

Follow up Study on Outcomes of RT-PCR Positive Patients with COVID-19: A Descriptive Study

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Abstract

Background: A considerable part of coronavirus disease 2019 (COVID-19) patients eventually undergo long-lasting symptoms like weakness, breathlessness, myalgia, anxiety and few cognitive dysfunctions for several months after acute infection. As this virus may continue to spread, the follow-up of pulmonary infections with corona virus for extended period of time following involvement of many human systems as well.

Objective: To follow up effects of SARS-CoV2 on human body for comprehensive mitigation of all complications.

Methods: It is a descriptive type of cross sectional study. Purposive sampling technique was applied from the medical record of Combined Military Hospital (CMH) Dhaka from July 2020 to December 2020. Follow up the necessary datum which was possessed by telephone for the duration six months since the date of discharge by well-structured questionnaire and stored in Statistical Package for the Social Sciences (SPSS) v26 with proper editing and cleaning.

Results: Diverse profiles regarding RT-PCR positive cases differed widely during this research. Among 190 respondents, 179(94.21%) patients were symptomatic and 11(05.79%) were asymptomatic. Male patients had a higher portion 133(70.00%) compared to females 46(24.00%) patients among symptomatic groups. The average age of COVID-19 patients was 45.27±14.09. An association had been found between patients with or without clinical manifestations with the habit regarding smoking ($p<0.05$) and exposure ($p<0.05$). Maximum patients having symptoms had fever (78.21%) followed by cough (42.46%) and weakness (13.97%). The symptomatic group also experienced with headache (11.17%), breathlessness (13.41%), sore throat (8.38%), loss of smell (3.91%), diarrhea (7.26%) and vomiting (2.79%). Comorbidities like asthma (10.62%), hypertension (37.99%), diabetes mellitus (26.26%), chronic disease (2.79%) and others (7.82%) were marked in the symptomatic group. A non-significant ($P=0.702$) correlation was noticed within patients. The majority of the patients with manifestations noticed in age group of 18-50 years were 102(53.69%). Follow up of positive patients differed remarkably ($P>0.05$) among patients with or without clinical manifestations.

Conclusion: Outbreaks of SARS-CoV-2 affect a quite wide range of manifestations and durations. Post-COVID-19 condition should be addressed by global initiatives including healthcare professionals, researchers, methodologists, patients and caregivers for mitigation of complications.

Keywords: COVID-19, RT-PCR, CMH, SPSS, Comorbidity.

Introduction

The severe episode of coronavirus escalated globally.¹ Pathophysiological outcomes following corona virus infection revealed into various ways, frequently exposed along with pulmonary problems. Of late and update researches exhibited the most of the cases of various grades with corona virus might be sufferer for extended period and less number of cases also suffered due to sustained and prolonged outcome following convalescence. Almost 76 percent of corona virus cases were noticed to sustain along with minimum one medical problem after 06 months following corona disease. Pulmonary structures are the main prey of corona virus and maximum biological structures are in great threat of corona involvement.²

Subclinical pulmonary abnormalities might be affiliated with asymptomatic patients diagnosed with the help of CT scan and abnormal chests X-ray were in 15.50% of asymptomatic and 46.00% of symptomatic patients.³ COVID-19 is a great pandemic occurring with heavy fatality globally.⁴ Long-term Post-COVID-19 condition of health consequences remain unknown.⁵ Various complications effects from SARS-CoV-2 among many people having underlying different medical causes with immune-deficiency disorders.⁶

Materials and Methods

This retrospective descriptive cross-sectional study was conducted in CMH Dhaka from July to December at 2020. All RT-PCR positive COVID-19 patients selected purposively from medical record and experienced with follow-up over a period of six months after discharge from hospital for studying post-COVID-19 complications. Patients who did not give their verbal consent (four patients) and those died (six patients) during the telephone interview were excluded from this study. Data of 190 respondents were recorded in a well-structured questionnaire.

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Results

Table-I: Demographic information of COVID-19 positive patients (n=190)

Characteristics		Symptomatic patients n= 179(94.21%)	Asymptomatic patients n= 11 (05.79%)	Remarks
Sex	Male	133(70.00%)	06(03.36%)	p=0.151
	Female	46(24.00%)	05(02.64%)	
	Total	179(94.00%)	11(06.00%)	
Age group (in years)	18-30	22(11.58%)	05(02.63%)	Mean Age =45.27 SD=45.27±14.09
	31-50	83(43.69%)	05(02.63%)	
	51 & above	70(36.84%)	05(02.63%)	
	Total	175(92.11%)	15(07.89)	
History of Contact	Yes	13(06.85%)	5(02.63%)	p =0.001
	No	162(85.26%)	10(05.26%)	
	Total	175(92.11%)	15(07.89%)	
Smoking Status	Smoker	19(10.00%)	05(02.63%)	p =0.001
	Non-Smoker	160(82.11%)	06(05.26%)	
	Total	179(92.11%)	11(07.89%)	
Occupation of Patients	HCP	23(12.11%)	05(02.63%)	p =0.003
	Non-HCP	156(82.11%)	06(03.18%)	
	Total	179(94.22%)	11(05.78%)	

Table-II: Clinical features of COVID-19 RT-PCR positive patients (n=190)

Characteristics	Symptomatic patients (n=179) (95.79%)	Asymptomatic patients (n=11) (04.21%)	Remarks
Comorbidity Symptoms	Fever	140(78.21%)	0
	Headache	20(11.17%)	0
	Cough	76(42.46%)	0
	Breathlessness	24(13.41%)	0
	Weakness	25(13.97%)	0
	Sore throat	15(08.38%)	0
	Loss of smell	07(03.91%)	0
	Vomiting	05(02.79%)	0
	Diarrhea	13(07.26%)	0
	Asthma	19(10.62%)	0
	Hypertension	68(37.99%)	1(9.09)
	DM	47(26.26%)	0
	Chronic Disease	05(02.79%)	0
	Others	14(07.82%)	0

Table-III: Association between symptomatic/asymptomatic patients with different variables of COVID-19 patients(n=190)

Characteristics		Symptomatic patients (n=179) (94.21%)	Asymptomatic patients (n=11) (5.79%)	Total	p-value
Age Group	18-50 years	102(53.68%)	06(03.16%)	108(56.84%)	X ² =0.025 df=1 p=0.874
	51 years and above	77(40.53%)	05(02.63%)	82(43.16%)	
	Total	179((94.21%)	11(05.79%)	190(100%)	
Presence of Comorbidities	Yes	92(48.42%)	05(02.63%)	97(51.05%)	X ² =0.146 df=1 p=0.702
	No	87(45.79%)	06(03.16%)	93(48.95%)	
	Total	179(94.21%)	11(05.79%)	190(100%)	
Developed Complications	Yes	121(63.69%)	5(02.63%)	126(66.32%)	X ² =2.275 df=1 p=0.131
	No	58(30.53%)	6(03.15%)	64(33.68%)	
	Total	179(94.22%)	11(05.78%)	190(100%)	

Table-IV: Post COVID-19 complications among RT-PCR positive patients (n=190)

Characteristics	Symptomatic patients (n=179) (95.79%)	Asymptomatic patients (n=11) (04.21%)	Remarks
Asthma	18(10.06%)	02(18.18%)	
Hypertension	54(30.17%)	01(09.09)	
DM	29(16.20%)	01(09.09)	
Chronic Disease	03(01.68%)	00	
Tiredness	12(06.70%)	00	
Headache	03(01.68%)	00	
Arthralgia	03(01.68%)	01(09.09)	

Table-V: Association between comorbidities with age group of COVID-19 patients (n=190)

Characteristics	Presence of Comorbidities		Total	Remarks	
	Yes	No			
Age Group	18-50 years	37(19.47%)	71(37.37%)	108(56.84%)	X ² =28.242 df=1 p=0.00
of COVID-19	51years and above	60(31.58%)	22(11.58%)	82(43.16%)	
Patients	Total	97(51.05%)	93(48.95%)	190(100%)	

Discussion

The COVID-19 is a highly contagious disease.⁷ Total 190 COVID-19 RT-PCR positive patients (mean age±SD=45.27±14.09 years) had been incorporated here in the research, at which majority cases had manifestations 179(94.21%). Table-I shows the sex ratio between patients. An association was revealed with smoking status (p=0.001) and contact history (Table-I).⁸ Maximum patients with clinical symptoms noticed in patients with clinical manifestations of coronavirus disease 2019 was fever (78.21%) succeeded by cough (42.46%), weakness (13.97%), breathlessness (13.41%), headache (11.17%), sore throat (15%), diarrhea (07.26%), loss of smell (03.91%) and vomiting (02.79%). Systematic review made almost the equal prevalence's regarding corona disease manifested with different degree of body temperature both in SARS and MERS, though coughing problem had more in corona disease than middle east respiratory syndrome (MERS).⁹ Earlier researches of many researches revealed along with alimentary problems were uncommon.¹⁰⁻¹²

Multiple chronic conditions such as respiratory difficulties that is dyspnea (10.62%), diabetes (26.26%), high blood pressure (37.99%), chronic disease (2.79%) and others (7.82%) had been marked among patients with manifestations differentiated with cases without clinical manifestations where only hypertension (9.09%) was found (Table-II). An elevated occurrences and frequencies regarding corona patients had been noticed among cases of 18 years to 50 years old. Aged persons are very much prone to COVID than younger.¹³ Anyways morbidity and mortality vary in corona disease in case to case basis.¹⁴ Pulmonary difficulties of various types might be continued in lot of different cases.¹⁵

Throughout the epidemic upsurge of SARS-CoV-1, an episode of diabetes patients were generally noticed among cases neither having raised neither blood glucose level nor taking any medical drugs prior to corona infection.¹⁶ This study revealed highest 30.17% patients with hypertension and 9.09% patients of silent hypertension without any complain. Here the result of this study result reveals COVID patients packed with diarrhea (7.26%), loss of smell (3.91%) and vomiting (2.79%) than the asymptomatic patients (Table-II). Fever is the most important manifestations of SARS-CoV-2 accompanying headache, cough and the inability to detect sweetness, sourness, bitterness, saltiness etc.¹⁷

Other study explored around ten percent outdoor patients had breathing discomfort 04 months following onset of disease.¹⁸⁻¹⁹ Nevertheless, compare with earlier studies, this research recognized a lot of big manifestations among patients with respiratory problems.⁵ Among the admitted patients, greater than 1/3rd was female; 14.00% were health care providers and 86.00% were non-healthcare providers (Table-I). The study found that more than half of the patients presented with underlying comorbidities (Table-III).

Conclusion

Post-COVID-19 complications may become a major public health burden. Previous research in various medical fields has demonstrated the importance and usefulness of core outcome set in both research and clinical practice for the post-COVID-19 condition in different geographical locations. The joint initiative requires input from all relevant partners including healthcare professionals, researchers, methodologists, patients and care-givers. The outcome of this research will be helpful for the management of COVID-19 and raise awareness of the patients to seek health care for any conditions they may develop after recovered from COVID-19.

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