Print ISSN: 2958-3675 | Online ISSN: 2958-3683
International Journal of Medical and Pharmaceutical Research
Available Online at https://ijmpr.in/
ORCiD ID: 0000-0002-3849-6959
Volume 4, Issue 1; (2023); Page No. 106-110
Original Article
Open Access

Covid -19: Pandemic Era: A Review

Reena Singh[*1], Jyoti Nayak[1], Jai Narayan Mishra[1]
[1]Faculty of Pharmacy, Kailash Institute of Pharmacy and Management, GIDA, Gorakhpur, UP, India-273209

ABSTRACT
In December 2019, epidemic of Covid -19 spread all over the world wide. Covid 19 caused by SARS-COV, happen from Wuhan city (china).WHO declare covid -19 is pandemic. Covid -19 spread flat-out over world-wide.in this paper discuss about how to cure from covid or minimize the speed of spreading of covid 19, covid 19 shows verity of symptoms varies from person to person. Diagnosis is by demonstration of the virus in respiratory secretions by special molecular tests. Common laboratory findings include normal/ low white cell counts with elevated C-reactive protein (CRP). The computerized tomographic chest scan is usually abnormal even in those with no symptoms or mild disease. Treatment is essentially supportive; role of antiviral agents is yet to be established. Prevention entails home isolation of suspected cases and those with mild illnesses and strict infection control measures at hospitals that include contact and droplet precautions. The virus spreads faster than its two ancestors the SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV), but has lower fatality. The global impact of this new epidemic is yet uncertain.

Keywords: *Covid -19, SARS-COV, MERS, C-reactive protein*

***Corresponding Author**
Reena Singh
Faculty of Pharmacy, Kailash Institute of Pharmacy and Management, GIDA, Gorakhpur, UP, India-273209

INTRODUCTION

In March 2020, the epidemic of the corona virus disease 2019 (COVID-19) captured all countries of the globe [1]. To reduce the speed of its spread, many countries slowed down their economies and enforced lockdown. WHO declared COVID-19 is a Public Health Emergency of International Concern[2]. A novel corona virus, designated as 2019-nCoV, emerged in Wuhan, China, at the end of 2019[3]. Ministry of Health & Family Welfare, government of India, has thus issued and updated guidelines for home isolation from time to time to clarify selection criteria, precautions that need to be followed by such patients and their families, signs that require monitoring and prompt reporting to health facilities[4]. A virus is small congregation of genetic code; it may be DNA or RNA, which is surrounded by protein layer. The official name of virus that cause the disease, i.e. corona disease (Covid 19), severe acute respiratory corona virus 2 (SARS-COV-2).Post COVID-19 condition occurs in individuals with a history of apparent or confirmed SARS CoV-2 infection, usually 3 months from the onset of COVID-19 with varies symptoms and that last for at least 2 months and cannot be explained by an alternative diagnosis. Common symptoms include fatigue, shortness of breath, lack of taste and smell, but also others and generally have an impact on everyday functioning[1]. Globally, as of 6:10pm CEST, 29 March 2022, there have been 481,756,671 confirmed cases of COVID-19, including 6,127,981 deaths, reported to WHO. As of 26 March 2022, a total of 11,054,362,790 vaccine doses have been admitted[5]. In India, from3January 2020 to29 march 2022, there has been 43,021,982 confirmed cases of covid-19 with 521,070 deaths, reported to WHO. As of 21 march 2022, A total of 1,818,558,263 vaccine doses have been an admitted[5].

Table 1

S	Globally	Cases(481,756,671))	deaths (6,127,981)
1.	Europe	199,889,200	1,934,276
2.	Americas	150,432,900	2,695,351

3.	South-East Asia	57,030,527	778,313
4.	Eastern Mediterranean	21,559,109	340,274
5.	Africa	8,567,298	171,006
6.	India	43,021,982	521,070

Virology

Corona virus belongs to the *Coronaviridae*family, *Nidovirales*order. Corona viruses are separated into four generation as follows: α-, β-, γ-, and δ-corona virus.

α- and β- Corona virus only infect mammals, but γ- and δ- corona virus mostly infects birds[6]. COVID-19 and SARS-CoV belong to the same beta corona virus subgroup, similarity at genome level is only 70%, and the novel group has been found to show genetic differences from SARS-CoV[3].

Life –cycle of covid-19

Corona virus life cycle Steps
1. Attachment and entry
2. Clone protein expression
3. Replication and transcription
4. Aggregation and release.

Transmission

Corona viruses can spread in the following ways: Coughing and sneezing without covering the mouth can disperse droplets into the air. Touching or shaking hands with a person who has infected can pass the virus between individuals. Making contact with a surface that has the virus and then touching the nose, eyes, or mouth. Some animal corona viruses, such as feline corona virus (FCoV), may spread through contact with feces.

Symptoms

Flu-like symptoms usually set of 2–4 days after a corona virus infection and are typically mild[3]. But a symptom varies from person to person.Most of the patients suffer from Fever, Chill or rigors, Cough, Runningnose, Sorethroat, Shortness of breath, Diarrhea, Headache, Dizziness. Clinically assigned mild cases are patients with upper respiratory tract symptoms with or without fever, without shortness of breath and having oxygen saturation at room air of more than 93 %.(8).virus has an incubation time of 2–14 days.

Diagnosis(Sample collection)

Preferred sample: Throat and nasal swab in viral transport media (VTM).

Alternate sample: Nasopharyngeal swab, BAL or endotracheal aspirate which has mixed with transport medium and transported in cold chain[7].

General guideline

- Use appropriate PPE for specimen collection (droplet, airborne and contact precautions for URT specimens; airborne precautions using full PPE for LRT specimens). Maintain proper infection control when collecting specimens.
- Restricted entry to visitors or attendants during sample collection.
- Complete the requisition form for each specimen submitted.
- Proper disposal of all waste generated[7].

Real time reverse transcription–polymerase chain reaction (real time RT–PCR) detect covid. Real time RT–PCR is a nuclear-derived method for detecting the presence of specific genetic material in any pathogen, including a virus. Originally, the method used radioactive isotope markers to detect targeted genetic materials, but subsequent refining has led to the replacement of isotopic labeling with special markers, most frequently fluorescent dyes.

Detect the severe acute respiratory syndrome–associated corona virus (SARS-CoV). (9)Pneumonia. A variant of the real-time format, based on TaqMan probe hydrolysis technology (Applied Biosystems, Foster City, CA), has been shown to provide sensitive, specific, and quantifiable results in viral diagnostic assays[8].

Prevention

a) Use mask

- The caregiver should wear a triple layer medical mask. N95 mask may be considered when in the same room with the ill person.
- Front portion of the mask should not be touched or handled during use.
- He/she should avoid touching own face, nose or mouth. Perform hand hygiene after disposal of the mask.
- Mask should be discarded after cutting them to pieces and putting in a paper bag for a minimum of 72 hours.
- If the mask gets wet or dirty with secretions, it must be changed immediately[4].

b) Hand hygiene

- Hand hygiene must be ensured following contact with ill person or his immediate environment.
- Use soap and water for hand washing at least for 40 seconds. Alcohol-based hand rub can be used, if hands are not visibly soiled. Perform hand hygiene before and after removing gloves.
- After using soap and water, use of disposable paper towels to dry hands is desirable. If not available, use dedicated clean cloth towels and replace them when they become wet.
- Perform hand hygiene before and after removing gloves[4].

c) Exposure to patient/ patient's environment

- Avoid direct contact with body -fluids (respiratory, oral secretions including saliva) of the patient. Use disposable gloves while handling the patient.
- Avoid exposure to potentially contaminated items in his immediate environment (e.g. avoid sharing eating utensils, dishes, drinks, used towels or bed linen).
- Food must be provided to the patient in his room. Utensils and dishes used by the patient should be cleaned with soap/detergent and water while wearing gloves. The utensils may be re-used after proper cleaning.
- Clean hands after taking off gloves or handling used items. Use triple layer medical mask and disposable gloves while cleaning or handling surfaces, clothing or linen used by the patient.
- Perform hand hygiene before and after removing gloves[4].

Treatment

- In vitro, interferons (IFNs) are only partially effective against corona viruses. IFNs in combination with ribavirin may have increased activity in vitro when compared to IFNs alone against some corona viruses; however, the effectiveness of this combination in vivo requires further evaluation[3]. Interferon (IFN)-α can decrease viral load during the early stage of
- COVID-19 disease, and it can help to improve disease manifestationsand curtail the course of infection.
    - IFN-α nebulization: 200.000–400.000 IU/kg or 2–4 μg/kg in2 ml of sterile water, two times per day for 5–7 days;
    - IFN-α2b inhalation (puff): administered for high-risk individualswith close contact with supposed SARS-CoV-2 infected casesor those in the early phase with only upper airway manifestations. Cases should administer 1–2 puffs into the nasal cavitybilaterally, 8–10 puffs on the oropharynx, and the dose of IFN-α2b for every application is 8.000 IU, per 1–2 hours, 8–10puffs/day for 5–7 days [9,10,11].
- Hyper-inflammation, which happened by a cytokine storm thatarises from an exaggerated immune response to the presence ofthe SARS-CoV-2, is considered to characterize one of the most importantnegative prognostic markers in COVID-19 disease.
- Antibiotics and/or antifungals are required if co-infections, such as Mycoplasma and Chlamydia, are suspected or proven. Prolonged macrolide therapy, as a modulator of immune function, is being evaluated [10].
- Anti-parasitic medication Ivermectin was demonstrated to inhibitthe replication of SARS-CoV-2 in vitro. Ivermectin was previouslyfound to have broad- spectrum anti-viral activity in vitro, an inhibitorof the pathogen virus (SARS-CoV-2), in Vero-hSLAM cells2 hours after SARS-CoV-2 infection. It was capable of reducing~5000-fold in viral ribonucleic acid replication at 48 hours.
- Ivermectinseems to require further research on possible benefits inCOVID-19 disease[12].
- Majority of cases of COVID-19 are either asymptomatic or have very mild symptoms[4]. COVID-19 is a self-limiting disease in more than 80% of patients. Severe pneumonia occurred in about 15% of cases as revealed in studies with large cohorts of patients[6].

Treatment for patients with mild/ asymptomatic disease in home isolation

When to seek medical attention Patient/ Care giver will keep monitoring their health. Immediate medical attention must be sought if serious signs or symptoms develop. These could include: i. Unresolved High-grade fever (more than 100° F for

more than 3 days). ii. Difficulty in breathing. iii. Dip in oxygen saturation (SpO2 ≤ 93% on room air at least 3 readings within 1 hour) or respiratory rate > 24/min. iv. Persistent pain/pressure in the chest. v. Mental confusion or inability to arouse. vi. Severe fatigue and myalgia.

Treatment for patients with mild/ asymptomatic disease in home isolation

- Patients must be in communication with a treating Medical Officer and promptly report in case of any deterioration.
- The patient must continue the medications for other co-morbidities/ illness after consulting the treating Medical Officer.
- Patient may utilize the tele-consultation platform made available by the district/state administration including the e-Sanjeevani tele-consultation platform available at *https://esanjeevaniopd.in/*.
- Patients to follow symptomatic management for fever, running nose and cough, as warranted.
- Patients may perform warm water gargles or take steam inhalation thrice a day.
- If fever is not controlled with a maximum dose of Tab. Paracetamol 650 mg four times a day, consult the treating doctor.
- Information floating through social media mentioning non-authentic and non-evidence-based treatment protocols can harm patients. Misinformation leading to creation of panic and in-turn undertaking tests and treatment which are not required has to be avoided.
- Clinical management protocol for asymptomatic/mild patients as available on the website of Ministry of Health & Family Welfare (https://www.icmr.gov.in/pdf/covid/techdoc/COVID_Management _Algorithm_23092021.pdf) may be referred to by the treating Medical Officer to aid management of the case.
- Do not rush for self-medication, blood investigation or radiological imaging like chest X ray or chest CT scan without consultation of your treating Medical Officer.
- Steroids are not indicated in mild disease and shall not be self-administered. Overuse & inappropriate use of steroids may lead to additional complications.
- Treatment for every patient needs to be monitored individually as per the specie condition of the patient concerned and hence generic sharing of prescriptions shall be avoided.
- In case of falling oxygen saturation or shortness of breath, the person may require hospital admission and shall seek immediate consultation of their treating Medical Officer/surveillance team/Control room[4].

When to seek medical attention

Patient/ Care giver will keep monitoring their health. Immediate medicalattention must be sought if serious signs or symptoms develop. These couldinclude:

- Unresolved High-grade fever (more than 100° F for more than 3 days).
- Difficulty in breathing.
- Dip in oxygen saturation (SpO2 ≤ 93% on room air at least 3 readingswithin 1 hour) or respiratory rate > 24/min.
- Persistent pain/pressure in the chest.
- Mental confusion or inability to arouse.
- Severe fatigue and myalgia.

CONCLUSION

This study presented abroad study of the covid 19 epidemic situation in India as well as in global. Cases of covid 19 rising very aggressive in manner. In this study discuss about growth trends of infection, the severity of disease in human. These studies provide the knowledge about symptoms and primary precaution from covid 19. Scientists first identified a human corona virus in 1965. It caused a common cold, but novel covid 19 shows variety of symptoms.

REFERENCES

1. A clinical case definition of post COVID-19 condition by a Delphi consensus, 6 October 2021(WHO).
2. Coronavirus disease (COVID-19) Situation Report – 189 Data as received by WHO from national authorities by 10:00 CEST, 27 July 2020 (WHO).
3. A Review On Corona Virus (COVID-19) Shrikrushna Subhash Unhale, Quazi Bilal Ansar, Shubham Sanap , Suraj Thakhre, Shreya Wadatkar, Rohit Bairagi, Prof. Suraj Sagrule and Prof. Dr. K. R. Biyani Anuradha College of Pharmacy, Chikhli, Dist –Buldana (MS) India 443201.
4. Yuen, K. S., Ye, Z. W., Fung, S. Y., Chan, C. P., & Jin, D. Y. (2020). SARS-CoV-2 and COVID-19: The most important research questions. *Cell & bioscience*, *10*(1), 1-5.

5. https://extranet.who.int/publicemergency(WHO dashboard).
6. YiyunShou, Michael Smithson, Nicolas Cherbuin, Michelle Banfield, Alison L. Calear, Louise M. Farrer, Darren Gray, Amelia Gulliver, TambriHousen, Sonia M. McCallum, Alyssa R. Morse, Kristen Murray, Eryn Newman, Rachael M. Rodney Harris and Philip J. Batterham Research School of Psychology, The Australian National University, Canberra, ACT, Australia ,Centre for Research on Ageing, Health and Wellbeing, Research School of Population Health, The Australian National University, Canberra, ACT, Australia ,Centre for Mental Health Research.
7. Caly, L., Druce, J. D., Catton, M. G., Jans, D. A., & Wagstaff, K. M. (2020). The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 in vitro. *Antiviral research*, *178*, 104787.
8. Emery, S. L., Erdman, D. D., Bowen, M. D., Newton, B. R., Winchell, J. M., Meyer, R. F., ... & Anderson, L. J. (2004). Real-time reverse transcription–polymerase chain reaction assay for SARS-associated coronavirus. *Emerging infectious diseases*, *10*(2), 311.
9. Shen K, Yang Y, Wang T, Zhao D, Jiang Y, Jin R, et al(2020). Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement. World J Pediatr.
10. Drexler, J.F., Gloza-Rausch, F., Glende, J., Corman, V.M., Muth,D., Goettsche, M., Seebens, A., Niedrig, M., Pfefferle, S., Yor-danov, S., Zhelyazkov, L., Hermanns, U., Vallo, P., Lukashev, A.,Muller, M.A., Deng, H., Herrler, G., Drosten, C., Genomic characterization of severe acute respiratory syndrome-related coronavirus in European bats and classification of coronaviruses based on partial RNA-dependent RNA polymerase gene sequences. J. Virol, 2010; 84: 11336–11349.
11. Dong X, Cao YY, Lu XX, Zhang JJ, Du H, Yan YQ, et al. Eleven Faces of Coronavirus Disease 2019. Allergy. 2020 Mar 20.
12. Wang BX, Fish EN. Global virus outbreaks: interferons as 1st responders. Semin Immunol 2019; 43: 101300.