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Covid-19 – A Case for Preventive Care

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ABSTRACT

BACKGROUND

The adverse impact of the novel coronavirus or SARS-COV-2 causing COVID-19 are so huge that the case for preventing the virus from getting contracted is strengthening day by day.

SUMMARY

COVID-19 has been the new diseasepandemic therefore there are no established treatment protocol to be followed while treating the patient. The ad hoc treatment methodologies according to the condition of patient has been adopted. The overwhelmed health care infrastructure, the novelty of the virus, vulnerable comorbid patients, lack of health care professionals all strengthens the case for seriously adopting the preventive measures to safe guard the people from the lethal disease.

CONCLUSION

COVID-19 needs more study on treatment part as well as prevention part so that both the

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measures can be effectively implemented on the backing of empirical evidences.

KEYWORDS: Covid-19, Pandemic, HCW, Long Term Implications, Comorbidity, Preventive Measures.

INTRODUCTION

Coronavirus disease 2019 or COVID-19 is the viral infectious disease that is caused by novel coronavirus or SARS-COV-2. This novel coronavirus is the successor of SARS-COV which had caused the severe acute respiratory syndrome (SARS) outbreak years ago. The COVID-19 is totally different in terms of scale, geographical expanse and being called as once in a century event. The unprecedented nature of the disease can be assesses from the fact that no other disease was successful in crossing the hundred million marks in terms of infected cases in almost past hundred years. Since its inception in Wuhan city of Hubei province in china, it has progressed much faster and is still uncertain in many ways. As of February 13, 2021, 108,195,727 infections of COVID-19 has been reported from all across the world and 2,383,492 case fatalities has been reported from more than 200 regions of the world(1). In March, 2020 itself, WHO termed it as pandemic, upgrading its status from epidemic which was a first such event(2). United States of America, India, Brazil, Russian federation, United Kingdom and France are the top countries having more than half of the total infections and case mortalities happening due to COVID-19 complications(3). The new strain of the mutated virus has been reported from United Kingdom and Brazil is a serious cause of concern as it is supposedly more virulent than the present strain of the novel coronavirus(4).

NOVELTY OF THE DISEASE

Coronavirus disease 2019 or COVID-19 is the emerging disease pandemic which has spread all across the world. Billions of people are affected by the viral disease caused by novel coronavirus. The novel coronavirus or SARS-COV-2 has been identified for the first time. Therefore there is no history of medical illness caused by the virus. Therefore no medical treatment course is available to deal with the viral spread. Medical fraternity and researchers are all deliberating over method by which this virus can be contained and defenestrated from the society. For now, the treatment are done according to the patient's condition and symptoms shown. Novel coronavirus basically exploits the weakened immune system and enters the body through droplets of infected person via nose or mouth or any other openings. The angiotensin-converting enzyme 2 (ACE 2) receptors are spread all across the human body over major organs(5). These ACE 2 receptor act as gateway for the novel coronavirus to which its spike protein gets attached and the entry into the host cell is facilitated. Then the virus spreads and increases the viral load. Inflammatory reaction can be seen all over the body and oxidative stress is increased in the body which is not good for proper functioning of the human body. Broadly, there are two types of cases. Asymptomatic which shows no symptoms but harbors viral load and symptomatic which can show varied range of symptoms. Symptoms include fever, cough and cold to loss of taste and smell, diarrhea, brain fog also known as confusion in decision making. Severe symptoms might escalates to hypoxia, pneumonia, acute respiratory distress syndrome (ARDS) and associated medical reactions. The Novel coronavirus is extremely new and still evolving even after one year has been passed. Symptoms has been constant changing and regular

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additions has been made by the virus to the symptoms list. The unprecedented nature of the virus can be seen from the fact that no other event was successful in keeping the world at standstill due to widespread lockdown measure imposed by the authorities to contain the viral spread. More than hundreds million infection cases has been registered which is in itself is a milestone as no other diseases was successful to do so(6). Even no drug has been developed till date to particularly and specifically deal with the COVID-19 case infections. Various drugs which are currently in use for other purposes are being repurposed or repositioned to treat the COVID-19 infections. In some cases, especially in comorbid cases, infected person is already on medications concerning to its comorbidity and the COVID-19 medications hinders previous medications role creating complications. No previous researches are available about the behavioral pattern of the virus as virus struck the world for the first time. Therefore large amount of uncertainty is attached to the virus making it difficult to predict the course of the COVID-19 pandemic. Still no study is available about the clinical progression in a particular medical condition of the virus, which implies that virus can take its own course which is not known at. Therefore it extremely necessary to prevent the virus from infecting at first place so that these uncertainties do not gets attached to us. Preventive measures are always the best measures particularly in new pandemic like COVID-19(7).

OVERBURDENED HEALTH CARE INFRASTRUCTURE

As the COVID-19 pandemic started in Wuhan city of Hubei province of China, no one thought that it would grapple the whole world with its vicious tentacles. The spread of the disease is unprecedented in many sense. COVID-19 has crossed hundred million cases worldwide which is an extraordinary feat for any disease outbreak. Any disease outbreaks are mainly handled by the health care infrastructure and its component. Hospitals and clinics treat the cases and doctors performs the important task of treatment. Allied health care workers also act according to their role(8). But the health care infrastructure has its limitations and lacunas which has been completely exposed by the pandemic. The extremely high virulent nature and capacity to produce fatal clinical outcomes makes the novel coronavirus causing COVID-19 more feared. The r0 value which indicates the number of people infected by one infected individual was very high in COVID-19 as compared to previous outbreaks of Severe Acute Respiratory Syndrome (SARS) and Middle Eastern Respiratory syndrome (MERS). Therefore the geographical expanse as well as spreading time was very vast and fast respectively of COVID-19. As more and more number of people got infected, they started to seek medical interventions. The health care infrastructure was completely overwhelmed and are on the verge of collapse. Almost all the hospitals and health care facilities dealing with COVID-19 were running over the capacity(9). Allocation of beds was to be rationalize as beds were scarce. Also health care professionals were already less in number prior to pandemic era and now they were overburdened with huge amount of cases. Pictures from Italy and Spain, two of the hardest hit countries by COVID-19 showed that the health care infrastructure was completely collapsed. Doctors and nurses along with allied health care professionalswereworking round the clock still they were unable to cater the huge influx of infected patients. Sophisticates medical equipment's such as ventilator, x-ray machines, CT scanners, oxygen support system was already lacking the adequate number and COVID-19 pandemic made it even scarce. Major chunk of case fatalities due to COVID-19 are due to lack of early treatment plus lack of sophisticated equipment's.

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There was no east-west divide in the pandemic effects, as the western also known as developed countries have sophisticated health care system. COVID-19 spared no country and all were hit as hard as possible. The overwhelmed health infrastructure created a fearful and grim picture of the pandemic and strengthen the case for preventive measures which is preventing the disease from happening at first place. The demand was so surged that resources from various other sectors were diverted to the containment of COVID-19. Still the scarcity of the resources were felt. On the cost of COVID-19 containment, other diseases were completely overlooked as there was no infrastructure as well as time available from health sector(10).

COMORBID PATIENTS AND CASE FATALITIES DUE TO COVID-19

Recently case fatalities due to COVID-19 complications touched the two million unfortunate marks. This was first time in the recent history of human civilization that several million casualties happened in a span of one year. Novel coronavirus has lethal capabilities that can produce worse outcome. Particularly persons already having underlying medical chronic illness also known as comorbidity. Various chronic illnesses such as diabetes mellitus, cardiovascular diseases, liver ailments, renal failure, obesity etc. can prove fatal if combined with COVID-19 infection(11). In fact the comorbid people are placed in highest risk category which have high chances of contracting the COVID-19 infection and producing severe clinical outcomes post-infection. Few conclusions are established and accepted all over the world and correlation between comorbidity and clinical outcome is one of them. Comorbid patients have high chances of producing fatal outcome. Major part of case fatalitieshappened due to COVID-19 are constituted by comorbid group. The need of sophisticated medical care like intensive care unit and oxygen support system which are scarce are also high in comorbid patients. Basically the comorbid patients are undergoing there immunosuppressive state. This made their system weakened over time as some comorbidities lasts for decades and never cured(12). The innate immune response of such individual is very weak and thus they cannot defenestrate the virus from their system in case of external pathogenic invasion. Comorbid patients need more than normal medical attention and requires lot of resources. Various comorbidities such as diabetes mellitus, hypertension, cardiovascular ailments, renal ailments, liver cirrhosis, and obesity are very common among the people. The number of sufferers of these disease around the world are in hundreds of millions. These are categorized as high risk groups and individuals which must be protected as they contribute the most in case infections as well as in case mortalities caused by COVID-19. Therefore it is important to protect these individuals or group in population so that they are safeguarded from the COVID-19 infection(13).

LONG TERM IMPLICATIONS OF COVID-19

After the first year has been passed after first few infections of COVID-19, the Europe is aptly suitable for second wave as some researchers claimed that the successive waves are even harsher than first wave. People who tested positive and successfully undergone treatment have experiencing certain set of symptoms even after recovering from the COVID-19 infection. This include persistence of symptoms like fatigue, sleep apnea, loss of taste and smell, cough even after they got the virus way back in march and April of 2020. This persistence of symptoms in

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some individuals is also known as COVID-19. The severity of long can't be measures on case fatality rate scale but it is seen that healthy athletic persons lost their ability to execute as vigorously as they were doing(14). Some people required inhalers which they hadn't used in their life prior to COVID-19. This is an extremely fresh phenomenon and needs comprehensive study. As some countries planning to ride on her immunity tide. By looking at long COVID-19 condition it would definitely hamper the prospect of these agencies. Recurrence of one symptom or the other is a signature mark of the long COVID-19 as far as this time is concern. This has created the need of study of long term impact study on very large people to conclude or correlate the data. Careless people who generally defies the guidelines and rule made or they so that they are safe from the contraction are more prone to such consequences. More importantly men behave less responsibly than women, if the long COVID-19 conditions find the ground among larger masses it will be again more deadly for than women as the case is now. So far now, the part of COVID-19 which was most feared was the treatment part and once infected person got through the treatment, it was widely believed that it will be free to resume its pre-COVID-19 era lifestyle(15). But as the pandemic o COVID-19 completed one year, many spurt of persistence of symptoms are being reported. Patients are complaining about various symptoms persisting even after complete treatment of COVID-19. Now some more symptoms included in the list of previously reported symptoms which are extreme fatigue, loss of physical capacity, restrictions in some bodily activity, intermittent loss of taste and smell, occasional fever along with cough and cold. After medically examining the patients complaining the persistence of symptoms, it was found that COVID-19 has taken internal toll means the internal mechanism of the organs has been damaged in many patients. This was resulted after observation of weakening of heart muscles, weakening of alveolar tissue, adversely affected the diffusion capacity of carbon monoxide (DL_{co}) levels and so on. Especially patients who have already shown severe symptoms and have shown cytokine storm which is extremely harmful for the heart muscle and can damage the functioning of the heart. The myocardial; injury is bound to happen and myocarditis cannot be denied completely. The researchers are not completely shocked as similar long term implications were seen among patients of SARS and MERS. Many studies followed the patients of SARS and MERS for up to two years or twenty four months so that they can establish some correlation. These studies have lot to offer and can be taken into account while planning for any such eventualities(16).

Coronavirus disease 2019 or COVID-19 has been creating ruckus all over the world.(17) One medical emergency has been successful in getting convert into financial as well as general emergency which was needed to be looked upon as soon as possible. The extremely virulent nature of the virus, its immensely high spreading ability and the capability of producing lethal clinical outcomes aggravated the demand of containment of the novel coronavirus spread as soon as possible. Millions and millions of lives has been directly affected by the infection itself and billions were adversely affected by the economic fall out of the pandemic as well as degradation in socioeconomic situation. Almost every human being has been affected by the pandemic in either direct or indirect way. The situation was so unprecedented that it was categorized as once in a century event. No other event in the human civilizational history was successful in creating destruction of such magnitude. Containment was the real challenge as no precedent or medical evidence of the pandemic was available as novel coronavirus has been infecting people for the first time. The R0 value which is the value that tells that how many people further can be infected by one infected individual is extremely high in case of COVID-19 than any other recent

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outbreaks. It indicates that it is difficult than usual to contain the spread of the infection. Mitigation measures have to be employed. The model which was employed to contain the spread was test, trace and treat model. The important aspect of the model was dependent on the treatment. Health care professionals are at the forefront in fight against the COVID-19 pandemic. They are the prime and first contact to the infected patients and they have to treat the patients. No treatment guidelines or protocol was defined as the disease outbreak was new. Health care professionals were and are trying their best to somehow contain by existing methods. The expertise and knowledge of a doctors and nurses along with other allied health care professionals was tested. Various positive and negative impact has been experienced by these frontline warriors which they never had before. The multispectral impact on the health care professionals will remain to linger for at least few years as the event was once in a century. Many lessons are being drawn but after one year of inception, the pandemic is still evolving and creating new challenges every day(18).

PREVENTIVE MEASURES AVAILABLE FOR COVID-19

Along with these visible impact on ground there is some amount of hidden toll also is incurred on various entities attached to it. The less talked about that is psychological impact of the COVID-19 which is intangible must also be taken into account while assessing the full-fledged impact of COVID-19. Therefore it becomes inevitable to protect oneself from the infection of COVID-19 so that one can be stay away from all these menace. World Health Organization (WHO) along with various other governing agencies has suggested and recommended some action whichare preventive measures in the wake of COVID-19(19). These measures were very easy to adopt and have already proven their efficacies on various occasional counts. Preventive measures which can be followed by all are wearing of masks, maintaining physical distancing, sanitizing hands regularly before and after touching any surfaces, going out only when it is extremely necessary are some of the measures that can drastically reduce the case count and provide some relief to health care infrastructure. Also the comorbid patients who are extremely vulnerable in both, catching the COVID-19 infection and developingsevere clinical symptoms post infection must follow thesesteps compulsorily so that they are safeguarded. Doctors and medical professionals also need to follow all the protocol to protect themselves from the infection while treating the COVID-19 infected patients as they are the prime contact.A number of articles on indigenous and ayurvedic aspects of prevention and disinfection during COVID-19 pandemic were reported (20-23). Ingole and Bhutada addressed transmission of covid 19 through eyes(24). Studies on clinical approaches, therapies and palliative care were reported (25-27). Kalagani et. al. reported about surgical protocols for patients with COVID-19 (28). Khatod et. al. reported about preventive measures for dental professionals (29).

CONCLUSION

Coronavirus disease 2019 or COVID-19 is still emerging and making new trends on daily basis. It is important to keep a constant eye on it to thoroughly understand the behavioral changes brought about by the novel coronavirus or SARS-COV-2. The health care infrastructure has been completely collapsed and need a revival as soon as this pandemic is over. The divergence of

resources has been the issue of contention since other diseases has been completely neglected in the containment of COVID-19. Many negative repercussions can be there as they are still not completely panned out. Lack of health care professionals should be fulfilled by recruiting more number of them. Also allied health care professionals such as nurses and midwives can also be trained for short term so that they can cater the incoming demand of COVID-19 patients. The immediate of the mitigation measures must be of lowering the infection cases that are being reported daily and zeroing the number of deaths reported due to COVID-19 complications. Long term implications need more study to be understood and more analysis should be done on upcoming such cases. Valuable lessons can be drawn from the previous similar outbreaks so that a broader picture can be created. Comorbid patients are in the high risk category and their own medications must be provided adequately so that they can sustain the COVID-19 pandemic. Preventive measures are best suited for all age groups as well as to different sections of society as they are cost effective and easy to adopt. Widespread awareness programs can be conducted regarding the efficacy of the preventive measures.

REFERENCES

1. COVID-19 Map [Internet]. Johns Hopkins Coronavirus Resource Center. [cited 2021 Feb 13]. Available from: https://coronavirus.jhu.edu/map.html
2. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020.pdf.
3. WHO Coronavirus Disease (COVID-19) Dashboard [Internet]. [cited 2021 Feb 13]. Available from: https://covid19.who.int
4. Wise J. Covid-19: New coronavirus variant is identified in UK. BMJ [Internet]. 2020 Dec 16 [cited 2020 Dec 23];371:m4857. Available from: https://www.bmj.com/content/371/bmj.m4857
5. Yuki K, Fujiogi M, Koutsogiannaki S. COVID-19 pathophysiology: A review. Clin Immunol [Internet]. 2020 Jun [cited 2020 Nov 24];215:108427. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7169933/
6. Azer SA. COVID-19: pathophysiology, diagnosis, complications and investigational therapeutics. New Microbes and New Infections [Internet]. 2020 Sep 1 [cited 2020 Nov 24];37:100738. Available from: http://www.sciencedirect.com/science/article/pii/S2052297520300901
7. Parasher A. COVID-19: Current understanding of its pathophysiology, clinical presentation and treatment. Postgraduate Medical Journal [Internet]. 2020 Sep 25 [cited 2020 Nov 24]; Available from: https://pmj.bmj.com/content/early/2020/10/06/postgradmedj-2020-138577
8. Kim G, Wang M, Pan H, H Davidson G, Roxby AC, Neukirch J, et al. A Health System Response to COVID-19 in Long-Term Care and Post-Acute Care: A Three-Phase Approach. J Am Geriatr Soc. 2020 Jun;68(6):1155–61.
9. Konwar AN, Borse V. Current status of point-of-care diagnostic devices in the Indian healthcare system with an update on COVID-19 pandemic. Sensors International [Internet]. 2020 Jan 1 [cited 2020 Dec 27];1:100015. Available from: http://www.sciencedirect.com/science/article/pii/S2666351120300152
10. Chetterje P. Gaps in India's preparedness for COVID-19 control. The Lancet Infectious Diseases [Internet]. 2020 May [cited 2020 Dec 27];20(5):544. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1473309920303005
11. Wang T, Du Z, Zhu F, Cao Z, An Y, Gao Y, et al. Comorbidities and multi-organ injuries in the treatment of COVID-19. Lancet. 2020 Mar 21;395(10228):e52.

12. Guan W-J, Liang W-H, Zhao Y, Liang H-R, Chen Z-S, Li Y-M, et al. Comorbidity and its impact on 1590 patients with COVID-19 in China: a nationwide analysis. Eur Respir J. 2020;55(5).
13. Callender LA, Curran M, Bates SM, Mairesse M, Weigandt J, Betts CJ. The Impact of Pre-existing Comorbidities and Therapeutic Interventions on COVID-19. Front Immunol. 2020;11:1991.
14. Rastogi A, Tewari P. Covid 19 and its cardiovascular effects. Annals of Cardiac Anaesthesia [Internet]. 2020 Oct 1 [cited 2020 Dec 17];23(4):401. Available from: https://www.annals.in/article.asp?issn=0971-9784;year=2020;volume=23;issue=4;spage=401;epage=408;aulast=Rastogi;type=0
15. Yelin D, Wirtheim E, Vetter P, Kalil AC, Bruchfeld J, Runold M, et al. Long-term consequences of COVID-19: research needs. The Lancet Infectious Diseases [Internet]. 2020 Oct 1 [cited 2020 Dec 17];20(10):1115–7. Available from: https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30701-5/abstract
16. Ngai JC, Ko FW, Ng SS, To K-W, Tong M, Hui DS. The long-term impact of severe acute respiratory syndrome on pulmonary function, exercise capacity and health status. Respirology. 2010 Apr;15(3):543–50.
17. Dushyant Bawiskar, Pratik Phansopkar, Ayurva Vilas Gotmare. COVID-19 Facets: Pandemics, Curse and Humanity. ijrps. 2020 Aug 6;11(SPL1):385–90.
18. Mehta S, Machado F, Kwizera A, Papazian L, Moss M, Azoulay É, et al. COVID-19: a heavy toll on health-care workers. The Lancet Respiratory Medicine [Internet]. 2021 Feb 5 [cited 2021 Feb 11];0(0). Available from: https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(21)00068-0/abstract
19. Güner R, Hasanoğlu I, Aktaş F. COVID-19: Prevention and control measures in community. Turk J Med Sci. 2020 Apr 21;50(SI-1):571–7.
20. Ingale, A.K., and P. Shrivastav. "Role of Ayurveda for Poor and Pandemics (Covid19) – a Review Article." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 923–27. https://doi.org/10.26452/ijrps.v11iSPL1.3163.
21. Jilte, A.A., and M.A. Deshpande. "Role of Rasayana(KutipraveshikRasayana and Achar Rasayana) in the Prevention of Covid 19 like New Diseases." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 280–85. https://doi.org/10.26452/ijrps.v11iSPL1.2713.
22. Kanoje, R., and A. Pargaonkar. "Home Remedies for the Elderly in the Direction of Protection against COVID-19: An Ayurveda Perspective." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 1167–70. https://doi.org/10.26452/ijrps.v11iSPL1.3576.
23. Khedekar, S., R.B. Rathi, B.J. Rathi, and A. Deshmukh. "The Rationale behind Ayurveda Codes of Conduct (AacharRasayana) in Covid-19 like New Disorders." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 391–95. https://doi.org/10.26452/ijrps.v11iSPL1.2733.
24. Ingole, S.S., and R. Bhutada. "Transmission of Covid 19 through Eyes — Review Article." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 1008–10. https://doi.org/10.26452/ijrps.v11iSPL1.3406.
25. Jaiswal, A., S. Borage, and P. Shelotkar. "A Clinical Approach to COVID-19." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 723–29. https://doi.org/10.26452/ijrps.v11iSPL1.3073.
26. Jameel, P.Z., and A.M. Taksande. "COVID-19: A Review of Drugs and Therapies for Children." Sri Lanka Journal of Child Health 49, no. 3 (2020): 210–17. https://doi.org/10.4038/sljch.v49i3.9136.

Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 4, 2021, Pages. 6995 – 7003
Received 05 March 2021; Accepted 01 April 2021.

27. Joseph, M.B., S. Pohekar, A. Raut, and M. Patil. "The Palliative Care and Covid-19 Pandemic." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 618–22. https://doi.org/10.26452/ijrps.v11iSPL1.2861.
28. Kalagani, B., M. Yeola, and A. Zade. "Surgical Protocols for Patients with COVID-19." Journal of Datta Meghe Institute of Medical Sciences University 15, no. 1 (2020): 144–48. https://doi.org/10.4103/jdmimsu.jdmimsu_142_20.
29. Khatod, S., A. Ikhar, P. Nikhade, and K. Khatod. "Preventive Measures for Dental Professionals during Worldwide Emergency COVID-19." International Journal of Research in Pharmaceutical Sciences 11, no. Special Issue 1 (2020): 150–53. https://doi.org/10.26452/ijrps.v11iSPL1.2294.