



A STUDY ON PERSISTENT SYMPTOMS OF ACUTE COVID-19 IN RURAL PATIENTS

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ABSTRACT **Background:** Long Covid is the name used to describe symptoms of Covid-19 that persist beyond the acute illness. People with long Covid experience a confusing range of persistent and fluctuating symptoms including cough, breathlessness, fever, sore throat, chest pain, palpitations, cognitive deficits, myalgia, neurological symptoms, skin rashes, and diarrhoea. **Methods:** The present study consists of 215 patients recovered from acute covid-19 and having persistent symptoms after a month of diagnosis of covid-19 from rural area of villages of Metpally and Ibrahimpatnam of Jagityal district of Telangana state. Data on all clinical characteristics was collected from the study subjects. In particular, data on specific symptoms potentially correlated with covid-19 were obtained using a standardized questionnaire. **Results:** Our results showed persistent fatigue (4.58%), muscle pain, skin rash (1.86%), headache, stomach pain (1.39%), persistent dry cough and sleep disturbances (0.46%) in the patients recovered from post-acute covid-19 from the rural areas of Metpally and Ibrahimpatnam of Jagityal district of Telangana state. **Conclusion:** Persistent symptoms are diverse in nature as seen in acute Covid-19. Such multisystem involvement requires a holistic approach to management of long-covid, especially from rural areas.

KEYWORDS : Covid-19, Persistent symptoms, Rural patients, Fatigue.

Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the pathogen responsible for coronavirus disease 2019 (COVID-19), has caused unprecedented morbidity and mortality globally (Dong et al 2020) and still counting. Early reports suggest that after infection of SARS-CoV-2 the residual effects such as fatigue, dyspnea, chest pain, cognitive disturbances, arthralgia decline quality of life of the patients [Carfi et al 2020, Tenforde et al 2020, Huang et al 2021].

Long Covid is the name used to describe symptoms of Covid-19 that persist beyond the acute illness. The frequency and patterning of persistent symptoms after Covid-19 is confronted [Alwan 2020]. According to mainstream medical opinion persistence of symptoms post recovery from Covid-19 is common in people with conditions such as asthma, diabetes and autoimmune disorders. Although they are also known to occur in patients without any pre-existing conditions [Carfi et al 2020, Halpin et al 2020, Tenforde et al 2020], and in people who were admitted to hospital [Tenforde et al 2020].

There has been little information on people who were not hospitalised and it is even likely that a prolonged illness may be more common in those whose acute illness was less severe. There is lack of information on symptoms that persist after recovery from covid-19 in rural patients. Taking this into account, the present study was taken up to assess the persistent symptoms of covid-19 in rural patients who were recovered from covid-19.

Materials and Methods

The present study consists of 215 patients recovered from acute covid-19 and having persistent symptoms after more than one month of diagnosis of covid-19 from rural area of Metpally and Ibrahimpatnam of Jagityal district of Telangana state. Data on all clinical characteristics was collected from the study subjects. In specific, data on specific symptoms actually correlated with covid-19 were obtained using a standardized questionnaire. Information from the Patients on the presence or absence of symptoms during the acute phase of covid-19 and whether each symptom continued at the time of enrolment in the study was collected. Consent was obtained from all the participants after explaining the purpose of the study in their mother tongue.

RESULTS

Table 1. Distribution of study subjects based on Age and Sex

Parameter	No. of Covid patients (N=215)			
		Males (109)	Females (106)	Total (215)
Age	Below 15 years	1(0.9%)	0	1(0.46%)
	15-30 years	27(24.8%)	29(27.3%)	56(26%)
	31-45 years	47(43.1%)	55(51.9%)	102(47.4%)
	46-60 years	33(30.3%)	22(20.8%)	55(25.6%)
	Above 60 years	1(0.9%)	0	1(0.46%)

Table 2. Persistent symptoms of covid-19 in patients from rural areas of Telangana

Parameter	Symptoms of covid-19 patients		Persistent illness of covid-19 patients	
	No. of Covid patients (N=215)	Percentage (%)	No. of Covid patients (N=215)	Percentage (%)
Muscle pain	13	6.04%	4	1.86%
Stomach pain	5	2.32%	3	1.39%
Skin rash	4	1.86%	4	1.86%
Persistent dry cough	64	29.76%	1	0.46%
Sleep disturbances	57	26.51%	1	0.46%
Persistent fatigue	19	8.83%	6	4.58%
Reduced smell	164	76.27%	0	0
Reduced taste	169	78.6%	0	0
Headache	9	4.18%	3	1.39%

The present study consists of 215 patients recovered from acute covid-19. Out of 215 patients 109 (50.69%) were males and 106 (49.31%) were females. Majority of the cases were in the age group of 31-45 years (47.4%), followed by 15-30 years (26%) and 46-60 years (25.6%) in both the genders (Table 1). During covid-19 infection the major symptoms observed in the study group were reduced taste (78.6%) and reduced smell (76.27%) followed by persistent dry cough (29.76%), sleep disturbances (26.51%), persistent fatigue (8.83%),

muscle pain (6.04%), headache (4.18%), stomach pain (2.32%) and skin rash (1.86%). After recovery from covid-19 i.e., post covid reduced taste and smell were not observed in any of the patients. However, persistent fatigue (4.58%), muscle pain, skin rash (1.86%), headache, stomach pain (1.39%), persistent dry cough and sleep disturbances (0.46%) were observed in the patients after recovery from post-acute covid-19 (Table-2).

Discussion

People with long Covid experience a confusing range of persistent and fluctuating symptoms including cough, breathlessness, fever, sore throat, chest pain, palpitations, cognitive deficits, myalgia, neurological symptoms, skin rashes, and diarrhoea [Greenhalgh et al 2020, Carfi et al 2020, Arnold 2020, Goertz et al 2020, Vaes et al 2020]. Cellular damage, a robust innate immune response with inflammatory cytokine production, and a pro-coagulant state induced by SARS-CoV-2 infection may contribute to these sequelae (McElvaney et al 2020, Sungnak et al 2020, Tang et al 2020). People with persisting symptoms appear to fall into three broad categories. Firstly, people who were initially hospitalised with acute respiratory distress syndrome (ARDS) and now have long-term respiratory symptoms dominated by breathlessness. Second, people who may not have been hospitalised initially but who now have a multisystem disease with evidence of cardiac, respiratory, or neurological end-organ damage manifesting in a variety of ways. Third, people who have persisting symptoms, frequently but not always dominated by fatigue, with no evidence of organ damage. The cause of persisting symptoms is unknown, but possibly may involve several disease mechanisms including an inflammatory reaction with a vasculitic component [Tay et al 2020, Libby et al 2020]. Documented post-acute sequelae include myopericarditis, heart failure, arrhythmias, and thromboembolic complications including myocardial infarction, stroke and venous thrombosis [Puntmann et al 2020, Mitrani et al 2020].

According to Gareth (2020) the most commonly reported ongoing symptoms of long covid regardless of hospitalisation status were fatigue (98%), muscle ache (88%), shortness of breath (87%), and headache (83%) (Gareth 2020). However, in our study persistent fatigue (4.58%), muscle pain, skin rash (1.86%), headache, stomach pain (1.39%), persistent dry cough and sleep disturbances (0.46%) were observed in the patients after recovery from post-acute covid-19. In long covid fatigue is a common persisting symptom regardless of severity of the acute stage of covid-19. Fatigue is more profound than being overtired; it is unrelenting exhaustion and a continuous state of lethargy that reduces a person's energy, motivation, and concentration. Systematic study of sequelae after recovery from acute COVID-19 is much needed in the rural areas to develop an evidence-based multidisciplinary team approach for caring for these patients, and to inform further research priorities.

Conclusion

Persistence of symptoms after recovery from covid-19 infection is an increasingly recognised problem being faced globally. Persistent symptoms are diverse in nature as seen in acute Covid-19. Such multisystem involvement requires a holistic approach to management of long-covid, especially from rural areas. Planning is urgently required to cope up with long covid in rural areas and to ensure that the rural public health service is ready and able to respond. Further studies with larger sample size are warranted in the rural population to provide better health care services and management of long covid.

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