



COVID 19 in Geriatric Patients in Vidharbha Region

Ayush Chamat¹, Ninad Nagrale² and Nandkishor Bankar^{3*}

¹*Datta Meghe Medical College, Nagpur, India.*

²*Department of Forensic Medicine Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre, Nagpur, India.*

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

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Although all age groups are at risk of getting COVID-19, older people are at greater risk of developing serious illnesses as a result of the physical changes that come with aging and the onset of health symptoms. Symptoms: Fever Cough Throat Throat Tiredness. According to the current epidemiological evidence, patients with SARS-coV2 virus over the age of 80 are at greater risk of dying than younger patients, according to a study of Coronavirus 2019 (COVID-19) is a highly contagious disease caused by a novel coronavirus from Wuhan, China, was also recognized by the International Committee on Taxonomy of Viruses as acute acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (ICTV).

Aim: Covid-19 in geriatric patients in vidharbha region

Materials and Methods: Covid 19 positive Patients went directly to the Observed Treatment in the Dept. of Medicine and Dept. of Respiratory, DMMC and SMHRC, Nagpur.

Results: Recovery is usually slower and more difficult. Most of us are concerned about our elderly relatives who live far away from us. They can experience anxiety as a result of living alone, being on a fixed income or pension, no longer driving and unable to use public transportation, and having

their regular health checkups postponed. They may also be suffering from undiagnosed or poorly treated depression. COVID-19 has exacerbated the concerns of millions of elderly people.
Conclusion: We may also assist them by following the steps below. Ensure their medical supplies are stocked up.

Keywords: COVID -19; SARS-CoV2; RNA; social distancing; immune system.

1. INTRODUCTION

Coronavirus 2019 is a highly contagious disease caused by a novel coronavirus that originated in Wuhan, China, and was identified by the International Committee for Infectious Diseases at Coronavirus 2. The number of older people means older people / older people who have a lower immune system which is why these people are at higher risk of infectious diseases such as covid-19. They are also likely to be having heart disease lung diseases and kidney diseases which is reason for their weak immune system. Poverty is also a major reason in many sectors older people are likely to live in poverty which makes it more hard to get things so as to take care of themselves. Research says that ageing process in people over 60 0 make them more vulnerable/ prone to covid-19 [1].

While people of all ages are at risk of contracting COVID-19, the physical changes that come with ageing, as well as poor health symptoms, put older people at a higher risk of developing serious illnesses. Symptoms include: It's a fever Tiredness Throat Indignation According to current evidence of the disease's spread, SARS-coV2-infected patients over the age of 80 are more likely to die than younger patients, according to a study of 355 patients in Italy, the average age of death was 79.5 years, and a report released in China in March. Over the age of 80, about 22% of infected people die. Hunan province conducted study [2].

There were 81.0 percent young-old patients and 19.0 percent old-old patients among the 105 elderly patients reported with COVID-19; 54.3 percent of elderly patients were females. Overall, 69.5 percent of elderly patients had underlying conditions, with hypertension (43.8 percent), diabetes (25.7 percent), and heart disease being the most common (16.2 percent). 22.9 percent of the elderly patients had moderate cases, and 10.5 percent had critical severe cases. COVID-19 patients with sex-related problems In addition to a higher vulnerability due to age, epidemiological studies reported sex-specific variations in the incidence and mortality of

SARS-CoV and SARS-CoV2 infection in humans, with males having a higher mortality rate than females. Surprisingly, as people get older, this sex-dependent rise in disease severity after pathogenic CoV infection becomes more pronounced [3].

The sex-related variations in virus susceptibility and disease severity were explored in early studies using preclinical models. Xie and colleagues discovered that old rats of both genders had significantly lower ACE2 expression than young adult and middle-aged rats (p 0.001). However, older female rats have a higher expression of ACE2 than older male rats (p 0.05), with no substantial difference in ACE2 content between genders in younger groups. DNA methylation can also control the ACE2 gene's transcription. The methylation of this gene's DNA causes gene repression and upregulation of the angiotensin converting enzyme. The fact that ACE2 is located on the X chromosome increases the risk of gender disparities in COVID 2019 vulnerability and progression. Due to X chromosome activation, variations in methylation can occur in the ACE2 gene in particular. Recently, Fan et al. found that sex has a major impact on different aberrant methylation of the ACE2 promoter in humans, which may explain why men are at higher risk of COVID-19 infection. DNA methylation has also been linked to biological ageing as a possible driver [4].

In addition, unlike autosomal chromosomes, sex chromosomes undergo a variety of methylation changes as they mature. Jin et al. recently discovered that in COVID-19 patients, older age is a major risk factor for extreme and morbidity. Despite the fact that both males and females are prone to COVID-19, male patients, regardless of age, may be more likely to die. In recovered patients, SARS-CoV-2 RNA can be detected in upper respiratory specimens for up to 12 weeks after symptom onset. There were no secondary infections among the 790 contacts of 285 "persistently positive" people, including 126 adults with chronic symptoms. Separating replication-competent virus from 108 of the 285

patients was unsuccessful. According to available data, adults with mild to moderate COVID-19 are infectious for no more than 10 days after symptom onset. Most adults with more serious to critical illness or extreme immune compromise are infectious for no more than 20 days after symptom onset; however, people with severe immune compromise have been related to shedding replication-competent virus for longer than 20 days. These findings support using a symptom-based rather than a test-based approach to ending most patient isolation, ensuring that adults who are no longer infectious are not kept isolated and excluded from work or other responsibilities unnecessarily [5].

2. MATERIALS AND METHODS

Covid-19 positive Patients went directly to the Observed Treatment in the Dept. of Medicine and Dept. of Respiratory, DMMA and SMHRC Nagpur.

3. RESULT AND DISCUSSION

As of August 10th, 2020, the coronavirus disease 2019 pandemic had wreaked havoc around the world, with more than 20 million confirmed infections and nearly 0.75 million deaths. The severity and symptoms of this infection are determined by a number of factors. Controlling and treating COVID-19 is difficult due to advanced age and underlying diseases. In 2019, 703 million people around the world were over the age of 65. COVID-19 is thought to be responsible for 18% of mortality in people over the age of 76 [6].

Reduced receptor expression and exaggerated pathophysiological responses may be debilitating in cases of insufficient immunity. Future research will, however, expose the secret facets of these dimensions in the COVID-19 disaster. The key issues of serious acute respiratory syndrome coronavirus 2 infection in the geriatric population were discussed in this review article, including the possibility of contracting severe COVID-19, which may lead to death, the variability in clinical manifestations, and other pandemic-related concerns. We also spoke about the importance of paying more attention to the elderly, taking effective prevention and control steps, and taking geriatric co-related changes into account when designing and developing vaccines. Disruption of both the innate and adaptive arms of the immune system has been identified as people get older [7].

Furthermore, the elderly produce inflammatory mediators and cytokines on a continuous basis, also known as 'inflaming' mediators and cytokines. Furthermore, in older adults, abnormal ciliary function and ciliary ultrastructural abnormalities can jeopardise virus SARS-CoV-2 particle clearance. For a competent response against microbes, a complex network of innate and adaptive immune effector cells is needed. Antigenpresenting cells (APCs) recognise the strategic segment of the microbe, known as pathogen-associated molecular patterns or (PAMPs), through Toll-like receptors (TLRs), eliciting the secretion of various cytokines and synchronising effector cells. TLR expression and downstream signalling seem to be compromised in the elderly, resulting in a faulty immune response. TLR-4 upregulation in monocytederived dendritic cells, on the other hand, tends to favour inflammation in the elderly [8].

Surprisingly, an overactive immune system may be to blame for hypertension's negative impact on SARS-CoV-2 infection. TLR4 expression has been confirmed to be increased in hypertensive models, despite T-cell function being unexpectedly depressed, as it is in the elderly. Anti-TLR4 therapy, on the other hand, reduces inflammation, and once T-cell function is restored, blood pressure levels drop. The two leading causes of death, heart disease and cancer, account for around 1,700 and 1,600 deaths every day, respectively. Individually, COVID-19 deaths have exceeded these figures. COVID-19 mortality rates have now surpassed these levels, making this infectious disease deadlier than heart disease and cancer. With holiday travel and celebrations, as well as the increased indoor exposure that winter brings, transmission increases. Several factors have been related to increased virus sensitivity and COVID-19 burden in patients infected with SARS-CoV-2. Since comorbidities are more common as people age, the elderly may have a more serious COVID-19. Because of the pathophysiological changes that characterise the respiratory system, ageing has been closely linked to poor outcomes [9].

According to current epidemiological evidence, SARSCoV-2-infected patients over the age of 80 have a higher risk of death than younger patients. As much as possible doctors and patients should communicate over video, email or other means rather than face-to-face. Most importantly, advise them to contact their family

doctor, a helpline, or a nearby hospital if they experience symptoms such as fever with cough, fever, and/or shortness of breath. In the current situation, most countries have imposed self-quarantine or self-isolation in order to contain or minimise the pandemic's devastating effects. Daily use of personal protective equipment (PPE), physical distancing, and self-isolation are all recommended steps to prevent the spread of this deadly virus. The aim of social distancing is to reduce the number of cases and keep the society from spreading [10]. However, in the geriatric community, this social isolation has resulted in an increase in mental decline, depression, and suicide attempts [11].

At this crucial period of the COVID-19 outbreak, self-quarantine is aimed at "social distancing, not social isolation." Hand hygiene and respiratory etiquette are also important suggestions for the elderly [12].

Disinfection of the environment in which geriatric people live should be done on a regular basis to avoid contamination of surfaces and reduce infection risks. These specific guidelines should be vigorously implemented by healthcare professionals, family members, and caregivers of the elderly to avoid COVID-19 infection among the elderly [13-15].

To prevent a high mortality rate, therapeutics and vaccinations must be formulated with the elderly in mind. Increased mortality can result from geriatric population ignorance and inadequate healthcare monitoring and services. As a result, health authorities all over the world must pay attention to the geriatric population and issue recommendations tailored to their needs [16-18]

4. CONCLUSION

The elderly/geriatric population must be prioritized for treatment because they are more susceptible to diseases. Deaths are more common in the geriatric community, according to a case study. The elderly are more vulnerable for many reasons: they have more chronic illnesses than younger people, and their ageing immune systems find it more difficult to combat diseases, parasites, and viruses. Recovery is usually slower and more difficult. Most of us are concerned about our elderly relatives who live far away from us. They can experience anxiety as a result of living alone, being on a fixed income or pension, no longer driving and unable to use public transportation, and having their regular

health checkups postponed. They may also be suffering from undiagnosed or poorly treated depression. COVID-19 has exacerbated the concerns of millions of elderly people.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Gorbalenya AE, Baker SC, Baric R, Groot RJd, Drosten C, Gulyaeva AA, et al. Severe acute respiratory syndrome-related coronavirus: the species and its viruses—a statement of the Coronavirus Study Group. *Nat Microbiol.* 2020;5:536–44. DOI: 10.1101/2020.02.07.937862.
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020;395:497–506. DOI: 10.1016/S0140-6736(20)30183-5.
3. Jr BFP, Federico R. Tewes. What attorneys should understand about Medicare set-aside allocations: How Medicare Set-Aside Allocation Is Going to Be Used to Accelerate Settlement Claims in Catastrophic Personal Injury Cases. *Clinical Medicine and Medical Research.* 2021;2(1):61-64. Available: <https://doi.org/10.52845/CMMR/2021v1i1a1>
4. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med.* 2020;382:727–33. DOI: 10.1056/NEJMoa2001017.
5. Zhang YZ, Holmes EC. A genomic perspective on the origin and emergence of SARS-CoV-2. *Cell.* 2020;181:223–7. DOI: 10.1016/j.cell.2020.03.035.
6. Tiwari R, Dhama K, Sharun K, Iqbal Yatoo M, Malik YS, Singh R, et al. COVID-19: animals, veterinary and zoonotic links. *Vet Q.* 2020;40:169–82. DOI: 10.1080/01652176.2020.1766725

7. Daniel V, Daniel K. Diabetic neuropathy: new perspectives on early diagnosis and treatments. *Journal of Current Diabetes Reports*. 2020;1(1):12–14. Available: <https://doi.org/10.52845/JCDR/2020v1i1a3>
8. Dhama K, Sharun K, Tiwari R, Dadar M, Malik YS, Singh KP, et al. COVID-19, an emerging coronavirus infection: advances and prospects in designing and developing vaccines, immunotherapeutics, and therapeutics. *Hum Vaccin Immunother*. 2020;2020:1–7. DOI: 10.1080/21645515.2020.1735227
9. Wan Y, Shang J, Graham R, Baric RS, Li F. Receptor recognition by the novel coronavirus from Wuhan: an analysis based on decade-long structural studies of SARS coronavirus. *J Virol*. 2020;94:e00127–20. DOI: 10.1128/JVI.00127-20
10. Daniel V, Daniel K. Perception of Nurses' Work in Psychiatric Clinic. *Clinical Medicine Insights*. 2020;1(1):27-33. Available: <https://doi.org/10.52845/CMI/2020v1i1a5>
11. Feske S, Wulff H, Skolnik EY. Ion channels in innate and adaptive immunity. *Annu Rev Immunol*. 2015;33:291–353. DOI:10.1146/annurev-immunol-032414-112212
12. Rodriguez-Morales AJ, Cardona-Ospina JA, Gutierrez-Ocampo E, Villamizar-Pena R, Holguin-Rivera Y, Escalera-Antezana JP, et al. Clinical, laboratory and imaging features of COVID-19: A systematic review and meta-analysis. *Travel Med Infect Dis*. 2020;34:101623. DOI: 10.1016/j.tmaid.2020.101623
13. Daniel V, Daniel K. Perception of Nurses' Work in Psychiatric Clinic. *Clinical Medicine Insights*. 2020;1(1):27-33. Available: <https://doi.org/10.52845/CMI/2020v1i1a5>
14. Chen LK. Older adults and COVID-19 pandemic: Resilience matters. *Arch Gerontol Geriatr*. 2020;89:104124. DOI: 10.1016/j.archger.2020.104124
15. Dhama K, Patel SK, Kumar R, Rana J, Yatoo MI, Kumar A, et al. Geriatric Population During the COVID-19 Pandemic: Problems, Considerations, Exigencies, and Beyond. *Front. Public Health*. 2020;8:574198. DOI: 10.3389/fpubh.2020.574198
16. Lloyd-Sherlock P, Ebrahim S, Geffen L, McKee M. Bearing the brunt of covid-19: older people in low and middle income countries. *BMJ*. 2020;368:m1052. DOI: 10.1136/bmj.m1052
17. Morley JE, Vellas B. Editorial: COVID-19 and older adults. *J Nutr Health Aging*. 2020;24:364–5. DOI: 10.1007/s12603-020-1349-9
18. Koff WC, Williams MA. Covid-19 and immunity in aging populations - a new research Agenda. *N Engl J Med*. 2020;383:840–5. DOI: 10.1056/NEJMp2006761

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