

Review: A Novel Coronavirus

Ganesh Kumar Jhunjunwala¹, Rakesh Kumar Jha² and Dhruva Hari Chandi³

¹First year MBBS, Datta Meghe Medical College, Nagpur Maharashtra, India

²Department of Biochemistry Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre Nagpur, India

³Department of Microbiology Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe), Wardha, India

Corresponding author email: jhaarakesh1993@gmail.com

ABSTRACT

It's about year 2019 during the month of November & December corona virus, Severe Acute respiratory syndrome has been reported as transmitting agent for viral infection pneumonia. It out-breaks in city of China, now commonly known as corona virus or (COVID19). The basic knowledge collected about the lethal, pandemic human coronavirus SARS Corona virus (COVID19) is discussed in this article, with a focus on its zoonosis, resistance, and various therapeutic development strategies.

KEY WORDS: THERAPEUTICS, SARS, MERS, FDA, ORF & COVID-19.

INTRODUCTION

Initially covid-19 commonly known as severe acute respiratory syndrome SARS first occurred in Wuhan city in China in the year 2003-04, and it has since spread to 29 countries, infecting over 9000 people and resulting in a 10% fatality rate. Five other different types of homosapien coronaviruses i.e. human affecting covid19 viruses were soon discovered. Which caused variety of respiratory disorders in humans mainly including pneumonia as well as bronchiolitis Different virus were soon discovered such as in Middle East corona virus named Middle East Respiratory Syndrome coronavirus have been discovered in a patient who was from Saudi Arabia with pneumonia in the year 2012 (Shan F, et al 2020).

It was at this time that there has been discovered a more dangerous acute respiratory syndrome disorder associated corona virus that produces COVID19 pandemic that has

become one of major worry for human health. Because the disease is very infectious and lethal, it has made human lifestyle worsen mainly social, economic and day today lifestyle of human beings (Several reviews have been conducted by the CDC, WHO, NIH, and others.) (Sharma A et al.,).

SARS CoV2, in fact, was discovered on December 26th, 2019 in Wuhan city of China, and it has worsened the lifestyle of people by causing serious dangerous life endangered pneumonia, which is worst pathogenic cause of corona virus covid19 now days. Since disease progression and fatality rates are increasing at an exponential rate, no statistical data would be perfect at this time. According to CNN, as of April 4th, 2020, there are approximately 1,192,028 infected cases worldwide, with 64,316 deaths. In the United States, there are 308,533 infected cases and 8,376 deaths. In this study, we describe what we now know about pathogenic coronavirus COVID19 and its deadly infection, with a focus on its impact on human life all over the world (Rakesh Kumar Jha et al., 2020).

Coronavirus & Zoonosis Trasmision Sources: Severe Acute respiratory syndrome or Coronavirus like Middle East Respiratory Syndrome Coronavirus is a bat borne virus Severe Acute respiratory syndrome or corona virus

Biosc Biotech Res Comm P-ISSN: 0974-6455 E-ISSN: 2321-4007



Identifiers and Pagination

Year: 2021 Vol: 14 No (7 Special Issue

Pages: 05-08

This is an open access article under Creative

Commons License Attribn 4.0 Intl (CC-BY).

DOI: <http://dx.doi.org/10.21786/bbrc/14.7.2>

Article Information

Received: 14th April 2021

Accepted after revision: 06th June 2021

like the flu virus, can infect the respiratory system, making it easier to easily get transmitted to other persons through different modes of pathogen transfer such as coughing, sneezing and also through close contact with the person. It's easier to get transferred with low immune system person's body mainly in old age peoples. Unlike other typical cold or allergy disorders, however, Severe Acute respiratory syndrome coronavirus mostly affects the lower respiratory tract, resulting in fatal Pneumonia, which can lead to severe death of a person. There is now no drug that can treat or cure the disease; however there are various preventative attempts underway.

The Corona Virus Can Be Detected In Humans & Can Be Diagnosed: A characteristic feature of bronchiolitis can be seen on chest radiography. Unknown infections are difficult to identify. With the use of different technologies nowadays we can detect the presence of coronavirus in any individuals. This technique is called RT-PCR. It is also possible to test for the presence of restriction enzyme fragment length polymorphism (RFLP). The major symptoms for severe acute respiratory syndrome or coronavirus take 2 to 14 days to appear after exposure to coronavirus. Major symptoms include cough, cold, fever, tiredness, running nose and headache. In children the symptoms are mild where as in adults generally old age the symptoms are very much serious including breathing problem and low oxygen saturation in the body. This is due to weaker immune system in old age people. It leads to less production of antibodies. It further leads to prone to viruses many severe acute respiratory syndrome or Coronavirus. Some people might not have any symptoms at all.

While others have critical symptoms like shortening of breath and pneumonia. It takes almost a week time for the symptoms to start seeing in our body.⁶ The rich of severe acute respiratory syndrome or Coronavirus increases with increase in age of people. This virus mainly spread through close contact with other infected person. Also it is spread through cough or sneeze through infected person. The treatment for severe acute respiratory syndrome or Coronavirus is vaccine. Vaccine is the one which can prevent you from getting ill due to spread of coronavirus. The other precautions that can be used to prevent transmission of virus are avoid crowded areas. Staying in indoor with proper ventilation. Washing hands with sanitizers that have at least 60- 70% alcohol content. By covering the mouth with a piece of cloth everything you cough or sneeze. Avoid using public transport like trains, busses, and cab sharing. Avoid travel to distinct places often. Only travel if there is a medical emergency with proper gloves, masks, face shield, PPE kit and use alcohol based sanitizers every time you any place of random contact (Mohan SV et al., 2021).

It's Possible That Coronavirus Is A Seasonal Pathogen: The SEVERE ACUTE RESPIRATORY SYNDROME or Coronavirus which causes fevers, coughing, and occasionally serious lung infections, have become part of our day today lifestyle and it get it completely eradicate from our life we must require a really potential vaccine.

It can not only kill the virus but also provide greater immune power to our body.

Methodology Used In Locating Medicines: Coronaviruses are divided into many different forms or classes based on their phylogenetic relationships such as γ -, β - & α - corona viruses which infect mammals, and birds. Severe acute respiratory syndrome or Coronavirus like Middle East Respiratory Syndrome corona virus It is a part of coronavirus family, which causes lower track respiratory difficulties, whilst those belonging to the type produce only moderate upper track infection. To yet, no particular treatment for severe acute respiratory syndrome or corona viruses exists, but researchers are evaluating various processes such as medications and possible functions such as viral inhibitors, employing genomic knowledge from six previously found human corona viruses uses. Human body have the defence mechanism to fight and defence respiratory infections, the immune system plays a critical role in this process by producing antibodies in our body to fight against severe acute respiratory syndrome or Coronavirus.

Our immune system is very responsive to foreign bacteria and viruses. It helps the body to remember a particular virus and produce antibodies accordingly. Apart from entry of viruses our body immune system prevent virus growth, dissemination, and transmission. Early in infection in our body is detected by T lymphocytes of wbc since it start getting produce in large amount in our body to fight against viruses. It also after a period of time helps our immune system to identify and detect the same viruses. This is most likely owing to the inherent Co-V features seen in replicative non-structural proteins, which actively help the virus elude detection by the host's innate immune system. Nowadays Vaccines which are based on proteins of severe acute respiratory syndrome or Coronavirus or Middle East Respiratory Syndrome corona virus were shown to be protective in animal model implying that a human vaccine against severe acute respiratory syndrome or Corona virus is possible. We must rely on preventive measures until particular COVID-19 therapies become available.

Medication: To prevent transmission of severe acute respiratory syndrome or Coronavirus we should make social distancing with other coronavirus patients. We must sanitize our hand regularly with alcohol based sanitizers. we should wear protective equipment like gloves, masks and ppt kit. If a person gets coronavirus symptoms we must provide the person self isolation so that the other person might have lesser chance of getting affected by the corona virus. If someone get ill due to any infection from the surrounding the first treatment should be provided at the home itself. If the symptoms for the person are cough and cold. The person should be given home remedies such as gargling with hot water and some antibiotics. The persons which are coronavirus affected should be first provides with oxygen ventilation if the persons have problems of suffocation or breathing. The person should be kept in isolation wards.

Proper care should be provided to persons by the health care professionals. For the treatment of new Coronavirus patients old recovered patients from coronaviruses can donate their plasma for the treatments of new Coronavirus patients. This plasma provides antibodies preparation in the body of affected patients to fight against the virus. Nowadays new vaccines are introduced which provides better immunity to the person. Which helps individuals to prepare their bodies to produce antibodies to fight against the viruses? For the patient if their oxygen saturation is fine. They would never have symptom other than fever. All they require is a normal tablet like the paracetamol. Some patients who have coronavirus might get recovered by Remdesivir. But it might not be useful in all patients but there are some patients in which early recovery is seen. For the patients in which there is a requirement of rapid level of oxygen increase another rime de known as Tocilizumab is used. But it works only in specific group of patients.

Preventive Measures: Prevention is better than cure. so one should follow certain preventive measures to protect against respiratory viral infections or Coronavirus. Some of them include self isolation in a area of room where there is proper ventilation of air. Using of N95 masks which have triple layer protection and which prevents entry of harmful viruses, bacterial, and also the most deadly severe acute respiratory syndrome or Coronavirus in our body during respiration. Discard the use of masks every 8 hours of use. Also discard the mask if by chance it get wet or dirty. One can discard the mask by using appropriate disinfectant such as 1% sodium hypochlorite before throwing it.

Also one should keep their body hydrated all the time. One should frequent use sanitizers or wash their hands for at least 50 seconds with alcohol based disinfectant and soap. One should never share personal belongings with other persons in their house. Always ensure to wipe out surfaces with proper alcohol based disinfectant that are touched often. Such as spoon, doors handle, & hands. We should always have a body temperature measurement to keep track of our daily health. One should use pulse oximeter to frequently measure the oxygen saturation in our body. Many studies on different pandemics were reported. Studies on impact of Covid 19 pandemic were reported by Vagga et. al., Dhok et. al., Gawai et. al. and Kasturkar et. al. Khubchandani et. al. reported on emerging therapeutic options for COVID-19. Naqvi et. al. reported the impact of Covid on educational system whereas Nibudey et. al. reported about preparedness of hospitals.

Surgical masks should be required for patients with respiratory complaints. However, because of the virus's rapid global spread, similar travel restrictions have already been extended to other countries. It's unclear whether these efforts will result in a reduction in viral spread.

CONCLUSION

Severe acute respiratory syndrome or Coronavirus is more prone to old age people rather than young since they have a weaker immune system. So they require vaccines to produce antibodies to fight against severe acute respiratory syndrome or Coronavirus.

Since vaccines for any of these respiratory viruses are currently unavailable, Any serious illnesses in order to be effectively diagnose, control, and prevent from being transmitted to others one should follow social distancing, wearing of masks and gloves, regular sanitization of hands with alcohol based disinfectant. To understand the infection mechanism and to design drugs, a comprehensive investigation of COVID19, including genomes and proteomics, is required. However, there is an acceptable chance to make vaccines model to fight with the difficult situation. In addition, future studies using more sensitive diagnostic technologies should provide accurate procedures which will help in developing vaccines. It will further eradicate the chain of coronavirus.

REFERENCES

- Abstracts From The 5th International Conference On Prevention & Infection Control (Icpic 2019): Geneva, Switzerland. 10-13 September 2019. *Antimicrob Resist Infect Control*. 2019;8(Suppl 1):148. Published 2019 Sep 9. Doi:10.1186/S13756-019-0567-6.
- Chen J., Liu D., Liu L., Liu P., Xu Q., Xia L., Et Al. (2020c). A Pilot Study Of Hydroxychloroquine In Treatment Of Patients With Moderate Covid-19. *Zhejiang Da Xue Xue Bao Yi Xue Ban* 49 (2), 215–219.
- Dhadse, P., V, Kiran Sethiya, Chitrika Subhadarsanee, And Khushboo Durge (September 2020). "The Novel Corona Virus (Ncov2) Seems To Defy All Laws Of Virology." *International Journal Of Pharmaceutical Sciences And Research* 11, No. 9: 4104–13. [https://doi.org/10.13040/Ijpsr.0975-8232.11\(9\).4104-13](https://doi.org/10.13040/Ijpsr.0975-8232.11(9).4104-13).
- Dhama K, Patel Sk, Sharun K, Et Al (2020). Sars-Cov-2 Jumping The Species Barrier: Zoonotic Lessons From Sars, Mers And Recent Advances To Combat This Pandemic Virus. *Travel Med Infect Dis* ;37:101830. Doi:10.1016/J.Tmaid.2020.101830
- Dhok, Archana, Lata Kanyal Butola, Ashish Anjankar, Amol Datta Rao Shinde, Prakash Kesharao Kute, And Roshan Kumar Jha (August 10, 2020). "Role Of Vitamins And Minerals In Improving Immunity During Covid-19 Pandemic - A Review." *Journal Of Evolution Of Medical And Dental Sciences-Jemds* 9, No. 32: 2296–2300. <https://doi.org/10.14260/Jemds/2020/497>.
- Gawai, Jaya Pranoykumar, Seema Singh, Vaishali Deoraaji Taksande, Tessa Sebastian, Pooja Kasturkar, And Ruchira Shrikant Ankar (July 27, 2020). "Critical Review On Impact Of Covid 19 And Mental Health." *Journal Of Evolution Of Medical And Dental Sciences-Jemds* 9, No. 30: 2158–63. <https://doi.org/10.14260/Jemds/2020/470>.
- Hozhabri H, Picci Sparascio F, Sohrabi H, Et Al (2020 Aug 5). The Global Emergency Of Novel

- Coronavirus (Sars-Cov-2): An Update Of The Current Status And Forecasting. *Int J Environ Res Public Health*. 2020;17(16):5648. Published. Doi:10.3390/Ijerp17165648
- Kasturkar, Pooja Ramesh Rao, And Jaya Pranoy Kumar Gawai (August 2020). Engaging School Going Children During Covid-19 Lockdown." *Journal Of Clinical And Diagnostic Research* 14, No. 8 <https://doi.org/10.7860/Jcdr/2020/44800.13952>.
- Khubchandani, Sheetal Rameshlal, And Trupti Madhav Dahane (October 12, 2020). Emerging Therapeutic Options For Covid-19." *Journal Of Evolution Of Medical And Dental Sciences-Jemds* 9, No. 41: 3082–85. <https://doi.org/10.14260/Jemds/2020/677>.
- Lozano R, Fullman N, Mumford Je, Knight M, Barthelemy Cm, Abbafati C, Et Al (2019). Measuring Universal Health Coverage Based On An Index Of Effective Coverage Of Health Services In 204 Countries And Territories, 1990–2019: A Systematic Analysis For The Global Burden Of Disease Study. *Lancet* 2020.
- Mohan Sv, Hemalatha M, Kopperi H, Ranjith I, Kumar Ak (2021). Sars-Cov-2 In Environmental Perspective: Occurrence, Persistence, Surveillance, Inactivation And Challenges. *Chem Eng J*;405:126893. Doi:10.1016/J.Cej.2020.126893
- Naik Rr, Shakya Ak (2021 Feb 4). Therapeutic Strategies In The Management Of Covid-19. *Front Mol Biosci*. 2021;7:636738. Published. Doi:10.3389/Fmolb.2020.636738
- Naqvi, Waqar M., And Arti Sahu. (July 6, 2020) Paradigmatic Shift In The Education System In A Time Of Covid 19." *Journal Of Evolution Of Medical And Dental Sciences-Jemds* 9, No. 27: 1974–76. <https://doi.org/10.14260/Jemds/2020/430>.
- Nibudey, Akanksha Ram, Vidya Sudhindra Baliga, And Prasad V. Dhadse. "To Keep Covid-19 Out Of Hospitals In India - Are We Prepared?" *Journal Of Evolution Of Medical And Dental Sciences-Jemds* 9, No. 37 (September 14, 2020): 2751–54. <https://doi.org/10.14260/Jemds/2020/597>.
- Rakesh Kumar Jha, Pradip Jain, Ranjit S. Ambad, Nandkishor. The Origin, Transmission And Mortality Of Corona Virus. *Jcr*. 2020; 7(10): 93-96. Doi:10.31838/Jcr.07.10.23.
- Rampado R, Crotti S, Caliceti P, Pucciarelli S, Agostini M (2020 Apr). Recent Advances In Understanding The Protein Corona Of Nanoparticles And In The Formulation Of "Stealthy" Nanomaterials. *Front Bioeng Biotechnol*. 2020;8:166. Published 3. Doi:10.3389/Fbioe.2020.00166
- Sharma A, Tiwari S, Deb Mk, Marty JI (2020). Severe Acute Respiratory Syndrome Coronavirus-2 (Sars-Cov-2): A Global Pandemic And Treatment Strategies. *Int J Antimicrob Agents*; 56(2):106054. Doi:10.1016/J.Ijantimicag.2020.106054
- Shaw R, Kim Yk, Hua J. Governance, Technology And Citizen Behavior In Pandemic: Lessons From Covid-19 In East Asia. *Progress In Disaster Science*. 2020;6:100090. Doi:10.1016/J.Pdisas.2020.100090
- Song F, Shi N, Shan F, Et Al (2019-Ncov). Emerging Coronavirus Pneumonia. *Radiology*. 2020:200274. 10.1148/Radiol.2020.200274.
- Vagga, Anjali Ambadas, And Archana Janardan Dhok (August 31, 2020). "Blessings In Disguise: Yoga And Meditation During Corona Lockdown." *Journal Of Evolution Of Medical And Dental Sciences-Jemds* 9, No. 35: 2540–44. <https://doi.org/10.14260/Jemds/2020/552>.
- Wang, Haidong, Kaja M Abbas, Mitra Abbasifard, Mohsen Abbasi-Kangevari, Hedayat Abbastabar, Foad Abd-Allah, Ahmed Abdelalim, Et Al (October 2020). Global Age-Sex-Specific Fertility, Mortality, Healthy Life Expectancy (Hale), And Population Estimates In 204 Countries And Territories, 1950–2019: A Comprehensive Demographic Analysis For The Global Burden Of Disease Study 2019." *The Lancet* 396, No. 10258: 1160–1203. [https://doi.org/10.1016/S0140-6736\(20\)30977-6](https://doi.org/10.1016/S0140-6736(20)30977-6).
- Zamora-Ledezma C, C Dfc, Medina E, Et Al (2020;25(20). Biomedical Science To Tackle The Covid-19 Pandemic: Current Status And Future Perspectives. *Molecules*: 4620. Published 2020 Oct 11. Doi:10.3390/Molecules25204620