

Selfcare Management and Strategies of Drug Development for COVID 19

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Abstract

Corona virus disease (COVID 19) is a recently discovered pandemic. Coronavirus infectious disease originate from Wuhan, China and widely and quickly spread throughout the world. WHO pronounced it as Pandemic. As the spread of disease is through contact and the rigidity of virus in term of its lifespan outside the human body its threat human beings is alarming with no therapy to treat. As per the WHO guidelines the only way to control is to prevent the disease by following selfcare method. Though the Scientific community started research on the vaccine as well as newer drugs the development of which may require certain time to reach at the people at large. Thus selfcare management is found to be the only strategy to combat the infection by COVID 19.

Introduction

Novel corona virus(COVID-19) is rapidly spreading worldwide and its mitigation is threat to human life and declared as pandemic. It is caused by virus belonging to family Corona viradae initially originated from Wuhan China and having size of 65-125 nm in diameter.¹ The virus that causes COVID-19 is transmitted mainly through droplets produced when a person who is infected coughs, sneezes, or exhales. Contact with someone who has COVID19 or touching a contaminated surface and then eyes, nose, or mouth,be infected with the virus by breathing. These droplets are too heavy to hang in the air and quickly fall on floors or surfaces. People with COVID-19 generally develop signs and symptoms, including mild respiratory symptoms and fever, on an average of 5-6 days after infection (mean incubation period 5-6 days, range 1-14 days). At times experience additional symptoms, such as: runny or stuffy nose,

sore throat, headache, body aches and pains,diarrhoea, some observations suggest that respiratory symptoms may worsen in the second week of illness. This appears to occur after 8 or 9 days. According to the World Health Organization (WHO), about 1 in 5 people with COVID-19 become seriously ill. Most people infected with COVID-19 virus have mild disease and recover. Older people and those with underlying health conditions such as cardiovascular disease, diabetes, chronic respiratory disease and cancer are more likely to experience serious illness.^{2,3}

The number of patients worldwide is increasing even though the virus is not that fatal. Total number of affected patients by COVID 19 Globally, as of 14:00 pm CEST, 8 June 2020, there have been 7103804 confirmed cases of COVID-19, including 406303 deaths, reported to WHO. In India till 14:00 pm CEST, 8 June 2020, there have been 258090 confirmed cases of COVID-19, including 7207 deaths. India is a country which ranks second in population, the seventh-largest country by area and the democracy with largest population in the world. In country like India, where the population is 135 Crores and literacy is low risk of COVID-19 virus is very evitable and can lead to dangerous situation challenging life and healthcare system. Covid pandemic has affected a lot of developed countries and likewise India will also be affected. A lot of check has to be done

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in administrative and clinical level in India to combat the healthcare post pandemic where social distancing is only vaccine available.⁴ To know how population is affected

by spread of virus COVID 19 is illustrated by a very true example in central India is mentioned in Fig 1.

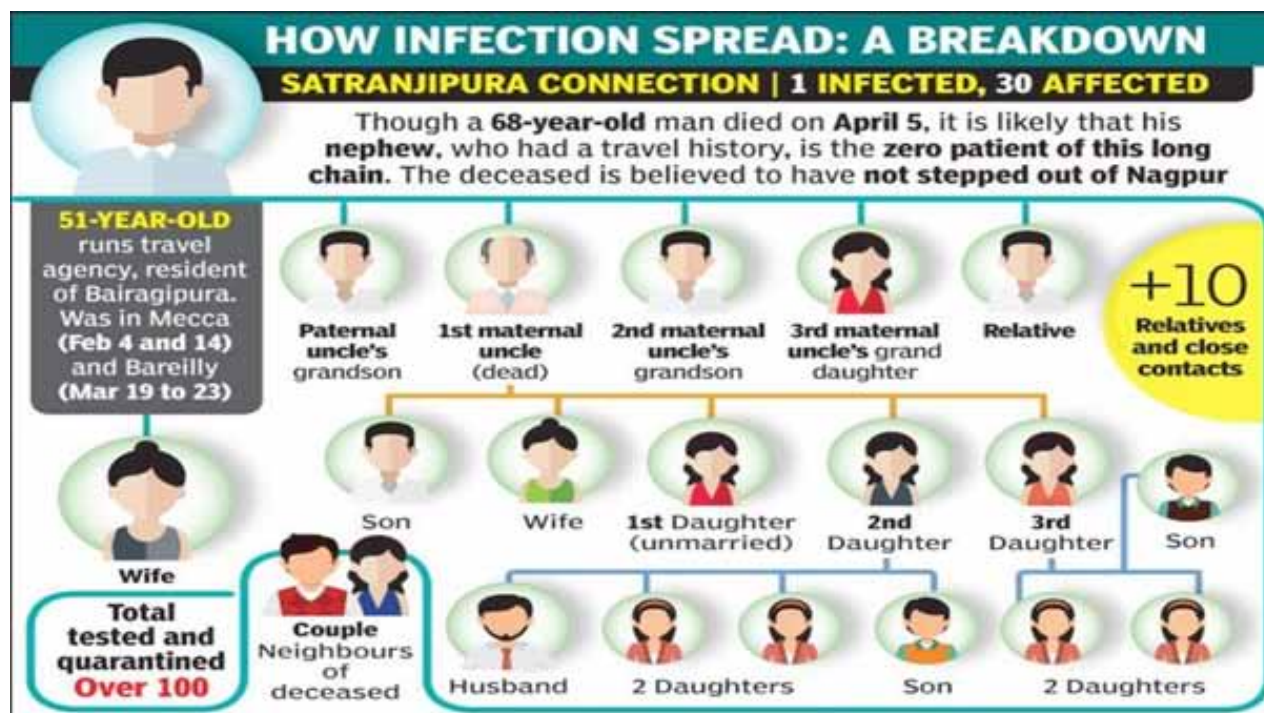


Fig 1: The 68-year-old male deceased from Satranjipura, Nagpur, India was the First case of COVID 19 in Nagpur with affected 44 other people in family and relatives⁵

India is a social country, where mostly daily life of Indians may include social gathering, meeting, celebrations, hoteling, weddings and for some conferences. Therefore to deal with COVID 19 would be difficult. More over most of these occasions revolve round food items and maintenance of hygiene in bulk food will be the big query.

Moreover for people who have travelling as their job profile will face difficulty in maintaining social distancing during their travel due to population and sanitization of such big travel network on daily basis will be challenging.

Worshiping in religious place is also big tradition in India, visiting temples, mosques and church is a part of daily routine for many in India. Buying groceries, visiting mall, cinemas, salons and spas, taking domestic help are required to be done with due care.

The population can face very dangerous situation in

case of COVID 19 spread and thus in India management of this virus is very crucial and important.

There are various measures through which novel corona virus can be fought back and will be discussed further.

In topsyturvy times of global pandemic it is important to remember that self care is farmost important to keep safe, there are several ways to selfcare issued by WHO

1. As per the guidelines wearing mask is needed
2. No hugging and shaking hands anymore
3. Distancing from others in crowdy places
4. Washing hands with soap regularly protects health of everyone
5. Avoid touching eyes, nose and mouth.
6. Using alcohol based sanitizers, cleaning and disinfecting high-touch surfaces regularly is an important precaution to lower the risk of infection

7. Cleaning laundry at home
8. Removing shoes before entering home and changing clean clothes after being in crowded places and washing hands with soap and water immediately
9. Washing Groceries properly with running water
10. Informing people about importance of hygiene
11. Keep surroundings clean, sanitising frequently touched objects
12. Providing sanitation of Toilets used by COVID 19 patients at home
13. Many health co-benefits observed by safely treating water and sanitation facilities and by applying good hygiene practices.
14. Special care for safety of children, elderly, patients, caregivers and staff of organisations giving service to COVID 19 patients or ward.
15. Leaving home only if very necessary
16. Testing and Visiting doctor if symptoms occur⁶⁻⁹

Other Self Care Measures includes:

1. Exercise: Exercising at home can be helpful and improve physical as well as mental health
2. Yoga: stressful times can be managed by yoga and meditation
3. Making meal at home can be safe for prevention of outside food contamination
4. Nutrition plays a vital role in immunity building which inturnplays a key role against diseases
5. Hopeful: Being hopeful can give positive wibes moreover keeping self-busy as well as learning something new can be helpful
6. Maintaining routine on daily basis
7. Taking breaks from media and news
8. eHealth tools such as applications and websites can be used to support self-care behaviors and maintain chronic illness stability

Strategies for development of new drugs for treatment of corona virus¹²⁻¹⁴

The stages of new drug development:

- Phase 1: Discovery and Development.
- Phase 2: Preclinical Research.

- Phase 3: Clinical Research.
- Phase 4: FDA Review.
- Phase 5: FDA Post-Market Safety Monitoring

The parameters which are considered in the drug repurposing

1. Possible targeting
2. Knowledge of small molecules
3. Data reported against viruses
4. Search of substance that interact with viral proteins
5. Identification of right drug
6. Repurposing of drugs that have already been reported
7. Novelty in work to produce results
8. Drugs that increase the pace to save more lifes in COVID19
9. Host directed therapies
10. Bioinformative tools
11. Computer aided drug design
12. Computational studies
13. Drug data management and patient data management
14. *In vivo* models
15. ACE Blockers
16. Points which are lesser danger
17. Amino acid targeters
18. Look for existing molecules
19. Biological affecting points
20. Consider genetic mutations points
21. Find for functional group
22. Uniform data manner
23. Defined route of administration
24. Pharmacokinetics and dynamics
25. Electronic health record
26. Screen all chemical class of drugs
27. Preventing antibiotic reuse in repurposing
28. Emergence of antimicrobial resistance
29. Emphasis on small molecules

30. Intellectual property and economic consideration
31. Clinical trials of all the phases
32. Patentability of the proposed work
33. Consideration of crucial protein protein interaction
34. Finance management of research and pricing of drug in developing country like India
35. Multi institutional efforts
36. Industry sponsoring for development and research
37. Drugs which can be active against other species of Corona virus
38. Drugs that can be used in future pandemic

R & D Blueprint and COVID-19¹⁵⁻¹⁶: The current COVID-19 pandemic is new, however the worldwide response attracts on the teachings learned from epidemic outbreaks over the past many decades:

As a part of WHO's response, the R & D Blueprint was activated to accelerate nosology, vaccines and medicine for this novel coronavirus. The Blueprint aims to enhance coordination between scientists and world health professionals, accelerate the analysis and development method and develop new norms and standards to find out from and improve upon the worldwide response.

On thirty January 2020, following the recommendations of the Emergency Committee, the WHO agency Director-General declared that the occurrence constitutes a Public Health Emergency of International Concern (PHEIC). The scientists of all over world on COVID-19 met at the World Health Organization's Geneva headquarters on 11–12 Feb 2020 to assess the present level of data regarding the new virus, agree on vital analysis queries that require to be answered desperately and to seek out ways that to figure along to accelerate and fund priority analysis to curtail this occurrence and indurate those within the future. The discussion PROVED TO BE CRUCIAL agreement on 2 main goals. the primary was to accelerate innovative analysis to assist contain the unfold of the epidemic and facilitate look after those affected. The second was to support analysis priorities that contribute to world analysis platforms in hopes of learning from the present pandemic response to higher indurate ensuing unforeseen epidemic. Building on the response to recent outbreaks of Ebola virus, SARS-CoV and MERS-CoV, the R & D Blueprint has expedited a coordinated and accelerated

response to COVID-19, together with associate degree new program to develop a immunizing agent, analysis into potential pharmaceutical treatments and reinforced channels for data sharing between countries. The current world COVID 19 public health emergency underscores the necessity to accelerate the event of COVID 19 candidate vaccines. The unit for immunizing agent prioritization aims to supply aspirational support to immunizing agent developers from a public health perspective likewise on grade immunizing agent platform approaches and/or candidates to be thought-about for additional development and probably take into account for later stage of analysis within the context of the worldwide COVID 19 occurrence.

The objectives are:

1. To review the present pipeline of candidate vaccines for COVID 19
2. To review the present pipeline of candidate vaccines for different coronaviruses and discuss their price in protective against the COVID 19
3. To create preliminary recommendations on whether or not the event of COVID 19 candidate vaccines ought to be prioritized over the event of different coronaviruses candidate vaccines.

This Consultation presents associate degree initial step towards the analysis of vaccines against this novel Coronavirus. There are currently efforts to spot further vaccines and to expand the support of proof on the market on every of the candidates.

The COVID-19 (Technology) Access Pool are voluntary and supported social commonality. That gives a one-stop buy knowledge domain, information and data to be shared equitably by the worldwide.

The aim is to accelerate the invention of vaccines, medicines and different technologies through open-science analysis and to fast-track development by mobilizing further producing capability. This may facilitate guarantee quicker and additional evenhanded access to existing and new COVID-19 health merchandise.

There are a unit 5 key parts to the initiative:

- Public speech act of factor sequences and data;
- Transparency round the publication of all clinical test results;

- Governments and different funder's area unit inspired to incorporate clauses in funding agreements with pharmaceutical corporations and different innovators regarding even distribution, affordability and the publication of trial data
- Licensing any potential treatment, diagnostic, immunizing agent or different health technology to the Medicines Patent Pool - a United Nations-backed public health body that works to extend access to and facilitate the event of, life-saving medicines for low- and middle-income countries.
- To promote and enhance support to innovative models and technology transfer that increase national income and provide capability, together with through connection the Open Covid Pledge and therefore the Technology Access Partnership (TAP).

With worldwide help and initiation, C-TAP can function as important part to the access COVID-19 Tools (ACT) Accelerator and different initiatives to support efforts to fight COVID-19 globally.

WHO, Costa Rica and every one the co-sponsor countries have conjointly issued a "Solidarity decision to Action" asking relevant stakeholders to hitch and support the initiative, with suggested actions for key teams, like governments, analysis and development funders, researchers, trade and civil society.

To date, the COVID-19 Technology Access Pool is currently supported by the subsequent countries: Argentina, Bangladesh, Barbados, Belgium, Belize, Bhutan, Brazil, Chile, state, Ecuador, Egypt, Central American country, Honduras, Indonesia, Lebanon, Luxembourg, Malaysia, Maldives, Mexico, Mozambique, Norway, Oman, Pakistan, Palau, Panama, Peru, Portugal, St. Vincent and Grenadines, African nation, Sri Lanka, Sudan, European nation, Timor-Leste, Uruguay, Zimbabwe.

Conclusion

COVID 19 is dangerous, but with above approaches and united efforts with government such pandemic

can be overcome. Giving priorities to healthcare and following the guidelines can increase life expectancy in COVID 19.

Ethical Clearance: Taken from institutional ethics committee.

Source of Funding: Self.

Conflict of Interest: Nil.

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