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STUDY OF COMPLICATIONS IN RECOVERED COVID PATIENTS IN A TRIBAL BELT OF SOUTHERNMOST PART OF RAJASTHAN, INDIA.

Community Medicine

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ABSTRACT

Introduction: Many COVID– 19 cases have suffered from different symptoms after recovery which are different from COVID– 19 symptoms. Some of them were lasted for a long time which required long– term monitoring. The study aimed to study post COVID manifestations in recovered COVID patients. **Methodology:** It was a cross sectional study, conducted at district hospital which is attached to the Government Medical College, Dungarpur. Retrospective data collection of recovered COVID– 19 patients was started in January 2021. **Results:** Study included 730 recovered COVID– 19 subjects, 461 of them were males and 269 females. Median age was 44 years (IQR 30-58 years). Symptoms after recovery were weakness and fatigue (39.2% and 30.8), loss of interest in previous pleasurable activities (12.3%), Irritation (12.2%), joint pain (10.4%), etc. **Conclusion:** All subjects recovered from COVID– 19 should undergo long– term monitoring for evaluation and treatment of symptoms and conditions that might be precipitated after recovery from the new coronavirus infection.

KEYWORDS

COVID– 19, post COVID manifestations, complications

INTRODUCTION:

Coronavirus disease 2019 (COVID– 19) is a serious respiratory disease that resulted from infection with a new coronavirus (SARS– CoV– 2). Patients suffered from different symptoms like fever, dry cough and fatigue which is mild in about 80% of cases, but the severity of the case may progress to develop a respiratory distress or respiratory failure, and hence, the need for intensive care unit (ICU) will be increased.[1] Most of the infected patients have recovered from the disease, this recovery could be confirmed by another PCR or by the absence of the symptoms for several days. However, many cases have suffered from different symptoms after recovery from the disease which are different from COVID– 19 symptoms.[2] Post– recovery manifestations were also studied after the severe acute respiratory syndrome (SARS) attack in 2003 reflecting many symptoms experienced by studied subjects such as fatigue, myalgia, depression and weakness. Some of these manifestations were chronic and lasted for a long time which required long– term monitoring.[3] Hence, the current study investigated the post– COVID– 19 manifestation in recovered COVID patients of Dungarpur district of Rajasthan, which has predominantly tribal population.

AIMS AND OBJECTIVES:

To study the post COVID complications in recovered COVID patients of Dungarpur district of Rajasthan, India.

METHODOLOGY AND STATISTICAL ANALYSIS:

Current study was done in dedicated COVID hospital of Dungarpur district of Rajasthan in India, which has more than 70% tribal population. It was a cross sectional study, conducted at district hospital which is attached to the Government Medical College, Dungarpur. Data collection was started in January 2021. Total number of enrolled study subjects were 940, as per the available data of recovered COVID 19 patients from the hospital. The study subjects then telephonically contacted and explained about study procedure. After taking verbal consent from the study participants information was recorded regarding post COVID complications, using a pre-tested semi-structured questionnaire They were screened for the post COVID symptoms over the phone due to COVID situation. Only the patients who having significant health problems were asked to come to the hospital, where they were examined and if needed investigations and treatment was done as per the protocol. Out of 940 enrolled subjects, 730 were included for the study as per the inclusion and exclusion criteria.

Data was entered in Ms excel. Frequency tables were formed and analysed with appropriate statistical tests using SPSS 21.

Ethical consideration

1. Verbal consent was taken from the study subjects.
2. No pressure or coercion was exerted on subjects for participation in the study.
3. Confidentiality and privacy were ensured at all stages of the study period.
4. Subjects were free to leave the study at any time and no questions were asked. They were not debarred from getting any medical services from the hospital.
5. The data collected was used for the study purpose only.
6. Study participants were counselled regarding post COVID care.

RESULTS:

Out of total 940 recovered patients till January 2021, the study involved 730 recovered COVID– 19 subjects, 461 of them were males and 269 females. Age of involved subjects expressed as median and IQR that was 44 years and IQR 30-58 years. Regarding other comorbidities, 159 (21.8%) of all subjects have known history of other illnesses, like hypertension, diabetic, thyroid etc. The severity of COVID– 19 symptoms was divided into three categories, first is the mild cases they expressed 72.2%, the second category was the moderate cases that received oxygen therapy and they represent 22.7%, the third category was the severe cases that required ICU admission and this category represent a small percent (5.1%). (Table 1) The median duration of COVID disease was 7 days. (IQR 5-9 days)

Table. 1. Demographic data of recovered COVID 19 patients:

			N= 730 (%)
Age	≤ 25 years		130 (17.8)
	26 to 50 years		322 (44.1)
	51 to 75 years		261 (35.8)
	More than 75 years		17 (2.3)
Gender	Male		461 (63.2)
	Female		269 (36.8)
Religion	Hindu		711 (97.4)
	Muslim		19 (2.6)
Disease severity	Mild		527 (72.2)
	Moderate (oxygen therapy)		166 (22.7)
	Severe (ICU)		37 (5.1)
Smoking	Yes		63 (8.6)
	No		667 (91.4)
Comorbidities	No comorbidities		571 (78.2)
	Any comorbidity presents 159* (21.8)	Diabetes	97 (13.3)
		Hypertension	77 (10.5)

		Thyroid disorders	8 (1.1)
		Coronary artery disease	5 (0.7)
		Chronic obstructive pulmonary disease	3 (0.4)
		Carcinoma neck	1 (0.1)
		Known case of depression	1 (0.1)
Duration of COVID disease	≤ 5 days		235 (32.2)
	6 to 10 days		401 (54.9)
	11 to 15 days		80 (11.0)
	More than 15 days		14 (1.9)
Post COVID symptoms	Present		381 (52.2)
	Absent		349 (47.8)

*Percentages are not mutually exclusive.

Analysis of post– COVID manifestations revealed that more than 50% of all subjects some kind of symptoms after recovery. Most subjects suffered from weakness and fatigue (39.2% and 30.8), loss of interest in previous pleasurable activities (12.3%), Irritation (12.2%), joint pain (10.4%), headache (9.7%), etc. (Table 2)

Regarding nutritional support, almost all subjects were receiving multivitamins (natural or pharmaceutical products) during the disease.

Table 2. Characterization Of Post– covid– 19 Manifestations

Manifestations	N	%
Fatigue	225	30.8
Weakness	286	39.2
Cough	55	7.5
SOB	36	4.9
Headache	71	9.7
Fever	13	1.8
Joints pain	76	10.4
Chest pain	8	1.1
High BP	15	2.1
Low BP	23	3.2
Anxiety	67	9.2
Loss of memory	59	8.1
Low mood	70	9.6
Loss of interest in previous pleasurable things (Anhedonia)	90	12.3
Sleep disturbance	63	8.6
Irritation	89	12.2
Menstrual disturbance	9 females out of 269	2.6
Sexual dysfunction	2	0.3

Regarding nutritional support, almost all subjects were receiving multivitamins (natural or pharmaceutical products) during the disease.

Incidence of post COVID symptoms were high in subjects who had moderate and severe disease. Chi square test was applied and the results were also found to be statistically significant. (Table 3)

Table. 3: Comparison of Disease severity with post COVID symptoms:

Post COVID symptoms	Mild N= 527 (%)	Moderate N=166 (%)	Severe N=37 (%)	P- value
Overall post COVID symptoms	216 (41.0)	128 (77.1)	37 (100.0)	< 0.0001
Fatigue	134 (25.4)	64 (38.6)	27 (73.0)	< 0.0001
Weakness	165 (31.3)	92 (55.4)	29 (78.4)	< 0.0001
Cough	30 (5.7)	17 (10.2)	8 (21.6)	0.001
Shortness of breath	20 (3.8)	10 (6.0)	6 (16.2)	0.003
Headache	40 (7.6)	15 (9.0)	16 (43.2)	< 0.0001
Fever	5 (0.9)	5 (3.0)	3 (8.1)	0.006#
Jo410756877438in t pain	40 (7.6)	14 (8.4)	22 (59.5)	< 0.0001
Low BP	8 (1.5)	4 (2.4)	11 (29.7)	< 0.0001
Anxiety	29 (5.5)	22 (13.3)	16 (43.2)	< 0.0001
Loss of memory	32 (6.1)	18 (10.8)	9 (24.3)	< 0.0001
Low mood	36 (6.8)	26 (15.7)	8 (21.6)	< 0.0001
Loss of interest in previous pleasurable things	34 (6.5)	41 (24.7)	15 (40.5)	< 0.0001
Sleep disturbance	33 (6.3)	22 (13.3)	8 (21.6)	< 0.0001
Irritation	41 (7.8)	44 (24.7)	7 (18.9)	< 0.0001

*Chi square test was applied, # Fischer's exact test was used

DISCUSSION:

Post– COVID– 19 manifestations were recorded in more than 50% of the recovered subjects, with a wide range of symptoms such as weakness and fatigue (39.2% and 30.8), loss of interest in previous pleasurable activities (12.3%), Irritation (12.2%), joint pain (10.4%), headache (9.7%) etc. The study participants were also asked about feeling of hallucination, delusion and suicidal thoughts or attempts, but all these symptoms were absent in them. A similar study done by Kamal et all, most of the subjects recovered from COVID– 19 experienced several manifestations after the last negative PCR which could be mild symptoms such as fatigue, headache or more critical manifestations like pulmonary fibrosis, stroke and myocarditis. The most reported symptoms were fatigue, anxiety, joint pain and headache. The severity of post– COVID– 19 manifestations was correlated to the severity of the infection which also was related to the presence of comorbidities.[4] Post– viral infection syndrome was previously reported after SARS.[5,6] These COVID– 19 manifestations in recovered participants persisted with all subjects for more than 10 days from the last negative PCR. The severity of COVID– 19 was classified into three categories as follow; mild cases that had controllable symptoms and have been treated without the need for oxygen therapy, moderate cases which suffered from difficult breathing and needed oxygen therapy and severe cases that had been hospitalised in ICU. The relation between severity of COVID– 19 showed a strong link between the presence of post COVID symptoms. Some basic investigations were also done for the participants who came to the hospital like X-ray, ECG and CBC (complete blood count) if required. In patients who had shortness of breath, some of them showed signs of mild pneumonitis in X ray and sinus tachycardia on ECG. As per the CBC reports, 30 patients had mild anaemia and 23 patients had moderate anaemia. All of them were given appropriate treatment as per the protocol. The most reported manifestation for this study was fatigue and weakness which also reported by Tansey et al after SARS in 2003.[7] Fatigue persisted with recovered subjects from SARS for several months, as subjects were monitored every 3 months, more than 50% of subjects were suffering from fatigue each time.[7] For subjects recovered from COVID– 19, negative PCR is not the end of patient monitoring, continuous and long– term monitoring of the subjects is recommended for evaluation of post– COVID– 19 manifestation, and early intervention with the critical signs. Also, the need for continuous counselling with the subjects is very important not only for maintaining good adherence to the medications, but also for detection of early warning signs of developing serious manifestations. Adherence to medications has a beneficial effect on patient's outcomes.[4,8]

CONCLUSION:

Most of the subjects recovered from COVID– 19 experienced several manifestations after the last negative PCR which could be weakness and fatigue, loss of interest in previous pleasurable activities, Irritation, joint pain and headache etc. The presence of post– COVID– 19 manifestations was correlated to the severity of the infection. The post– COVID– 19 manifestation is largely similar to the post– SARS syndrome. All subjects recovered from COVID– 19 should undergo long– term monitoring for evaluation and treatment of symptoms and conditions that might be precipitated after recovery from the new coronavirus infection.

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