

EVALUATION OF CLINICAL FEATURES OF COVID-19 AND OUTCOME OF HOME MANAGEMENT

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ABSTRACT

Background: Along with control measures, the awareness of disease pattern and consideration of home management might help in decreasing the patient burden on health care facilities. The objectives of study were to evaluate the clinical presentations of COVID-19 among the patients and assess the outcome of home management.

Design: Descriptive observational study.

Place and Duration of study: Different areas of Rawalpindi and Islamabad, conducted from May to November 2020.

Patients and Methods: A self-designed validated proforma was used to collect personal and clinical data from PCR positive COVID-19 patients. It included the information about city of residence, age, sex, exposure to COVID-19 patient, comorbidities, clinical symptoms, radiologic findings, laboratory findings, complications, treatment, and clinical outcome. The data were processed by SPSS 25 and the descriptive statistical values of the variables were calculated.

Results: Among the 100 study participants most of the patients were young adults in the 21-30 years age group. The symptoms were present in 88% of patients. The most common symptoms were fever, body aches, fatigue and sore throat. The comorbidities including hypertension, diabetes mellitus, asthma, musculoskeletal, gastrointestinal and cardiac disorders were present in 35%. All of the patients were quarantined at home but 13% were hospitalized later. The patients using Azithromycin were 55%, analgesics 69%, vitamin supplements 50%, herbal qahwas 50% and special diet 37%. About 73% of patients focused on prayers and supplications. The patients cured after home quarantine were 87%. After hospitalization, 9% were cured and 4% died.

Conclusion: The patients with any comorbidity were the candidates of severe disease. Home quarantine, boosting of immunity and faith were found to be the effective measures for recovery from the disease.

Keywords:

clinical features, COVID-19, outcomes, SARS-CoV-2, treatment

INTRODUCTION

The COVID-19^{1,2} pandemic caused by SARS CoV-2³ started in December 2019 at Wuhan (China).^{4,5} The Coronavirus family members cause diseases in mammals and birds like cows, pigs, bats and chickens. SARS CoV-2 is genetically similar to bat coronaviruses, and shares about 79% and 50% of its genetic sequences with the SARS and MERS viruses respectively.³ The seven Corona virus strains transmitted by respiratory aerosols cause a significant percentage of common colds in human adults and

children, particularly during winter and spring seasons. It is characterized by rhinorrhea, scratchy sore throat, fever and swollen adenoids and may last for several days with no sequelae. In addition to pneumonia and viral or secondary bacterial bronchitis in some cases, the strains can also lead to severe diseases like Severe Acute Respiratory Syndrome (SARS), characterized by fever, cough, dyspnea, chills, rigors, headache, leukopenia, thrombocytopenia; Atypical pneumonia, kidney failure and even death in elderly above 50 years age. The strains infecting humans led to global pandemic by person to person spread e.g. between family members and health care workers.⁶ The incubation period is 2-14 days, median 5-6 days.^{7,8}

The global emergency was declared after the emergence of COVID-19 that inflicted serious health and economic burdens. The various reasons suggested for its spread

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into different countries with different pace include geographical, social, religion and genetic factors⁷. The low incidence of disease and death rate in Pakistan could be due to increased immunity by endemic malaria and tuberculosis, BCG vaccination, high environmental temperature and genetic predisposition^{8,9}, as compared to other countries particularly Europe and United States of America.¹⁰

The study of disease pattern is important to deal with the pandemic amicably along with extensive precautionary and control measures to manage the disaster. The awareness of clinical features help in saving the vulnerable group of children, elderly people and health care workers. For Quarantine of suspected patients and their isolation led to increased patient burden on health care facilities. This aroused the need of home management. The study aimed at assisting the local authorities and clinicians in better management of patients and prevention of disease progression through increased awareness about the clinical features and course of disease. The objectives of study were to evaluate the clinical presentations of COVID 19 among the patients in twin cities of Rawalpindi and Islamabad and to assess the outcome of home management of the disease.

METHODOLOGY

It was a survey based descriptive study, conducted on patients from different areas of Rawalpindi and Islamabad, during the period from April to November 2020 after the approval of institutional review committee. The patients were randomly selected for the study and inclusion criterion was positive SARS CoV-2 PCR test, with or without symptoms or history of exposure to infected patient. The patients who were being diagnosed on the basis of positive corona antibodies, mentally handicapped or pregnant female were excluded. A self-designed validated proforma was used to collect clinical data from Covid-19 patients or the responsible surrogate in case of children and hospitalized patients. They were contacted over phone, explained about research and interviewed after getting the verbal consent. The data were obtained and recorded in the proforma. The data included patient's personal information, city, history of exposure, presence of medical comorbidities, clinical symptoms, radiologic and laboratory findings, complications, treatment, and clinical outcome of patients. The data were processed by SPSS 25 and the descriptive statistical values of the variables were calculated. The p value of <0.5 was

considered significant.

RESULTS

Out of total 100 SARS CoV-2 PCR positive patients, 41.6% were from Islamabad and 58.4% from Rawalpindi, with male to female proportion of 53:47. The patients were divided in seven age groups. Group 1(1-10), Group 2(11-20), Group 3(21-30), Group 4 (31-40), Group 5 (41-50), Group 6 (51-60) and Group 7 (above 60) the frequency of patients in different age groups are shown in Fig. 1.

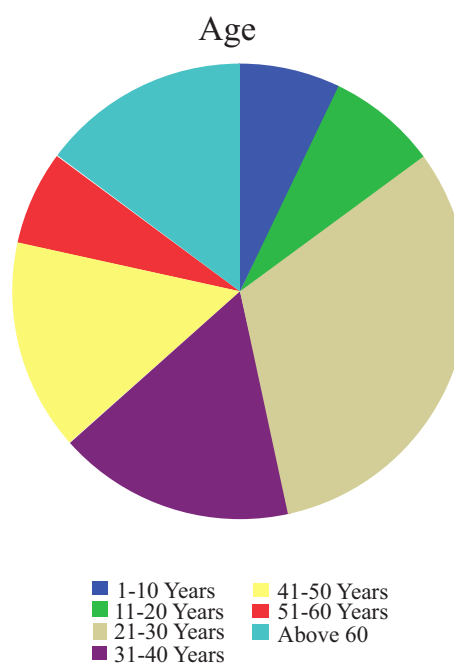


Fig. 1 The frequency of patients in different age groups

The swab samples for SARS CoV-2 PCR testing were taken from oropharynx in 18%, nasopharynx in 50% and both nasopharynx and oropharynx in 32% patients. About 49% were tested for SARS CoV-2 PCR because of symptoms, 24% had history of contact with corona patient, 18% had both disease symptoms and contact history and 3% were care givers. The persons tested for miscellaneous reasons (health care worker, job requirement or rejoining colleges etc.) were 6%. The patients with PCR test done once were 24%, twice 45%, thrice 26% and four times were 5%.

The symptoms were present in 67% patients before diagnosis by positive PCR test, 21% after a positive PCR test, while 12% were asymptomatic. The most common symptoms were fever, body aches, fatigue and sore throat. The frequencies of different symptoms are shown in table I.

Table I: The frequencies of symptoms present in COVID-19 patients. (n = 100)

Symptoms	Frequency	Symptoms present	Frequency
Fever	66%	Respiratory distress	4%
Body aches	44%	Vomiting	3%
Fatigue	44%	Rash	2%
Sore throat	42%	Vertigo	1%
Cough	37%	Psychologic Symptoms	46%
Ageusia	33%	Irritability	25%
Headache	32%	Sadness	23%
Anosmia	26%	Hopelessness	12%
Diarrhea	22%	Recurrent thoughts	9%
Rhinorrhea	21%	Social withdrawal	9%
Dyspnea	18%	Crying spells	9%
Dizziness	13%	pleasure Lost in doing	9%
Abdominal pain	8%	Difficult concentration	8%
Chest pain	8%	Forgetfulness	8%
Neck pain	6%	Guilt feeling	6%
Chills	6%	conflicts with others	3%
Nausea	5%	Increased smoking	3%
Palpitations	4%	tremors	2%

The comorbidities were found in 35%, including hypertension 13%, diabetes mellitus 10%, Asthma 6%, musculoskeletal 6%, gastrointestinal 5% and cardiac disorders 4%, and mental disorder 1%. About 29% were taking medicine for their primary disease. Laboratory tests were done in 39% patients. The results of different investigations done are shown in Table II.

Table II: Types and results of investigations done in patients

Investigations	Done in patients	Result	
		Normal	Abnormal
CBC	34%	20%	Leucopenia 5%, Leukocytosis 1%, Hb 3%, Thrombocytopenia 3%
CRP	14%	4%	Raised 10%
Ferritin	4%	3%	Raised 1%
D Dimers	3%	-	Raised 3%
LDH	2%	2%	-
S. albumin	1%	1%	-
Chest X-ray	39%	24%	15%
CT Chest	4%	2%	2%
Blood group	86%		A+ 18, A- 1, B+ 30, B- 3, AB+ 8, AB- 1, O+ 23, O- 2

All the patients were quarantined at home by themselves, or on advice of doctors and peers. About 40% patients took self-medication. The consultation was taken from allopathics by 35%, homeopathics 4% and social media advice 11%. No treatment was taken 10% patients, out of which 8% focused on supplications and herbal fluids. The types of treatments taken by patients at home are shown in Table III.

Table III: Types of treatment taken by Covid-19 patients

Types of management	Details
Antibiotics	Azithromycin alone 55%, with Cephalosporin 3%, with Flagyl 3%, Antimalarial 6%, Ivermectin 1%
Symptomatic and other treatments	Analgesics and antipyretics (Paracetamol, Panadol) 69%, Antiallergics 13%, Oxygen 6%, Gargles 5%, Steam inhalation plain or with Vicks 4%, Homeopathic 4%, Enoxaparin Sodium 2% Steroids, Antiemetic, Colic drops, Mucaine, Zantac 1% each
Supplements	Vitamin C 20%, Vitamin D 18%, Multivitamin 14%, Calcium 10%
Fluids	Herbal Qahwas of Sanamakki/mint/cinnamom /ginger/green tea /joshanda, Fruit juices, chicken/meat soups 50%, IV fluids 2%, ORS 1%
Special Diet	Soft diet, High protein diet, Dry and fresh fruits 37%
Spiritual therapy	Prayers, Supplications, Tasbeehat 75%

The outcome of home management was recovery in 87% cases. The remaining thirteen patients were hospitalized due to severe symptoms, out of which 9 were cured and 4 died.

DISCUSSION

The COVID -19 pandemic disseminated rapidly around the globe after its identification in China. The first 41 hospitalized cases in Wuhan China, presented with symptoms like fever, cough, myalgia and fatigue¹¹. The first confirmed case in United States with the initial mild symptoms progressing to pneumonia on day 9 of illness led to the description, identification, diagnosis, clinical course, and management of disease¹⁰. The similar viral loads in asymptomatic and symptomatic cases indicate these to be potential source of transmission. The asymptomatic and pre-symptomatic cases reported by different studies ranged from 6 to 48%¹²⁻¹⁸, which remained towards higher side of range in our study. Fever, cough, fatigue were the commonest symptoms reported in our and other international studies^{15,16, 19}. The international studies reported highly variable prevalence of symptoms. The frequency of fever in our study was less as compared to other studies which varies from about 69% to 89%¹⁵⁻²⁰. Dyspnea was found in 18% in our

study where as in one study it was reported to be 10.1%¹⁵, while it was higher 19% to 30% in other studies^{14, 18, 19}. Cough was present in our study population as in 37% & sore throat in 42% whereas it was reported in high number of patients (30% to 72%) in other studies^{4, 15, 17-22}. Fatigue was one of the important finding and almost half of our study population had this symptom whereas most other studies revealed lesser chance of fatigue from about 6% to 40%^{15, 17-21}. However, one study showed higher incidence of fatigue (63%)²². In the literature the comparable symptoms of chest pain, dizziness, diarrhea, nausea, vomiting and abdominal pain¹⁷⁻²⁰ were found. Ageusia was reported less (5% to 9%)¹⁵⁻¹⁹. The symptoms like hyposmia¹⁹, gustatory dysfunction²² and anosmia^{15,22}, headache^{17,22,23}, were variable in different studies. The presenting symptoms found in patients were usually common to many respiratory diseases, variable in different studies and none was specifically associated to COVID-19 to help in screening the patients. The symptoms alone may not be enough clues because of substantial number of asymptomatic cases. The pandemic phobia also led to psychological symptoms, but these were not mentioned in the studies we consulted. The frequency of different psychological symptoms except irritability and sadness was low which reflects better psychological stability in the patients. The incidence of co-morbidities in one study reported as 17.7%¹⁵ was similar to our study. The people had PCR test done for early diagnosis and management because of awareness of common symptoms, after exposure to patient as precautionary measure or job requirement. Only one third of them got other diagnostic investigations done. Our patients had lower levels of diagnostic parameters as compared to C- reactive protein in 68.6%¹⁸, 84%²⁰. the leucocyte count was found to be normal in 37% or low²¹ but lymphopenia was higher in 57.4%¹⁸, 43%²⁰, increased lactate dehydrogenase 51.6%¹⁸ reported in a review. The abnormal chest computer tomography was found in 96.6%¹¹ patients, most frequently with ground-glass opacities (80%) and bilateral pneumonia (73.2%)¹⁷.

In consensus with our results, a higher percentage of mild to moderate disease had been reported in other studies was 96%¹⁵, 89.5%¹⁴ and 86%⁹ cases who recovered after home quarantined with or without any treatment. Despite the documented low rate 1- 10%¹⁰ of secondary bacterial infections, the use of antibiotics similar to our results was found to be 45% irrespective of their disease severity⁷. The antibiotic use had been higher from 61%¹⁵, 71.5%¹⁷ in overall and to 92%²³ in

hospitalized patients. The antibiotic choices were different in different countries, for example azithromycin was most commonly prescribed alone to 41%¹⁶ cases, or with more than one antibiotics like doxycycline¹⁹, levofloxacin⁶, moxifloxacin¹ and ivermectin²⁰ in different countries. The few recovered patients after hospitalization in our study, did not know about the antibiotics prescribed to them. While internationally, the hospitalized patients received Amoxycillin-clavulanate alone or with azithromycin / clarithromycin in 46.6%, ceftriaxone plus azithromycin in 29.1%, broad-spectrum Beta lactams alone or with Azithromycin or Vancomycin in 12.9%, hydroxychloroquine / chloroquine in 27.6%^{24,25} and antivirals in 90%¹⁸ and 26%¹⁶ cases. The use of antibiotics like cephalosporin, metronidazole, antimalarial or antiviral, steroids and oxygen was very limited in our study. The meta-analysis found lesser number of patient requiring mechanical ventilation 9% and oxygen 2%¹⁹. The treatments with agents like antiviral nucleotide analogue remdesivir, systemic interferons and in particular interferon β -1a, dexamethasone, hydroxychloroquine, convalescent plasma was either rare or none in our study. The percentage of patients using treatment strategies advocated on social media, homeopathic drugs, herbal fluids, specific foods and vitamin supplements were not found in consulted international studies in references. Few patients used Homeopathic medicine and steam inhalation.

As compared to the estimated prevalence of 25.6%^{18, 18} 1%²¹ in other studies, severe disease was less in our study. Acute respiratory distress syndrome (ARDS) had been the most common complication (15.7%)¹⁸ in hospitalized patients. The incidences of hypertension, cardiac diseases and diabetes in fatal cases, were 16.4%, 12.1% and 9.8%²³ respectively in a Chinese study. In hospitalized patients, ventilator associated pneumonia with Enterobacteriaceae or non-fermenter Gram-negative bacilli was reported in 50.9%, bloodstream infections with coagulase negative Staphylococci or Enterobacter complex in 29.1% patients as hospital acquired infections and death rate in 40.5% cases²⁴. The similar fatal outcome of 3.6%¹⁸, 7%¹⁹, 4.3%^{11, 21}, 4%¹⁷ in general cases is reported in other studies.

CONCLUSION AND RECOMMENDATIONS

The study provided an insight of clinical features and COVID -19 disease progression. Majority of patients had mild to moderate disease and recovered satisfactorily after home management. Many of the

symptoms in different areas were common with variable frequencies. The declaration of pandemic urged the patients to take the symptoms seriously and get PCR test done. The severe disease and fatal outcome occurred in patients with comorbidities requiring hospitalization. The research on herbal therapies is suggested for any possible role in recovery from disease.

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