European Journal of Molecular & Clinical Medicine

ISSN 2515-8260 Volume 9, Issue 6, 2022

ORIGINAL RESEARCH

To study the pattern of post COVID – 19 manifestations in group of patients visiting tertiary care hospital

[1]Bikramjeet Singh, [2]Mohit Mohindra, [3]Navjot Kaur Buttar

[1,3]MBBS Doctor, Amritsar, Punjab, India
[2]Fellow in Minimally Invasive Brain and Spine Surgery, Multi Super Speciality Hospital, Gurugram, Haryana, India

Correspondence:
Dr.Mohit Mohindra,Fellow in Minimally Invasive Brain and Spine Surgery, Multi Super Speciality Hospital, Gurugram, Haryana, India

ABSTRACT

Background: To assess the pattern of covid-19 manifestations in group of patients visiting tertiary care hospital.

Materials & methods:A total of 80 survivors of COVID-19 were enrolled in the present study. Complete medical history of all the patients was undertaken. Clinical and radiographic examination of all the patients was obtained. Information was collected through a telephonic interview and also by a questionnaire after the discharge from the hospital.

Results: The subjects were in age group of 30 to 60 years. The mean age was 45.2 years and their mean BMI was 30.1 Kg/m^2. From the subjects with post covid symptoms 25 (62.5%) were males and 15 (37.5%) were females. 22 (55%) of the patients were smokers. Fatigue (75%), dyspnoea (65%) and joint pain (55%) were the most common post COVID-19 manifestations found to be present

Conclusion: Majority of the COVID-19 survivors exhibit manifestations similar to COVID-19.

Keywords: covid-19, clinical manifestations, dyspnoea.

INTRODUCTION

The COVID-19 pandemic, which began in December 2019, has produced high infection rates as well as significant morbidity and mortality among older adults. [(1)] Immune senescence and age-related immune remodeling might be the reason for this vulnerability. Six months into the pandemic, reports of persisting symptoms and long-term morbidity in COVID-19 survivors have been published across the world. [(2)] Most of the cases have symptoms that persist from the time of acute clinical illness, whereas some cases have symptoms that appear even after recovery from acute COVID-19 and can also be intermittent. Residual organ damage, persistence of systemic inflammation, the effects of hospitalization, and associated comorbidities might be the contributing factors for this. Slowly, researchers have started using the term “long COVID-19 syndrome” or “post-COVID-19 syndrome” for these protracted symptoms following virological recovery of COVID-19. Post-COVID-19 syndrome is thought to be a multisystem disease, involving physical (breathlessness, fatigue, and anosmia), functional (reduced activity), mental (cognitive impairment), and psychological (anxiety and depression) domains. [(3,4,5)] Nevertheless, the precise definition or the duration of post-COVID-19 syndrome remains unclear.

Infection occurs when the viral particles are inhaled, enter the airways, and bind to the receptors on host cell surface. Like other coronaviruses, the S protein of SARS-CoV-2 binds to the angiotensin-converting enzyme 2 (ACE2), a metalloproteinase found in large amounts

in airway epithelial and endothelial cells that undergoes a conformational change to permit the fusion of viral and host cell membranes. [6]

The battle against COVID-19 does not seem to end with screening and management of acute disease. The medium and long-term health consequences experienced by survivors of COVID-19, if any, are currently unknown. [7] Series have reported the incidence of persistent symptoms ranging from 40 to 90% of patients, but the interpretation of results is hampered by non-systematic and short-term evaluations, with high heterogeneity in relation to age, severity of infection, follow-up and characteristics of the clinical evaluation. [8,9] Hence, this study was conducted to assess the pattern of covid-19 manifestations in group of patients visiting tertiary care hospital.

MATERIALS & METHODS

A total of 80 survivors of COVID-19 were enrolled in the present study. Complete medical history of all the patients was undertaken. Clinical and radiographic examination of all the patients was obtained. Information was collected through a telephonic interview and also by a questionnaire after the discharge from the hospital. Data was collected and results were analysed with the statistical analysis using SPSS software.

RESULTS

The subjects were in age group of 30 to 60 years. The mean age was 45.2 years and their mean BMI was 30.1 Kg/m^2. From the subjects with post covid symptoms25 (62.5%) were males and 15 (37.5%) were females. 22 (55%) of the patients were smokers. Fatigue (75%), dyspnoea (65%) and joint pain (55%) were the most common post COVID-19 manifestations found to be present. Tinnitus and anxiety were seen each of 30% of the patients. Headache, Pulmonary fibrosis and renal failure were seen in 8% , 10% and 5% of the subjects respectively. Overall, Post-COVID manifestations were seen in 86% of the patients.

Table 1:Demographic profile

Variable	Number	Percentage
Males	25	62.5
Females	15	37.5
Mean age (years)	45.2	
Mean BMI (Kg/m^2)	30.1	
Smokers	22	55

Table 2:Post-COVID manifestation

Post-COVID manifestation	Number	Percentage
Fatigue	30	75
Joint pain	22	55
Anxiety	12	30
Headache	8	20
Chest pain	6	15
Dyspnoea	26	65
Tinnitus	12	30
Pulmonary fibrosis	4	10
Renal failure	2	5
Myocarditis	2	5
Others	6	15

DISCUSSION

Postacute sequelae of COVID-19, also colloquially termed long COVID or long-haul COVID-19, is a clinical entity that has gained recognition as the pandemic continued into its second year in 2021. Although there is no consensus for a single definition, in general, postacute sequelae of COVID-19 refers to the persistence of symptoms for more than 3 months after the onset of symptoms. [10] The most common reported symptoms are shortness of breath and fatigue; however, an extensive list of symptoms involving multiple systems has been described. These symptoms include cognitive dysfunction (brain fog), mental disorders (depression, anxiety), headache, musculoskeletal complaints (myalgia, joint pain, chest wall pain), taste and smell disorders, chronic cough, alopecia, and insomnia, among many others. [11] In our study, the subjects were in age group of 30 to 60 years. The mean age was 45.2 years and their mean BMI was 30.1 Kg/m2. From the subjects with post covid symptoms 25 (62.5%) were males and 15 (37.5%) were females. 22 (55%) of the patients were smokers. Fatigue (75%), dyspnoea (65%) and joint pain (55%) were the most common post COVID-19 manifestations found to be present.

The available data regarding the incidence and evolution of postCOVID alterations are scarce and heterogeneous. Some reported the results of a structured telephone interview about symptoms after acute infection phase. They evaluated 100 patients (32 ICU), a mean of 48 days postdischarge from hospital; fatigue was the most commonly reported symptom by 72% and 60.3%, followed by breathlessness (65.6% and 42.6%) and psychological distress (46.9% and 23.5%), with a drop in EQ5D in 68.8% and 45.6%, ICU group vs hospital ward, respectively. [12,13] In our study, tinnitus and anxiety were seen each of 30% of the patients. Headache, Pulmonary fibrosis and renal failure were seen in 8% , 10% and 5% of the subjects respectively. Overall, Post-COVID manifestations were seen in 86% of the patients.

Regarding pulmonary dysfunction, one of the study reported that in 55 patients, 3 months after discharge, 64% had persistent symptoms and 71% radiologic abnormalities and 25% decreased diffusion lung capacity. [14] In another study of 57 patients evaluated 30 days after discharge, found decreased lung diffusion capacity (53%) and diminished respiratory muscle strength (49%).[15] Finally, van den Borst et al. showed that the lung diffusion capacity was below normal range in 42% (40/97) of discharged patients, 13 weeks after onset of SARS-CoV-2 symptoms; but only 57% of the invited patients attended to aftercare facility.[16]

CONCLUSION

Majority of the COVID-19 survivors exhibit manifestations similar to COVID-19. Hence; regular monitoring of COVID-19 survivors should be done.

REFERENCES

1. Clinical, biological and radiological features, 4-week outcomes and prognostic factors in COVID-19 elderly inpatients. Palich R, Wakim Y, Itani O, et al. Infect Dis Now. 2021;51:368–373.
2. Aging in COVID-19: vulnerability, immunity and intervention. Chen Y, Klein SL, Garibaldi BT, et al. Ageing Res Rev. 2021;65:101205.
3. COVID-19 sequelae in adults aged less than 50 years: a systematic review. Willi S, Lüthold R, Hunt A, et al. Travel Med Infect Dis. 2021;40:101995.
4. Long-COVID: an evolving problem with an extensive impact. Mendelson Mendelson, Nel J, Blumberg L, Madhi SA, Dryden M, Stevens W, Venter FWD. S Afr Med J. 2020;111:10–12.
5. Medium-term effects of SARS-CoV-2 infection on multiple vital organs, exercise capacity, cognition, quality of life and mental health, post-hospital discharge. Raman B, Cassar MP, Tunnicliffe EM, et al. EClinicalMedicine. 2021;31:100683

6. Li W., Moore M.J., Vasilieva N., et al. Angiotensin-converting enzyme 2 is a functional receptor for the SARS coronavirus. Nature. 2003;426(6965):450–454.
7. Del Rio C., Collins L.F., Malani P. Long-term health consequences of COVID-19. JAMA 2020;
8. Halpin S.J., McIvor C., Whyatt G., Adams A., Harvey O., McLean L., Walshaw C., Kemp S., Corrado J., Singh R., Collins T., O'Connor R.J., Sivan M. Postdischarge symptoms and rehabilitation needs in survivors of COVID-19 infection: a cross-sectional evaluation. J Med Virol 2020;
9. Carfì A., Bernabei R., Landi F. Gemelli against COVID-19 post-acute care study group. Persistent symptoms in patients after acute COVID-19. JAMA. 2020;324:603–605
10. Yomogida K. Post-acute sequelae of SARS-CoV-2 infection among adults aged ≥18 years — Long Beach, California, April 1–December 10, 2020. MMWR Morb Mortal Wkly Rep. 2021;70(37):1274–1277.
11. Yong SJ. Long COVID or post-COVID-19 syndrome: putative pathophysiology, risk factors, and treatments. Infect Dis (Lond) Engl.:1-18. doi:10.1080/23744235.2021.1924397
12. Tenforde M.W., Kim S.S., Lindsell C.J., Billig Rose E., Shapiro N.I., Files D.C., Gibbs K.W., Erickson H.L., Steingrub J.S., Smithline H.A., Gong M.N., Aboodi M.S., Exline M.C., Henning D.J., Wilson J.G., Khan A., Qadir N., Brown S.M., Peltan I.D., Rice T.W., Hager D.N., Ginde A.A., Stubblefield W.B., Patel M.M., Self W.H., Feldstein L.R. IVY network investigators, CDC COVID-19 response team, IVY network investigators. Symptom duration and risk factors for delayed return to usual health among outpatients with COVID-19 in a multistate health care systems network - United States, March-June 2020. MMWR Morb Mortal Wkly Rep. 2020;69:993–998
13. Carvalho-Schneider C., Laurent E., Lemaignen A., Beaufils E., Bourbao-Tournois C., Laribi S., Flament T., Ferreira-Maldent N., Bruyère F., Stefic K., Gaudy-Graffin C., Grammatico-Guillon L., Bernard L. Follow-up of adults with non-critical COVID-19 two months after symptoms' onset. Clin Microbiol Infect Off PublEur Soc Clin Microbiol Infect Dis 2020; .
14. Zhao Y.M., Shang Y.M., Song W.B., Li Q.Q., Xie H., Xu Q.F., Jia J.L., Li L.M., Mao H.L., Zhou X.M., Luo H., Gao Y.F., Xu A.G. Follow-up study of the pulmonary function and related physiological characteristics of COVID-19 survivors three months after recovery. EClinicalMedicine. 2020;25
15. Huang Y., Tan C., Wu J., Chen M., Wang Z., Luo L., Zhou X., Liu X., Huang X., Yuan S., Chen C., Gao F., Huang J., Shan H., Liu J. Impact of coronavirus disease 2019 on pulmonary function in early convalescence phase. Respir Res. 2020;21:163.
16. van den Borst B., Peters J.B., Brink M., Schoon Y., Bleeker-Rovers C.P., Schers H., van Hees H.W.H., van Helvoort H., van den Boogaard M., van der Hoeven H., Reijers M.H., Prokop M., Vercoulen J., van den Heuvel M. Comprehensive health assessment three months after recovery from acute COVID-19. Clin Infect Dis Off Publ Infect Dis Soc Am 2020;.