

Long Term Effects of COVID-19 among RT-PCR Positive Bangladeshi Patients

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Abstract

Background: COVID-19 was an unknown disease previously. This pandemic has affected almost all countries of the world and creating a deadly experience to all. It leads to long term sequelae among many affected people with consequent loss of productivity and quality of life. This entity is called long COVID syndrome. The objectives of the present study is to find out the long term sequelae of COVID-19 patients.

Materials and methods: This was an observational study where a total of 56 patients of COVID-19 were recruited. Demographic data and long term sequelae were recorded from these patients. All the patients were confirmed cases of COVID-19 by RT-PCR. Prior consent from the patients and ethical clearance was taken. Data were analyzed by SPSS-20.

Results: Among 56 cases male was 31(55.4%) and female was 25(44.6%). Male to female ratio was 1.24:1. Age group distribution showed <20 years was 4(7.1%), 21-30 years was 10(17.9%) 31-40 years was 12(21.4%) 41-50 years was 14(25.0%) and 51-60 years was 16(28.6%) Regarding occupation majority were service holder 34(60.7%). Fifty two(92.9%) were from urban areas Among 56 cases 48(85.7%) took treatment at home for COVID-19. Regarding vaccination history 4(7.1%) got no vaccination 18(32.1%) took Astra-Zenaca, 12(21.4%) took Moderna Biotech and 22(39.3%) took Sinovac vaccine. Regarding analysis of postcovid sequelae among 56 cases 25(44.6%) had fatigue, 7(12.5%) had cough, 4(7.1%) had shortness of breath, 12(21.4%) had chest pain or tightness, 22(39.3%) had memory impairment, 8(14.3%) had insomnia, 22(39.6%) had joint pain, 8(14.3%) had muscle pain or headache, 8(14.3%) had palpitation and 16(28.6%) had minor psychiatric illness like, depression or anxiety.

Conclusion: Present study showed post COVID complications among significant number of COVID-19 patients. Thus COVID-19 is not only associated with loss of life but also with long term complications and loss of productivity that needs proper attention.

Key words: COVID-19; Long COVID; Sequelae.

Introductions

In December 2019 a new respiratory tract infecting agent emerged in Wuhan city of China, known as the coronavirus.¹ It was later named COVID-19. COVID-19 has now become a global pandemic. While the origin of the corona virus is still being investigated, current evidence suggests spread to humans occurred via transmission from wild animals illegally sold in the Huanan Seafood Wholesale Market.² WHO declared COVID-19 a global pandemic on 11 March 2020. Illness ranges in severity from asymptomatic or mild to severe, a significant proportion of patients with clinically evident infection develop severe disease. Human-to-human transmission via droplets as well as through contact with fomites act as routes of the virus spread. Among the infected populations 80% are either asymptomatic or have mild disease, people have been going to their workplaces and even traveling internationally.³ Nevertheless, even though the virus is causing mild disease in many, the course of illness may be severe, leading to hospitalization and even death in elderly or those with comorbid conditions.⁴ Long COVID, also known as post-acute sequelae of SARS-CoV-2 infection, post-acute sequelae of COVID-19 (PASC) chronic COVID syndrome (CCS) and longhaul COVID is a theorized condition, proposed to be characterized by long-term sequelae; persisting after the typical convalescence period of coronavirus disease 2019 (COVID-19).⁵ The exact nature of symptoms and number of people who experience long-term symptoms is unknown so far and varies according to the population being studied, the definition used and the time period used in the study. A preliminary survey by the UK Office of National Statistics estimated that approximately 10% of

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people who tested positive for SARS-CoV-2 experienced one or more symptoms for longer than 12 weeks.⁶ In Bangladesh there are still very minimum data in these context. So present study was conducted to explore the long covid symptoms among the patients who suffered from COVID 19.

Materials and methods

In this observational study, we included 56 cases of Reverse Transcription Polymerase Chain Reaction (RT-PCR) positive COVID-19 patients as confirmed cases. Data were collected between June to August 2021 from patients attending the Outpatient Department and private chamber with the history of RT PCR positive COVID at least 3 months ago. Patients personal phone number were collected and they were contacted over phone to find the sequelae of COVID. A structured questionnaire was used to collect the data and all patients were asked the questions clearly to collect the data. Eventually 56 cases were enrolled. Informed consent was obtained from every patient according the revised declaration of Helsinki. The protocol was approved by the ethical and scientific committee. Age, sex, etc demographic data, vaccine history, treatment options and long term symptoms etc were obtained. The statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 20.0 for Windows (IBM SPSS Armonk, NY, USA). Qualitative variables such as fever, cough etc. were expressed as frequency and percentage. Quantitative variables were expressed as mean \pm standard deviation.

Results

Among 56 cases male was 31(55.4%) and female was 25(44.6%). Male to female ratio was 1.24:1 (Table I). Age group distribution revealed <20 years was 4(7.1%) 21-30 years was 10(17.9%), 31-40 years was 12(21.4%), 41-50 years was 14(25.0%) 51-60 years was 16(28.6%) (Table II). Regarding occupation more were service holder 34(60.7%), 52(92.9%) were from urban areas and they had A+, B+ and O+ blood groups (Table III) Among 56 cases 48(85.7%) took treatment at home for Covid 19 (Table IV). Regarding vaccination history 4(7.1%) got no vaccination, 18(32.1%) took Astra-Zenaca, 12(21.4%) took Moderna Biotech and 22(39.3%) took Sinovac

vaccine (Table V). Regarding analysis of postcovid sequelae among 56 cases 25(44.6%) had fatigue, 7(12.5%) had cough, 4(7.1%) had shortness of breath, 12(21.4%) had chest pain or tightness, 22(39.3%) had memory problems, 8(14.3%) had insomnia, 22(39.6%) had joint pain, 8(14.3%) had muscle pain or headache, 8(14.3%) had fast heart beat, 16(28.6%) had depression or anxiety and new onset DM(7.1%) (Table VI).

Table I Gender variations

	Frequency	Percent (%)
Female	25	44.6
Male	31	55.4
Total	56	100.0

Table II Age groups

	Frequency	Percent (%)
<20 years	4	7.1
21-30 years	10	17.9
31-40 years	12	21.4
41-50 years	14	25.0
51-60 years	16	28.6
Total	56	100.0

Table III Demographic data

Data	Frequency	Percent (%)	
Occupations	Doctor	8	14.3
	Student	11	19.6
	Service	34	60.7
	Others	3	5.4
Locality	Rural	4	7.1
	Urban	52	92.9
Blood group	A+	27	48.2
	B+	10	17.9
	O+	19	33.9

Table IV Hospital care

	Frequency	Percent (%)
Admitted to hospital at isolation unit	8	14.3
Home treatment	48	85.7
Total	56	100.0

Table V Vaccination history

	Frequency	Percent (%)
Not vaccinated	4	7.1
Astra-Zenaca	18	32.1
Moderna Biotech	12	21.4
Sinovac	22	39.3
Total	56	100.0

Table VI Post COVID symptoms

Symptoms	Frequency	Percent (%)
Fatigue	25	44.6
Cough	7	12.5
Shortness of breath	4	7.1
Chest pain or tightness	12	21.4
Memory problems	22	39.3
Insomnia	8	14.3
Joint pain	22	39.6
Muscle pain or headache	8	14.3
Fast heart beat	8	14.3
Depression or anxiety	16	28.6
New onset DM	4	7.1

Discussion

In the present study among 56 cases male was 31(55.4%) and female was 25(44.6%). Male to female ratio was 1.24:1, it was similar to that reported by Huang et al and Chen et al which show 73.0% male predominance but higher than that reported by Wang et al (54.3%).^{7,1,8} This male predominance may have happened due to increased foreign travel by males for occupational or educational purposes as well as some genetic difference. Age group distribution revealed elderly population like 41-50 years was 14(25.0%), 51-60 years was 16(28.6%) were more affected than the younger one. Regarding occupation more was service holder 34(60.7%), 52(92.9%) were from urban areas and they had A Rh positive, B Rh positive and O Rh positive blood groups. Our socio-demographic findings, matched with that in Asia, e.g China (Median age: 47 years; 41.9% female), India (mean age 40.3 years, 66.7% male) and other reports from Bangladesh (43% were in the age range of 21 to 40 years, female: male ratio 1:2.33).⁹⁻¹¹ But studies from America (Median age, 63 years) and Europe (Median age, 67.5 years) showed higher age of patients but same male preponderance.^{12,10} Among 56 cases 48(85.7%) took treatment at home for COVID 19. Regarding vaccination history 4(7.1%) got no vaccination, 18(32.1%) took Astra-Zenaca, 12(21.4%) took Moderna Biotech and 22(39.3%) took Sinovac vaccine. Now Bangladesh is vaccinating its population in a rapid fashion and different generics of vaccine is being used. NICE defines post-COVID-19 syndrome as signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an

alternative diagnosis.⁶ It usually presents with clusters of symptoms, often overlapping, which can fluctuate and change over time and can affect any system in the body. Post COVID-19 syndrome may be considered before 12 weeks while the possibility of an alternative underlying disease is also being assessed. In our study we found different types of post COVID symptoms like 25(44.6%) had fatigue, 7(12.5%) had cough, 4(7.1%) had shortness of breath, 12(21.4%) had chest pain or tightness, 22(39.3%) had memory problems, 8(14.3%) had insomnia, 22(39.6%) had joint pain, 8(14.3%) had muscle pain or headache, 8(14.3%) had fast heart beat and 16(28.6%) had depression or anxiety. In a study of patients who had been hospitalized in Wuhan found that the majority still had at least one symptom after six months.⁵ Patients who had been more severely ill still showed severe incapacity in lung function. Among the 1733 patients who had been discharged from hospital and followed up about six months later, the most common symptoms were fatigue or muscle weakness (63%) sleep difficulties (26%) and anxiety or depression (23%). Some people suffer long-term neurologic symptoms despite never having been hospitalized for COVID-19, the first study of this population was published in March 2021.⁶ These findings are consistent with our study findings. In January 2021, a study in the UK reported that 30% of recovered patients were readmitted to hospital within 140 days and 12% of the total died. Many patients had developed diabetes for the first time, as well as problems with heart, liver and kidneys. In our study we also found new onset DM the mode of insulin failure was at that point unknown. In March 2021, the Indonesian Doctors Association, in a survey of 463 people, suggested that 63.5% of respondents self-reported lingering symptoms after SARS-CoV-2 infection. The present study shows fatigue and cough as the most commonly reported symptoms, followed by muscle pain and headache. NHS England has estimated that up to 5 June, more than 95000 patients had been admitted to hospitals across England with COVID-19 and it assumed 45% would need ongoing support. Figures from the UK COVID Symptom Study app which has more than four million regular users suggest that a significant number of people report symptoms for

a month and between 10% and 20% report complications for longer.¹ Many specialized clinics are now taking care of people who have persistent post COVID symptoms. Some people experiencing long COVID have formed groups on social media sites.

Limitations

Small sample size and short duration study.

Conclusions

COVID-19 causes long term complications and loss of productivity of those affected. This needs attention in the form of exercise and other rehabilitative measures. Further study needed to explore long COVID syndrome and manage the long covid symptoms in our patients.

Recommendations

Multicenter large scale study with nationally representative sample to explore the country scenario is recommended.

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Contributions of authors

NI-Conception, acquisition of data, drafting & final approval.

MAR-Data analysis, interpretation of data, drafting & final approval.

PKD-Conception, data analysis, drafting & final approval.

GM-Design, data analysis, critical revision & final approval.

AKMMA-Interpretation of data, critical revision & final approval.

Disclosure

All the authors declared no competing interest.

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