

Clinical Profile of Covid-19 Patients in a Tertiary Care Hospital

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Abstract

Background: Covid-19 is an infection caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2).^[1,2] Majority of those who get infected with this particular virus experience mild to moderate respiratory illness from which they usually recover without receiving any special treatment.

Elderly and those with underlying medical comorbidities, for example, diabetes, cardiovascular disease, chronic obstructive pulmonary disease, are more prone to develop severe disease.

The main mode of transmission of COVID-19 virus is through droplets of saliva or discharge from the nose upon coughing or sneezing.^[3,4]

Currently there is no specific vaccine or treatment for COVID-19.

Method: A prospective observational study of COVID-19 patients was undertaken over a period of 3 months in the Department of Medicine, Government Medical College, Srinagar. After taking consent from the patients, their detailed history, examination and investigations were done.

Results: Out of a total of 60 patients included in the study, 27 developed moderate disease. Only 18 developed severe symptoms while the remaining experienced mild illness. The most common symptom the patients complained of was fever followed by cough.

Conclusion: COVID-19 infection manifests as a respiratory illness in the majority. Patients commonly complain of fever, cough (dry or productive), breathlessness and chest pain. Non-specific symptoms like loss of taste/smell, malaise, generalized body aches usually occur. Sometimes, patients present with atypical symptoms such as chest pain, hemoptysis or gastrointestinal complaints (like nausea, vomiting and diarrhea).

COVID-19 infection usually resolves spontaneously without any special treatment in most patients except those who are immune-compromised or with underlying co-morbidities such as diabetes, cardiovascular disease, chronic lung disease, etc.

Keywords: COVID-19, SARS-CoV-2, CO-RADS, RT-PCR.

Introduction

Covid-19 is predominantly a respiratory disease which is caused by “severe acute respiratory syndrome coronavirus 2” (SARS-CoV-2).^[1,2] It is a highly contagious disease and currently an ongoing pandemic. It was first identified in Wuhan, China.

Its main mode of transmission is from inhalation of respiratory droplets or aerosols when an infected person coughs, sneezes, talks or breathes. It can occur when these droplets get into the mouth, nose or eyes of other person in close contact with the infected person^[3,4] A person can also contract the infection through indirect contact by touching contaminated object or surface (i.e. via fomites) before touching their mouth, nose or eyes, although it isn't though to be a main route of transmission.^[5]

The median incubation period is about 4 to 5 days.^[6] Many patients remain asymptomatic and most of those who develop symptoms tend to develop those within 2-7 days after exposure.^[6,7]

About 20% of those infected with COVID-19 (i.e. one in five people) do not develop any noticeable symptoms and remain asymptomatic during their entire disease course. These carries remain untested and contribute much in disease transmission.^[19,20,21,22]

The clinical presentation of COVID-19 is variable ranging from mild to severe illness.^[8,9] People with the same infection may complain of different symptoms, and their symptoms may change over time.

The most common symptoms are:^[10,11]

- Fever
- Cough (dry or productive)
- Fatigue

Other less common symptoms, which may occur in some patients, include:^[10]

- Loss of taste or smell

- Nasal congestion
- Chills
- Conjunctivitis
- Sore throat
- Headache
- Muscle or joint pain
- Nausea or vomiting
- Diarrhea

People with underlying medical comorbidities like hypertension, diabetes mellitus, cardiovascular or respiratory diseases, obesity or cancer and those aged 60 and above are at higher risk of developing a serious illness and/or dying.^[12] But even the young and those without underlying medical problems can become seriously ill and die.

Symptoms of severe disease include:^[11]

- Shortness of breath
- Loss of appetite
- Confusion
- Chest pain
- Temperature above 38*
- Bluish face or lips

Immediate medical attention is warranted if any of these symptoms develop in the infected person.

Further disease progression can lead to a number of complications, which include:^[13,14,15,16]

- Pneumonia
- Acute respiratory distress syndrome
- Sepsis
- Septic shock
- Multi-organ failure (injury to kidney, heart or liver)
- Thromboembolism
- Rare neurological complications such as stroke, encephalitis, seizure and Guillain Barré syndrome.^[17,18]

Materials and Methods

A prospective observational study of COVID-19 was conducted over a period of 3 months in the Department of Medicine, Government Medical College, Srinagar.

After obtaining written informed consent and ethical clearance from institutional ethics committee, patients who tested positive for COVID-19 were analyzed.

Inclusion Criteria

All age groups with COVID-19 irrespective of sex and ethnicity were included in the study.

Exclusion Criteria

Those who had other respiratory illnesses not caused by COVID-19 virus were excluded from the study.

For each positive case, a detailed history was obtained followed by thorough physical examination. Relevant investigations such as Chest X-ray and Computed Tomography were obtained in addition to complete blood counts, kidney function tests, liver function tests and serum electrolytes. In few patients who were critical, biomarkers like serum ferritin, CRP, IL-6, LDH and D-Dimer were also measured.

COVID-19 was diagnosed as a respiratory illness in a setting of appropriate clinical syndrome, positive real-time reverse transcriptase polymerase chain reaction (RT-PCR) assay and/or radiological tests.

Results

A total of 60 patients who tested positive for COVID-19 were included in the study.

Most of the patients belonged to the age group of 40-60, which constituted 28 patients (46.66%).

Table 1: Age Distribution

| Age Group Years) | Frequency | Percentage |
|------------------|-----------|------------|
| 20-40 | 7 | 11.6 |
| 40-60 | 28 | 46.66 |
| >60 | 25 | 41.66 |

Out of 60 patients, 32 were males (53.33%) and 28 were females (46.66%).

Table 2: Sex Distribution

| Sex Category | Frequency | Percentage |
|--------------|-----------|------------|
| Male | 32 | 53.33 |
| Female | 28 | 46.66 |

Most of the patients belonged to the district “Srinagar” (36.66%) while only 3.33% belonged to the district “Kulgam”.

Table 3: District Wise Distribution

| District | Frequency | Percentage |
|-----------|-----------|------------|
| Srinagar | 22 | 36.66 |
| Budgam | 12 | 20 |
| Pulwama | 6 | 10 |
| Kupwara | 4 | 6.66 |
| Bandipora | 3 | 5 |
| Baramulla | 5 | 8.3 |
| Ganderbal | 3 | 5 |
| Anantnag | 3 | 5 |
| Kulgam | 2 | 3.33 |

The most common symptom at presentation in these 60 patients was “fever” (81.6%) followed by “cough” (70%).

Table 4: Symptoms of Covid-19 Patients

| Symptoms | Frequency | Percentage |
|---|-----------|------------|
| Fever | 49 | 81.6 |
| Cough | 42 | 70 |
| Breathlessness | 32 | 53.3 |
| Loss of smell/taste | 40 | 66.6 |
| Acute gastroenteritis (vomiting / loose stools) | 5 | 8.3 |
| Chest pain | 4 | 6.6 |
| Generalized body weakness | 4 | 6.6 |
| Hemoptysis | 2 | 3.3 |

All 60 patients underwent baseline investigations like CBC, KFT and LFT.

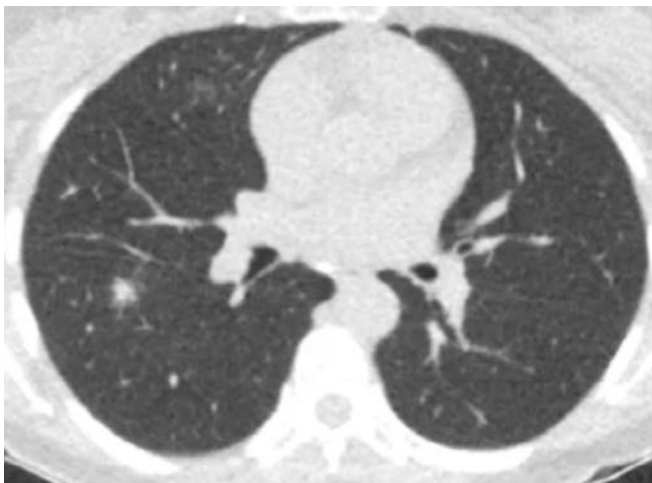
Table 5: Baseline Investigations

| Investigation | Normal (Frequency) | Normal (Percentage) | Deranged (Frequency) | Deranged (Percentage) |
|---------------|--------------------|---------------------|----------------------|-----------------------|
| Cbc | 21 | 35 | 39 | 65 |
| Kft | 41 | 68.3 | 19 | 31.6 |
| Lft | 45 | 75 | 15 | 25 |

Out of 60 patients, 33 (55%) belonged to CO-RADS 4 category on HRCT chest. Out of the remaining, 20 (33.3%) had CO-RADS 5 and only 7 patients had CO-RADS 3 (i.e. 11.6%)

Table 6: Co-RADS on HRCT Chest

| CO-RADS | Frequency | Percentage |
|-----------|-----------|------------|
| CO-RADS 3 | 7 | 11.6 |
| CO-RADS 4 | 33 | 55 |
| CO-RADS 5 | 20 | 33.33 |



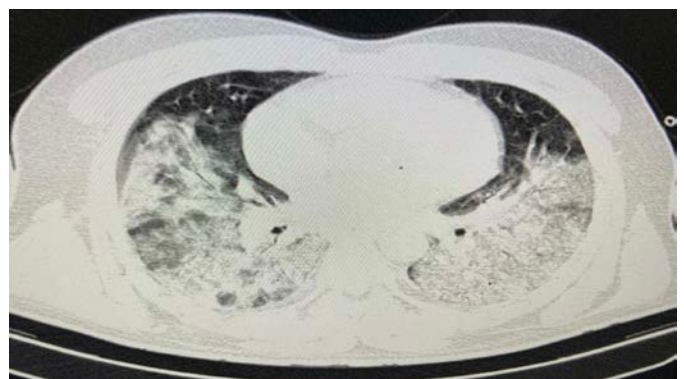
Visualized part of right lung shows two patches of GGO's in centrilobular distribution.....findings may represent **CO-RADS 3**.



Visualized bilateral lung fields show multifocal patches of GGO'S and small areas of consolidations predominantly in peripheral distribution Likely suggestive of atypical viral pneumonia **CO-RADS 4**

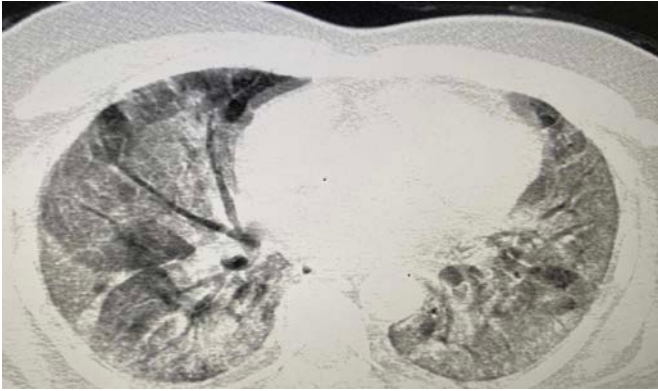


Visualized bilateral lung fields show multifocal patches of organized consolidations with GGO's predominantly in peripheral distribution likely suggestive of atypical viral pneumonia with **CO-RADS 4**.



Visualized bilateral lung fields show confluent patches of consolidation with GGO's with superimposed interlobular septal thickening with formation of crazy

paving appearance likely suggestive of atypical viral pneumonia **CO-RADS 5**



Visualized bilateral lung fields show confluent patches of GGO's with consolidation with superimposed interlobular septal thickening likely suggestive of atypical viral pneumonia **CO-RADS 5**

Discussion

The current study was conducted to detect the clinical profile of patients who tested positive for COVID-19. COVID-19 commonly presents as a respiratory illness with fever, cough and breathlessness. In our study, these three symptoms were predominant over the other less common symptoms; similar to the results of previous studies conducted.^[23] In our hospital based observational study 60 patients were included irrespective of age, gender and ethnicity. It was found that 28 subjects belonged to the age group of 40-60 years, which constituted 46.66% of the total subjects. 25 others belonged to >60 age group and the rest 7 belonged to the age group 20-40 years. The mean age of presentation was 45.6 years. Increasing age was seen to be associated with more severe illness as compared to the younger age group. Among these 60 subjects, 32 belonged to male sex category (53.33%) and 28 belonged to female sex category (46.66%).

The clinical presentation of the patients in our study was in accordance with most studies conducted worldwide. The commonest symptom that the patients

complained of was "fever", which was present in 49 patients (81.6%). The next most common symptom was "cough". It was present in 42 subjects (70%). 32 patients also complained about "breathlessness" accounting for exactly 53.3%.

These three complaints (i.e. fever, cough and breathlessness) were the main symptoms the patients presented to the hospital with.

A handful of patients presented to the Emergency Department with complaints other than these. 5 patients out of these 60 presented with "acute gastroenteritis" accounting for 8.3% of total subjects. They complained of nausea/vomiting and/or diarrhea. Some even had associated abdominal pain. 6.6% of the total patients in our study (i.e. 4 patients) complained that "chest pain" was a predominant symptom in them. Associated with the main complaints, patients also experienced other symptoms like loss of taste/smell and generalized body weakness. 40 patients (66.6%) experienced loss of taste/smell. 4 others complained about having "generalized body weakness" (6.6%). Hemoptysis was found to be a rare symptom in our study. Only 2 subjects had one or two episodes of "hemoptysis" accounting for 3.3%. Out of the total 60 patients, 37 patients (i.e. 61.6%) had underlying co-morbidities in the form of hypertension, diabetes mellitus, hypothyroidism, chronic obstructive pulmonary disease or coronary heart disease. 39 patients (accounting for 65% of the total) during their hospital stay showed deranged hemogram either in the form of anemia (26.6%), lymphocytosis (21.6%), lymphopenia (73.3%) or thrombocytopenia (26.6%). 19 patients also had deranged kidney function test in the form of raised BUN and/or creatinine. Only 15 patients had deranged liver function test in the form of raised bilirubin and/or liver enzymes. Out of 60 patients, 27 experienced

moderate disease accounting for the majority (i.e. 45%) while 18 others developed severe symptoms requiring critical care (30%). Only 15 patients (25%) experienced mild course of the disease and recovered without requiring any special treatment.

Conclusion

COVID-19 infection usually manifests with respiratory symptoms: fever and cough being the commonest symptoms. Patients with breathlessness often have severe disease. Patients above 60 years and those with underlying medical comorbidities often develop severe illness, thereby requiring oxygen support and are at greater risk of dying as compared to others. This study helped to determine the spectrum of presentation in COVID-19.

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