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;395:497–506. doi: 10.1016/S0140-6736(20)30183-5. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
[9]. Rothe Camilla, SchunkMirjam, Sothmann Peter, Bretzel Gisela, FroeschlGuenter, Wallrauch Claudia, Zimmer Thorbjörn, Thiel Verena, Janke Christian, Guggemos Wolfgang, Seilmaier Michael, Drosten Christian, Vollmar Patrick, ZwirglmaierKatrin, Zange Sabine, Wölfel Roman, Hoelscher Michael. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. New England Journal of Medicine. 2020;382(10):970–971. doi: 10.1056/NEJMc2001468. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
[10]. Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. N Engl J Med. 2020. 10.1056/NEJMoa2001316. [PMC free article] [PubMed]
[11]. Cheng ZJ, Shan J. 2019 novel coronavirus: where we are and what we know. Infection. 2020:1–9. 10.1007/s15010-020-01401-y. [PMC free article] [PubMed]
[12]. Zou L, Ruan F, Huang M, et al. SARS-CoV-2 viral load in upper respiratory specimens of infected patients. N Engl J Med. 2020. 10.1056/NEJMc2001737. [PMC free article] [PubMed]
[13]. Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents. J Hosp Infect. 2020 Feb 6. pii: S0195–6701(20)30046–3. [PMC free article] [PubMed]
[14]. Chen Huijun, GuoJuanjuan, Wang Chen, Luo Fan, Yu Xuechen, Zhang Wei, Li Jiafu, Zhao Dongchi, Xu Dan, Gong Qing, Liao Jing, Yang Huixia, Hou Wei, Zhang Yuanzhen. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. The Lancet. 2020;395(10226):809–815. doi: 10.1016/S0140-6736(20)30360-3. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
[15]. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, Qiu Y, Wang J, Liu Y, Wei Y, Xia J, Yu T, Zhang X, Zhang L. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. Lancet. 2020;395:507–513. doi: 10.1016/S0140-6736(20)30211-7. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
[16]. Wang Dawei, Hu Bo, Hu Chang, Zhu Fangfang, Liu Xing, Zhang Jing, Wang Binbin, Xiang Hui, Cheng Zhenshun, Xiong Yong, Zhao Yan, Li Yirong, Wang Xinghuan, Peng Zhiyong. Clinical

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 3 May-June 2023, pp: 3199-3208 www.ijprajournal.com ISSN: 2249-7781

Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China. JAMA. 2020;323(11):1061. doi: 10.1001/jama.2020.1585. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[17]. Xu XW, Wu XX, Jiang XG, et al. Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARS-Cov-2) outside of Wuhan, China: retrospective case series. BMJ. 2020;368:m606. doi: 10.1136/bmj.m606. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[18]. Wang XF, Yuan J, Zheng YJ, et al. Clinical and epidemiological characteristics of 34 children with 2019 novel coronavirus infection in Shenzhen. [Article in Chinese]. ZhonghuaErKeZaZhi. 2020;58:E008. [PubMed]

[19]. Chen F, Liu ZS, Zhang FR, et al. First case of severe childhood novel coronavirus pneumonia in China. ZhonghuaErKeZaZhi. 2020;58:E005. [PubMed] [Google Scholar]

[20]. Zeng LK, Tao XW, Yuan WH, Wang J, Liu X, Liu ZS. First case of neonate infected with novel coronavirus pneumonia in China. ZhonghuaErKeZaZhi. 2020;58:E009. [PubMed] [Google Scholar]

[21]. Jin YH, Cai L, Cheng ZS, et al. A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus [2019-nCoV] infected pneumonia [standard version] Mil Med Res. 2020;7:4. doi: 10.1186/s40779-020-0233-6. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[22]. Huang Peikai, Liu Tianzhu, Huang Lesheng, Liu Hailong, Lei Ming, Xu Wangdong, Hu Xiaolu, Chen Jun, Liu Bo. Use of Chest CT in Combination with Negative RT-PCR Assay for the 2019 Novel Coronavirus but High Clinical Suspicion. Radiology. 2020;295(1):22–23. doi: 10.1148/radiol.2020200330. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[23]. Chen Z-M, Fu J-F, Shu Q, et al. Diagnosis and treatment recommendations for pediatric respiratory infection caused by the 2019 novel coronavirus. World J Pediatr. 2020:1–7. 10.1007/s12519-020-00345-5.

[24]. Russell CD, Millar JE, Baillie JK. Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury. Lancet. 2020;395:473–475. doi: 10.1016/S0140-6736(20)30317-2. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[25]. Zhao JP, Hu Y, Du RH, et al. Expert consensus on the use of corticosteroid in patients with 2019-nCoV pneumonia. ZhonghuaJie He He Hu Xi ZaZhi. 2020;43:E007. [PubMed] [Google Scholar]

[26]. WHO. Clinical management of severe acute respiratory infection when novel coronavirus [nCoV] infection is suspected. Available at: https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novelcoronavirus-[ncov]-infection-is-suspected. Accessed 9 Feb 2020.

[27]. Holshue Michelle L., DeBolt Chas, Lindquist Scott, Lofy Kathy H., Wiesman John, Bruce Hollianne, Spitters Christopher, Ericson Keith, Wilkerson Sara, Tural Ahmet, Diaz George, Cohn Amanda, Fox LeAnne, Patel Anita, Gerber Susan I., Kim Lindsay, Tong Suxiang, Lu Xiaoyan, Lindstrom Steve, Pallansch Mark A., Weldon William C., Biggs Holly M., Uyeki Timothy M., Pillai Satish K. First Case of 2019 Novel Coronavirus in the United States. New England Journal of Medicine. 2020;382(10):929–936. doi: 10.1056/NEJMoa2001191. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[28]. Zhang Lei, Liu Yunhui. Potential interventions for novel coronavirus in China: A systematic review. Journal of Medical Virology. 2020;92(5):479–490. doi: 10.1002/jmv.25707. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[29]. Multicenter Collaboration Group of Department of Science and Technology of Guangdong Province and Health Commission of Guangdong Province for Chloroquine in the Treatment of Novel

Coronavirus Pneumonia. [Expert consensus on chloroquine phosphate for the treatment of novel coronavirus pneumonia]. [Article in Chinese] ZhonghuaJie He He Hu Xi ZaZhi. 2020;43:E019. [PubMed]

[30]. World Health Organization. Coronavirus disease [COVID-19] Technical Guidance: Infection Prevention and Control. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control. Accessed 20 Feb 2020.

[31]. Chang De, Xu Huiwen, Rebaza Andre, Sharma Lokesh, Dela Cruz Charles S. Protecting health-care workers from subclinical coronavirus infection. The Lancet Respiratory Medicine. 2020;8(3):e13. doi: 10.1016/S2213-2600(20)30066-7. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[32]. Li Jie, Li Jun (Justin), XieXiaoru, CaiXiaomei, Huang Jian, Tian Xuemei, Zhu Hong. Game consumption and the 2019 novel coronavirus. The Lancet Infectious Diseases. 2020;20(3):275–276. doi: 10.1016/S1473-3099(20)30063-3. [PMC free article] [PubMed] [CrossRef] [Google Scholar]