International Journal of Research in Medical Sciences
Chama YR et al. Int J Res Med Sci. 2021 May;9(5):1408-1411
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20211877

Original Research Article

An observational study of clinical sequelae in COVID-19 at ESIC MCH Hyderabad

Yadavendra Reddy Chama*, Sangeetha Chowdary

Department of Medicine, ESIC MCH Sanathnagr, Hyderabad, India

Received: 13 February 2021
Revised: 27 March 2021
Accepted: 30 March 2021

***Correspondence:**
Dr. Yadavendra Reddy Chama,
E-mail: chamareddy_07@yahoo.com

ABSTRACT

Background: COVID-19 a deadly pandemic affecting people in 2020 not going to leave them without sequelae. This study was aimed at studying the sequelae in patients affected with COVID-19.
Methods: This prospective observational study was done from July 2020 to October 2020 in ESIC MCH Hyderabad. The patients admitted with COVID-19 symptoms were treated and discharged. The patients on their follow up in OPD were asked about the symptoms persisting.
Results: A total of 100 patients 60 males and 40 females presented during the study period. Most of the patients had fatigue 75 (75%), myalgia 70 (70%), dyspnea 50 (50%), throat pain 30 (30%), edema 15 (15%), DVT 10 (10%), abdominal pain 5 (5%). Some of them developed DM due to use of steroids.
Conclusions: It was observed from the study that this deadly pandemic could have everlasting effect on the affected people though people recovered from the illness patients had complaints of fatigue, myalgias, dyspnea etc. Patients having lung complications aggravated leading to fibrosis. It was observed that patients with COVID infection had predilection for kidney failure, heart failure.

Keywords: DVT, DM, Fibrosis, Fatigue, Kidney failure, Myalgia

INTRODUCTION

A case of pneumonia of unknown origin was reported in Hubei Province, China in December 2019.[1] A novel enveloped betacoronavirus was the causative pathogen isolated from human airway epithelial cells now known as severe acute respiratory syndrome corona virus-2.[2]The disease was named COVID-19. It is the seventh member of the family of coronaviridae to infect humans.[3] The World Health Organization (WHO) declared it as a pandemic on 11th March, 2020 due to its widespread mortality and morbidity.[1,4-6] In those affected presence of pre-existing comorbidities determined the severity and outcome in an individual patient. The most important of these co-morbidities that have consistently emerged in studies from across the globe, are the patients age and sex.[11-17] Other important co-morbidities that adversely affect outcomes include pre-existing diabetes, obesity, hypertension, chronic lung disease and malignancy.[18-25] COVID-19 infection runs a mild course in younger patients who have no comorbidities, patients with comorbidities are disproportionately affected.

METHODS

The present observation study was done in Department of general medicine in ESIC MCH from July 2020 to October 2020. All patients who came to OPD following COVID-19 infection and completing their quarantine period were followed up and studied. Patients were asked regarding any symptoms persisting, if patients presented with dyspnea were advised chest x ray, ECG, 2 DECHO.

Further patients were done blood tests to rule out any coagulation abnormalities.

Inclusion criteria

All patients who tested positive for COVID 19 and patients who completed quarantine after testing positive were included in the study.

Exclusion criteria

Children less than 12 years, pregnant women, patients having coagulation abnormalities, lung complications prior to contacting COVID.

The statistical software SPASS was used to analyse the data and Microsoft word and excel have been used to generate graphs, figure etc. The present study was ethically approved.

RESULTS

Of all the patients studied 60 were males and 40 were females. In our study patients with complications were more in the age group 50-60 years.[25] In the study it was observed that patients had fatigue 75 (75%), myalgias 70 (70%), dyspnea 50 (50%), throat pain 30 (30%), edema 15 (15%), DVT 10 (10%), abdominal pain 5 (5%). The patients in whom sequelae were observed had comorbidities like HTN, DM. Some patients got readmitted with sequelae like dyspnea, lung complications, kidney failure and succumbed due to illness. the mortality observed was more in the age group>70 years with comorbidities. In Figure 1 there is a depiction of female preponderance with females 60 vs males 40 in the ratio M:F (2:3).

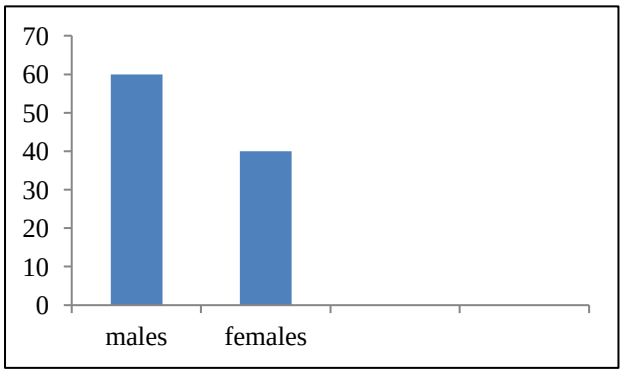

Figure 1: Gender distribution.

In Figure 2 the patients with COVID complications were more in the age group 50-60 years. In Figure 3 the patients with COVID sequelae symptoms fatigue was predominant. In Figure 4 the patients with comorbidities were depicted more in age group 60-70 years. In Figure 5 the mortality was depicted more in age groups >70years.

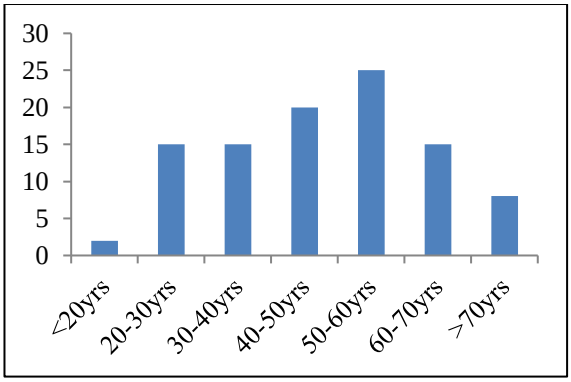

Figure 2: Distribution of age group.

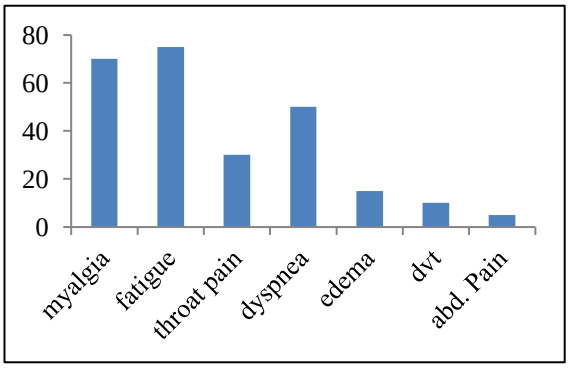

Figure 3: COVID sequelae symptoms.

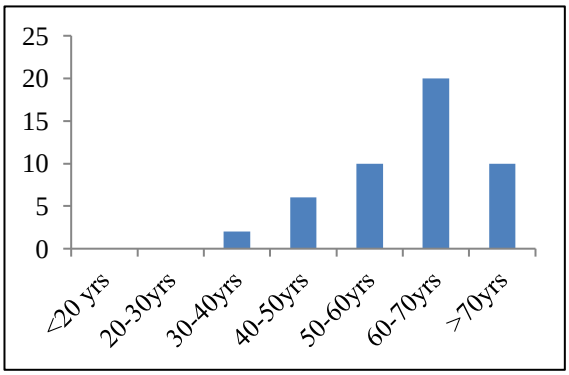

Figure 4: Comorbidities.

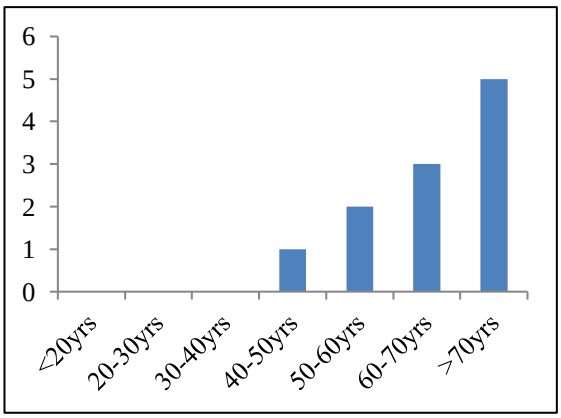

Figure 5: Mortality.

DISCUSSION

In our study we had male preponderance in the ratio 60:40 (3:2).it shows that male population is more affected with sequelae than females. Possible mechanisms for this sex predilection was explained by the postulate that the biological step required for viral infectivity of the SARS-CoV-2 virus is priming of the spike proteins by transmembrane protease serine 2 (TMPRSS2) which cleaves the Angiotensin converting enzyme-2 (ACE2) receptor.[12-17] Action of TMPRSS2 is enhanced by androgen, hence viral replication rate can be expected to be higher in males. Male susceptibility to the development of severe COVID-19 symptoms may be further enhanced by X-linked inheritance, since both the androgen receptor gene and the ACE2 genes are located on chromosome X. the patients affected in our study were more in the age group 50-60 years. It shows that age has predilection for sequelae.[7-11] Age is widely observed to be the most important factor for patients developing sequelae. Advanced age is associated with poor outcome in terms of sequelae, ICU admission and mortality. Death rates are directly co-related with advanced age. A recent study of 5700 patients in New York also showed that with increasing age there was an increase in the duration of hospital stay, complications, ICU requirement, death and readmission9. In our study sequelae were more in the patients with comorbidities in age group >70 years. It was observed that patients having comorbidities had development of sequelae. Further it was observed that patients with comorbidities in higher age groups had predilection for re admission, kidney failure, and mortality. It was observed in our study that patients came to OPD with complications of fatigue, myalgia, dyspnea. Some patients developed DM due to use of steroids.

Limitations

We followed up for a shorter span of time. Further our sample size was only 100 patients to generalize our results to a wider population.

CONCLUSION

As the SARS-Co-V-2 pandemic gathers speed across the globe our understanding of which groups of patients are most vulnerable and have predilection or developing sequelae have been crystallized. Knowing that elderly patients, males more than females, hypertensives, diabetics, cardiac patients, those from the BAME group, those with chronic underlying lung disease, and those with cancer are more vulnerable provides extremely important insights. Shielding such high risk groups as best as possible from the ravages of the virus, and working on strategies to improve outcomes in these high-risk patients, will continue to evolve as the pandemic unfolds. As outlined, several laboratory markers such as NLR, D-dimer, procalcitonin, cardiac troponin, CRP and pro-inflammatory interleukins can also help to predict the progression of the disease and predict poor outcomes. Thus by creating awareness about the complications of the virus and its predilection to affect organs after recovery in patients with comorbidities may decrease their outcome. Further it should be advocated to practice social distancing, sanitization and preventive measures to avoid perils of readmission and sequelae in older patients.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Chama YR, Chowdary S. An observational study of clinical sequelae in COVID 19 at ESIC MCH Hyderabad. Int J Res Med Sci 2021;9:1408-11.