



Clinical Profile, Comorbidities, and Outcome among 985 Patients of COVID-19 at a Secondary Care Hospital in Union territory of North India

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Abstract

Background and purpose: The information on COVID-19 patients admitted at a Secondary Care Hospital in India is scant. The aim of the study was to describe the clinical profile of COVID-19 patients along with the impact of Comorbidities on the disease outcome at a Secondary Care Hospital.

Method: In this retrospective study, all the RTPCR confirmed COVID-19 cases admitted in District Hospital, a secondary Care Hospital were included (Except Age group<18, Pregnant females). Clinical data including presenting symptoms, underlying Comorbidities, laboratory characteristics and outcomes were recorded and analyzed.

Results: Of the included 985 patients with COVID-19 with median age of 49 years, 575 (58.37%) were Symptomatic and 410 (41.63%) were Asymptomatic. Among symptomatic, males and females constituted 51.65% and 48.35% of the study cohort respectively. Among Symptomatic patients fatigue (74.42%) females, (68.35%) males, cough (73.02% females, 67.67% males) and fever (62.62% males, 57.11% females) were the most common symptoms. Hypertension (67.67% males, 66.33% females), Diabetes Mellitus (36.36% males, 36.34% Females), COPD (32.65% males, 39.56% females) were the common comorbidities found among symptomatic patients. 14 patients expired during hospitalization. Among the deceased 100% had Hypertension as comorbidity, fever as presenting symptom, C - reactive protein>10 and D Dimer>500 as lab features.78.57% among deceased had lymphopenia as Lab feature and Diabetes Mellitus as comorbidity.

Conclusion: Data analyzed indicated presence of fever, comorbidities like hypertension, diabetes mellitus and lab characteristics of lymphopenia and inflammatory markers like High D- Dimer and C-reactive protein were associated with worse outcomes including death.

Keywords: Clinical profile, COVID-19, Comorbidities, Outcome

Introduction

The virus designated as severe acute respiratory syndrome coronavirus 2(SARS-COV-2) is the etiological agent of the Coronavirus induced disease 2019 (COVID-19), which lead to the outbreak of Pneumonia cases in Wuhan City, the Capital of Hubei province in China in December 2019. On 11 March World Health organization declared COVID-

19 a Pandemic.¹ The first case of COVID-19 Pandemic in India was reported on 30th January 2020 in Kerala, a southern state of India. The incubation period for COVID-19 is generally within 14 days following exposure, with most cases occurring approximately 4 to 5 days after exposure with median incubation period of 4 days.² The main mode of transmission of COVID-19 is person to person.³

COVID-19 presents with varied clinical manifestations with most common being fever, cough, fatigue and less common being dyspnea, hemoptysis, gastro-intestinal manifestations, dermatological manifestations, Sino-nasal manifestations etc.^{4,5,6}

Methodology

A single center retrospective study was conducted at District Hospital Pulwama India, in which the records of 985 RTPCR confirmed cases of SARS-COV-2 infected (COVID-19) admitted patients from Feb 2020 to 2022, was reviewed. Clinical data including presenting clinical symptoms, underlying comorbidities, lab reports and outcomes were analyzed. Continuous variables were described as medians and compared using Mann Whitney U test. Categorical variables were delineated as n (%) and compared by Pearson Chi Square test and Fisher-Exact test. All the statistical analysis were performed using SPSS version 22.0 software. The probable value of less than 0.05 was concluded significant.

Results

A total of 985 patients of COVID-19 were included who were confirmed by RTPCR for SARS-COV-2. Of total, 58.37% were Symptomatic and 41.63% were Asymptomatic. Among symptomatic, 51.65% were males and 48.35% were females. All patients were having history of contact with a covid confirmed case, or travel history outside State. Among symptomatic patients most common Clinical feature was Fatigue (74.4% females, 68.35% males) followed by Cough (73.02% females, 67.67% males)

and Fever (62.62% males, 56.11% females) as shown in table 1. Less common symptoms noted were sore throat (53.22% females, 34.68% males), Shortness of Breath (21.94% females, 18.85% males) and body aches (29.29% males, 29.13% females). Anosmia was seen in 1.34% males and 1.07% females. Among abdominal symptoms diarrhea was the most common seen in 2.15% females and 1.01% males. Rash was found in 2 males, and one female patient had Non-purulent conjunctivitis. 23.65% of symptomatic patients had one or more comorbidities, with Hypertension (50.21% males, 49.79% females) found to be the commonest in our study group as shown in table 1 and 2. It was followed by COPD (39.56% females, 32.65% males), Diabetes Mellitus (36.36% males, 36.34% females) and Hypothyroidism (6.11% females, 6.06% males). 6.83% females, 5.72% males had underlying CAD. Similarly CKD was seen in 3.95% females and 3.03% males. Two female patients had underlying rheumatoid arthritis and malignancy. During Hospitalization 14 patients expired (1.46%) as shown in table 3. All the deceased were aged above 55 with median age of 56 yrs. Fever was the most common symptom among deceased patients (100%) followed by cough, sore-throat, fatigue (64.28% each) and shortness of breath (57.15%) as shown in table 2. Among Uncommon symptoms hemoptysis was strongly associated with worse outcome. Among symptomatic Patients Lymphopenia (Lymphocytes < 20%) was seen in 20.69% of patients, High C-reactive protein (>10) in 14.60% and D Dimer (>500) in 14.43% patients respectively and these were found to be associated with worse outcome as shown in table 4 and 5.

	Male	Female
Symptomatic(575) (58.37%)	297 (51.65%)	278 (48.35%)
Asymptomatic(410) (41.63%)	270 (65.85%)	140 (34.19%)
Co-morbidities(233) (23.65%)	117(50.21%)	116(49.70%)
Death(14)	06(43.85%)	08(57.15%)

(1.46%)		
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Table 2: Clinical Features Of Symptomatic Patients (n=575)

Symptom/Sign	Male(n=297)	Female(n=278)	Death(n=14)
Fatigue	203(68.35%)	208(74.42%)	09(64.28%)
Cough	201(67.67%)	203(73.02%)	09(64.80%)
Fever	186(62.62%)	156(56.11%)	14(100%)
Sore-throat	103(34.68%)	148(53.23%)	09(64.28%)
Headache	90(30.30%)	81(29.13%)	02(14.28%)
Bodyache	87(29.29%)	79(28.41%)	07(50.00%)
SOB	56(18.85%)	61(21.94%)	08(57.15%)
Diarrhoea	13(4.30%)	10(3.59%)	01(7.14%)
Abdominal pain	09(3.03%)	04(1.43%)	00(00.00%)
Vomiting	04(01.34%)	07(2.51%)	01(7.14%)
Anosmia	04(01.34%)	03(1.07%)	00(0.00%)
Hemoptysis	03(01.01%)	06(2.15%)	02(14.28%)
Rash	02(00.67%)	00(0.00%)	00(0.00%)
Conjunctivitis	00(00.00%)	01(0.35%)	00(0.00%)

Table 3: Comorbidities Among Symptomatic (n=575)

Comorbidity	Male(n=297)	Female(n=278)	Death(n=14)
Hypertension	201(67.67%)	197(66.33%)	14(100%)
Diabetes Mellitus	108(36.36%)	101(36.34%)	11(78.57%)
COPD	97(32.65%)	110(39.56%)	07(50.00%)
Hypothyroidism	18(6.06%)	17(6.11%)	02(14.28%)
CAD	17(5.72%)	19(6.83%)	02(14.28%)
CKD	09(3.03%)	11(11%)	02(14.28%)

Rhematoid Arthritis	00(0.00%)	02(0.71%)	00(0.00%)
Malignancy	00(0.00%)	02(0.71%)	00(0.00%)

Table 4: Laboratory Characteristics Among Symptomatic COVID-19 Patients (n=575)

	Male(n=297)	Female(n=278)	Death(n=14)
CRP (>10) (14.60%)	45	39(14.02%)	14(100.00%)
D-Dimer (>500) (14.43%)	46	37(13.30%)	14(100.00%)
Lymphopenia (20.69%)	60	59(21.22%)	11(78.57%)
Hyperglycemia (New onset)	3	02(-0.86%)	02(14.28%)

Table 5: Clinical And Laboratory Characteristics Among Deceased Patients (n=14)

Hypertension	14(100%)	<i>P</i> <0.05
C-Reactive Protein	14(100%)	<i>P</i> <0.05
D.Dimer	14(100%)	<i>P</i> <0.05
Diabetes Mellitus	11(78.57)	<i>P</i> <0.05
Lymphopenia	11(78.57)	<i>P</i> <0.05

Discussion

Our study group reports the median age of 47 years which is comparable to several cohorts of

hospitalized patients in China,4,7 but younger in comparison to those of Italy and USA.8,9 The median age among deceased in our study group was

56 years which differs considerably from the data of other studies.¹⁰ Our study depicted that older age portends poor prognosis and contributed to higher mortality among Covid-19 diseased patients which is in line with the findings of other studies.^{10,11,12} In our study males have comprised high number of cases which correlates with the findings of studies worldwide.^{2,8,9} However there was no significant bearing on outcome based on gender as seen in antecedent studies,^{1,13} this in part can be explained by early referral of severe covid 19 diseased males of our study group to higher health centers. Our study group reports 43.85% and 49.7% of asymptomatic COVID-19 confirmed cases of males and females respectively which conform to the reports of various studies.¹⁴ The most common Symptom reported in our study group was fatigue followed by cough and fever. Nevertheless fever was found in more than half of our study population which conforms to the reports of other studies.^{2,4,8} Other Symptoms reported include sore-throat, gastrointestinal manifestations, Smell and taste abnormalities.^{5,6} In our study cohort, we found hypertension, diabetes mellitus, chronic obstructive airway disease in decreasing order of prevalence as comorbidities which were associated with severe illness and worse outcomes which is quite comparable to the antecedent studies.^{8,11,17} All the deceased in our study group had one or more comorbidities. Our study reports that lymphopenia, elevated D Dimer, C-reactive protein were associated with worse outcomes as reported by previous studies as well.^{10,15,17} Our study reported new onset Hyperglycemia in 5 Patients (M=3,F=2) of whom 2 died as a direct consequence of COVID-19 illness.^{16,18} Our study has some notable limitations. First the study sample was less diverse as it excluded COVID-19 confirmed pregnant ladies and age group of less than 18 years which could have had bearing on the study results. Secondly it was a single center study. Third being the Secondary care hospital severe COVID-19 cases comprised the major chunk of referrals to tertiary care settings, the inclusion of whom would have affected our assessment of outcomes. Fourth, our study cohort comprised mostly of asymptomatic individuals as all the COVID-19 infected patients were to be hospitalized as per local guidelines, so our study cohort may represent the milder end of gamut of COVID-19 disease. Fifth, we no doubt could not

comment on co-infections or super-infections caused by bacteria or fungi given the overwhelmed burden on health care resources amid COVID-19 pandemic. Sixth, Lack of super-specialty disciplines and proper training at our centre could have affected the assessment. Seventh, Data generation was clinically driven rather than systematic.

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