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A Path Physiology of Corona Virus and its Socio-Economic Implications

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Abstract

There has been growing concern about the safety and vigilance behind the corona virus SARS- CoV2 also known as COVID-19, which has had a significant impact worldwide. This has led many industries to accelerate new security technologies and to improve existing ones to deal with the highly contagious virus. Most governments around the world also adopt policies that focus on increased protection to prevent the spread of the virus and protect key personnel such as health care providers, store staff and police. This review investigates advances in bio-based antimicrobial encapsulations as an effective measure to curb the growth of COVID-19 virus in areas and reduce its spread through global contact. This will help researchers develop more sophisticated techniques in material science to focus on infectious diseases in the future.

Keywords

Inadequate Immune Systems, COVID-19 epidemic, Infectious diseases, COVID-19 (Corona Virus), Symptoms

1. Introduction

The COVID-19 epidemic has identified major gaps in the healthcare industry that include the lack of effective vaccines and drugs, infection testing, real-time transmission of viruses, inadequate immune systems, and a lack of protective and effective patient care. Some of this may be due to a lack of research focused on safety precautions. As a result of this epidemic, a significant group of research activities have focused on safety features that have the unique properties required for safety applications. This graphic review aims to provide insight into the use of bio-based materials to address critical biological challenges.
Corona Virus is well-known as COVID-19. It is a virulent epidemic [1] that caused by the newly discovered epidemic disease known as corona virus and part of virus family having symptoms that range from common cold and till MERS Corona-virus. Serve-Acute-Respiratory-Syndrome-Corona virus (SARs) and Middle-East-Respiratory-Syndrome-Corona virus (MERS) [2]. This disease was come in the year 2019 month of December during outbreak investigation in Wuhan, China and its symptoms that will directly impact the respiratory & it will transmit from one to other person [3]. In the month of March, 2020 this disease declared as pandemic by the world health organization. This pandemic disease has been monitoring by the

WHO & PHG stands for public-health-groups also includes U.S. Centers of CDC i.e. Centers-Disease-Control & prevention [4]. These association time-2time posting the information regarding to this pandemic disease in the website. This website is free and all can take necessary information from that website. According to the information posted by the WHO in the website related to the virus i.e. spreads [5] by one person to other. It is mandatory to maintain social distancing of 6 feet i.e. 2 meters. This virus can be spreads to other via small droplets from the nose as well as mouth, that is why it become mandatory to wear face mask by covering mouth as well as nose. So that virus can`t enter through mouth & nose [6]. Someone having symptoms of coughing/sneezing the World Health Organization (WHO) requested to have check of corona test. This virus can endure in any surface up-to several days [7]. If someone can touch that infected surface. The virus comes through hand. If touch our face without cleaning our hands. Virus will come to our body. WHO give advisory to wash hands on regular basis and also sanitize hands whenever you touch any surface.

Figure1: Structure of COVID-19

2. RELATED WORK

Symptoms

This virus affected distinctly in each & every individual. Basically, it`s a disease that will have impact on the respiratory. This disease is particularly categorized into mild, moderate and severe symptoms on individual basis. Mild & moderate symptoms [2] patient don`t require any type of special treatment. Patients have high symptoms i.e. high fever, tiredness & dry cough [8]. They will need to go for special type of treatment or death may also occur.

Some of the other symptoms are mentioned below:

- Breath`s shortness [1]
- Pains& aches
- Throat`s sore
- Nausea/runny nose/diarrhoea

Person having mild symptoms but they are healthy. That patient should advice giving by WHO or given by ICMR to go for home isolation [9]. They will need to communicate with COVID-19 help line / medical provider for testing & referral [10]. Person with symptoms i.e. fever, breathing problem & cough should contact their doctor & seek medical-attention.

Prevention

Prevention is better than cure. Following are steps that are given by ICMR / WHO on regular basis & published them in website. This will also help us in slow transmission rate of infection transmitted to another person.

- Make it your habit to clean hands regularly with the help of soap at-least 20 seconds.
- Alcohol- hand rub should have alcohol level of more than 70 %.
- Maintain social distancing at least of 2-meter.
- Avoid touching your face in public place.
- Always cover nose and mouth.
- Stay home if feel unhealthy.
- Refrain from smoking and other activities that weaken the lungs.
- Avoid going un-necessary outside and also avoid going to crowded places.

Effects on Human Body

This type of virus is transmitted via droplets embodied with air from infected person`s coughing / sneezing. Corona-virus comes in air. The same air which we breathe with the help of nose, eyes & mouth. The infected particles mixed in droplets sailing immediately nasal`s passages back & to the throat`s back of mucous membranes [6]. This will directly attack to the cell's particular receptor.

If the person is with low resistivity power and contacted by an infected person in any mode of air or water. The person needed to be medicated quarantine. Affected molecules have barbed proteins linger from outer surface &spikes sticks onto cell membranes, grant virus to create genetic materials to introduce into the human body cell.

How does that process cause respiratory problems?

When the infected cells enter into the body will make multiple copies of virus. Finally, they blast out and affect body cells. They start showing their symptoms dry cough & throat sore. According to the Dr. Schaffner, when virus gets interacted with the lungs, their mucous membranes become inflamed.

This virus can defile the alveoli or lung sacs. In that case, lungs have to make more effort to dissipate required oxygen to the body and takeaway CO2 from the blood.

If someone getting swelling throat, it becomes challenging situation for O2 to creep covering the mucous membrane by the chief clinical officer. Amy Compton-Phillips for the PHS stands for Providence Health System. The first case of covid-19 was reported in the month of January, in US hospital in Everett, Wash.

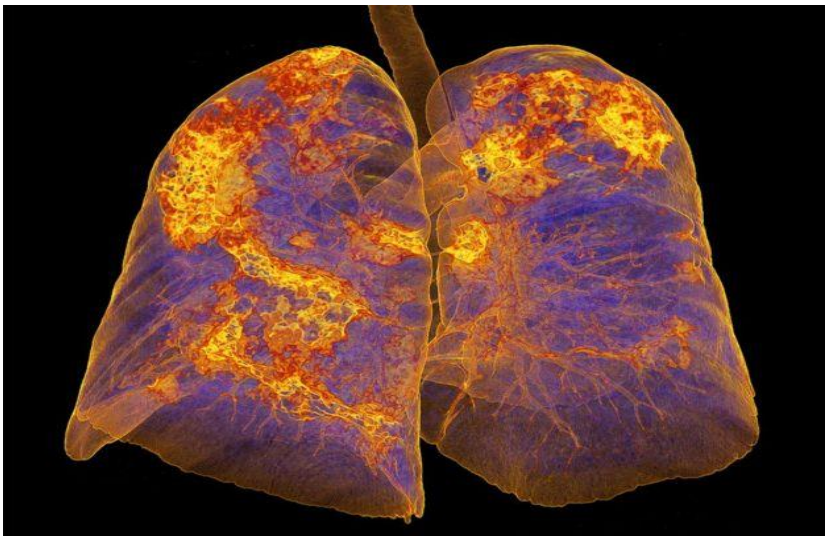

Figure 2: Affected lungs by COVID-19.

Impact on Economy

This virus strikes the people lives as well as county economy. According to IMF expert's pandemic will bring recession globally in the year 2020. It`s consider as worse than earlier came in the financial year 2008. As nobody knows how longs this recession will run & nature recovery are the main matter`s debate.

Table 1: Corona cases in some countries till 18thNov 2020

SN	Countries	Total Cases	Total Active	Total Recovered	Total Death
1	USA	11,709,384	4,364,544	7,090,377	254,463
2	India	8,925,467	448,006	8,346,331	131,130
3	Brazil	5,912,903	384,464	5,361,592	166,847
4	France	2,036,755	1,847,330	143,152	46,273
5	Russia	1,991,998	456,528	1,501,083	34,387
6	Spain	1,535,058	N/A	N/A	41,688
7	UK	1,410,732	N/A	N/A	52,745

According to the economists, it will directly depend on how long the lockdowns last will run & lockdowns also very necessary to stop the running of the virus. This will also depend on government how long they will support individual who lost their jobs & small-scale business man.

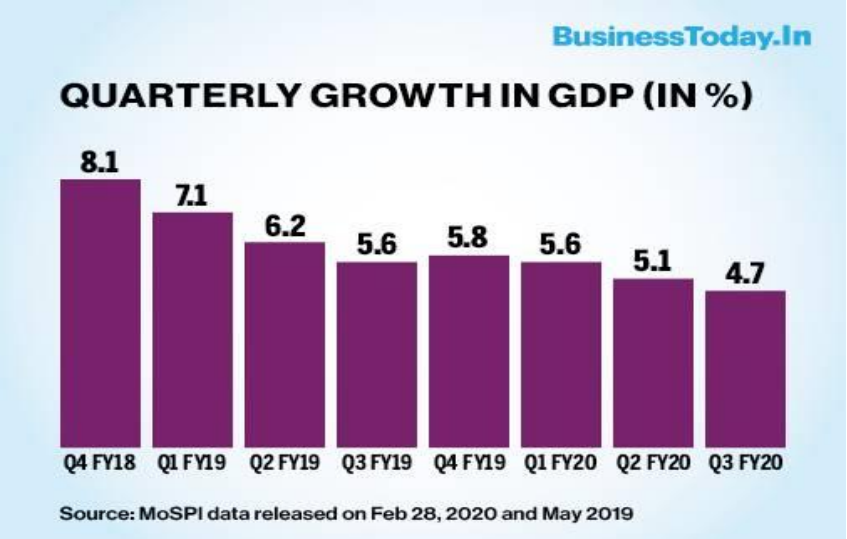

Figure 3: GDP growth during May 2019 to Feb 2020

According to Sen, Financial year 2020, the growth rate would be 3.5% and according to the analyst says financial year 2021 will have different scenario if we talk about previous financial year 2020. The first half of FY21, the growth rate would be 0 and if we talk to second half of FY21, the growth rate would reach 7% talking about average growth. In India, Rangarajan is optimistic as compared to other in case of growth rate prediction. According to him, the growth rate may decline by 0.5% from 5% that NSO predicted earlier. The growth rate will be (-) ve. What will happen in quarter 2 and quarter 3, the estimation would be 4%.

Lockdown impact on economy

Senior Economist and Vice President of Kotak Institutional Equities on data`s NOS, Mr. **Suvodeep Rakshit-** According to him, the real growth rate was in negative 23.9% lower than what market were expecting [11-12]. This was become tough time for economy was much lower than the economy expected. Production unit was down by deep construction in manufacturing. Construction, hotel & trade, transport sector. The impact of heavy consumption & investment went expenditure pushed down. The slow improvement in activity indicators (remaining well below pre-covid levels). The growth recovery will be contracting & gradual for all quarter for financial year 2021. Recovery growth will also be rode to the Covid spread curb& localized lockdown removal. Consumption or investment side need to be pushed will be the government choice. Stimulate the durable growth, limited fiscal space. Thus, result into growth recovery will continue in first half financial year 2022.

According to Pronob Sen highlights on data, public investment goes up levels in 2019. In first quarter of 2020, the country has lost 13 lakhs crore in their income. Expecting the quarter 4 positive footprints but that will due to base effect. In festive season you will saw consumption increase but larger decline due to impact of coivd-19 as compared to last year but investment of public need to go at-least last year levels. The ability of government boosts up the limited consumption. That can actually hike the payable of cash into Jan Dhan accounts yojana. Money would be spent immediately if it comes before arrival of festive season in India.

3. MEASURES TAKEN BY GOVERNMENT

1. The Indian Council of Medical Research (ICMR) says 1000 Coronavirus medical testing laboratories across India provided Standard Operating Procedures (SOPs) for private laboratories to undertake COVID-19 tests.
2. Janta curfew on 22 March 2020 was announced by Sr. Narender Modi, PM.

3. Government announced full 21 days lockdown all over India.
4. Five month lock -down resulted market scenario worst accordingly GDP goes down. To recover this situation government passes verdict on 7 September 2020 to start metro.
5. Lockdown goes to Unlock 4.
6. It is necessary to wear mask at time of driving.
7. Government made it compulsory for all to wear mask and maintain social distancing of 2 meters.
8. GYM, Saloon has been started in the month of Aug 2020.
9. School and college remain close in the month of September 2020 too
10. Shine board J&K has started Vaishno devi yatra from 16th Aug 2020. Allowed 2000 per day to allow darshan. Less than 10 years and more than 60 years people are not allowed to darshan. Also maintaining other measure for saver darshan for all peoples.
11. Government has also started home treatment for patient having low symptom of Covid 19 by visiting of doctor in their home.
12. Marriage hall has been converted for treating covid-19 patient.
13. Many 5 stars hotel has been converted to isolation center.
14. Only 100 to 200 people gathering is allowed in marriage and other functions.
15. Government has also started help-line for people related COVID-19.
16. Arogya-Setu app becomes mandatory to install each and every people phones.
17. No there is no need to pass to travel with intra state.
18. If you want to travel to other state then you will need Covid-19 test report and pass transfer and other documents too.
19. UP government has renounced one day lockdown from 9AM to 9 PM for Sunday only.
20. Construction work has been started from un-lock 2.
21. Many migrant's worker started their work after coming from home.
22. In flights it become mandatory to wear mask, face shield and maintaining social distancing. Air hostess are wearing PP kit at the time of travelling.

Vaccine

Following are the list of countries involved in making vaccine. Some of them are there in clinical trials. Lot of money has invested by listed company to make vaccine. Also, thousands of scientists have been involved by giving their dedicated time to make the vaccine as soon as possible. Earlier it took approx. 3 to 4 years for any vaccine manufacturing that involved their clinical trials firstly on animals. After completing successful trails on animals then these vaccines given to the human beings. Also trails on large population. After successful trail then these vaccines were given for patent, documentation work.

4. CONCLUSION

The conveyance of essential information and services by the government on COVID-19 virus. All around the word particularly involved in developing vaccine in the developed societies or countries their governments are taking much needed measures so that the citizens can aware about this disease and protect them from this virus as large as population not affected by this virus by putting restriction. So, wearing mask when we go outside. Always maintain social distance. If symptoms are visible, consult with doctor and try to isolate yourself. Always follow guideline provided by government and not to hide personal information it will impact in risk your life and other lives too.

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