

Assessment of clinical characteristics and comorbidities of covid-19 patients

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Abstract

Introduction: A novel human corona virus, severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), was identified in Wuhan, China, in December 2019. Since then, the virus has made its way across the globe to affect over 180 countries. SARS-CoV-2 has infected humans in all age groups, of all ethnicities, both males and females while spreading through communities at an alarming rate. Given the nature of this virus, there is much still to be learned; however, we know that the clinical manifestations range from a common cold to more severe diseases such as bronchitis, pneumonia, severe acute respiratory distress syndrome (ARDS), multi-organ failure, and even death. It is believed that COVID-19, in those with underlying health conditions or co morbidities, has an increasingly rapid and severe progression, often leading to death.

Aims and Objectives: A retrospective study was carried out in COVID-19 patients. Data was collected by record review. Patients of all age groups of both gender diagnosed with COVID-19 positive were included. Clinical characteristics and co morbidities was analyzed.

Results: A total number of 75 patients were diagnosed with COVID-19 positive with one or more warning signs were admitted during the study period. Majority of the cases admitted are more than 41(85%) years of age. Highest admitted gender is male 52(69%). Most common signs and symptoms is fever 66(88%). Maximum number of patients have comorbidities 53(71%) of hypertension 36(48%) and diabetes 35(47%). Most of the admitted cases have two comorbidities 23(31%).

Keywords: sars-cov-2, covid-19, clinical characteristics, comorbidities, retrospective study

Introduction

In December 2019 a new respiratory tract infecting agent emerged in Wuhan city of China, known as the corona virus. It was later named Covid-19. Full-genome sequencing and phylogenetic analysis indicated that 2019-nCoV is a form of betacoronaviruses associated with human severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) [1]. The 2019-nCoV has close similarity to bat corona viruses, and it has been postulated that bats are the primary source. While the origin of the 2019-nCoV is still being investigated, current evidence suggests spread to humans occurred via transmission from wild animals illegally sold in the Huanan Seafood Wholesale Market [2]. It spread rapidly through China infecting more than 85,000 people. Within a few months it engulfed the Europe causing massive loss of life and property in Italy, Spain, France, Germany, UK and then USA. It is now set to gain a foothold in India which is the second most populous country of the world. [3]. Older adults and people of any age who have underlying medical conditions, such as hypertension and diabetes, have shown worse prognosis [4]. Diabetic patients have increased morbidity and mortality rates and have been linked to more hospitalization [4]. People with chronic obstructive pulmonary disease (COPD) or any respiratory illnesses are also at higher risk for severe illness from COVID-19 [5].

Aims of the Study

1. To assess the comorbidities of COVID -19 Patients and its impact on COVID-19 Patients.
2. To evaluate clinical characteristics of COVID-19

Patients.

Materials and Methods

The present study was done in covid-19 patients admitted in tertiary care hospital, Hyderabad over a period of 3 months. Number of patients selected 75

Inclusion Criteria

All patients confirmed with COVID -19 infection.

Exclusion Criteria

All patients without covid-19.

Method

Retrospective study of middle-aged and elderly patients with COVID-19 found that the elderly population is more susceptible to this illness and is more likely to be admitted to the ICU with a higher mortality rate. [6] The age-related changes in the geriatric population may be due to the changes in lung anatomy and muscle atrophy which results in changes in physiologic function, reduction of lung reserve, reduction of airway clearance, and reduction of the defense barrier function [6].

Methodology An electronic literature search was performed using Pub Med, Google Scholar, EBSCO host, Mendeley, and Medline Plus. An article was selected if it included keywords such as corona virus, COVID-19, SARS-CoV-2, clinical features, co morbidity, diabetes, and hypertension. Data collect from hospital and entered in XL sheet. Clinical characteristics and co morbidity condition and clinical profile taken from patient data. Analysed data by IBM SPSS

statistics.

Results

Statistical analysis of clinical characteristics and comorbidities of 75 patients presented with COVID-19 positive admitted in tertiary care hospital between July to September.

Table 1: No. of Patients 75

	No. of patients	Percentage (%)
Gender		
Male	52	69
Female	23	31
Age		
0-20	1	1
21-40	10	13
41-60	32	43
>60	32	43
Clinical characteristics		
Fever	66	88
Cough	62	83
Shortness of breath	58	77
Fatigue	31	41
Bodyaches	28	37
Headache	12	16
Sorethroat	11	15
Tastless	6	8
Chills	7	9
Decreased sensation of smell	1	1
Comorbidity condition		
Hypertension	36	48
Diabetes mellitus	35	47
Coronary artery disease	4	5
Hypothyroidism	6	8
Kidney disease	3	4
Obesity	4	5
Seizures	2	3
Cerebrovascular accident	1	1
Respiratory tract infection	5	7
No. of comorbidity condition		
One comorbidity condition	21	28
Two comorbidity conditions	23	31
More than 2 comorbidity condition	9	12
Without comorbidity condition	22	29

Based on Gender

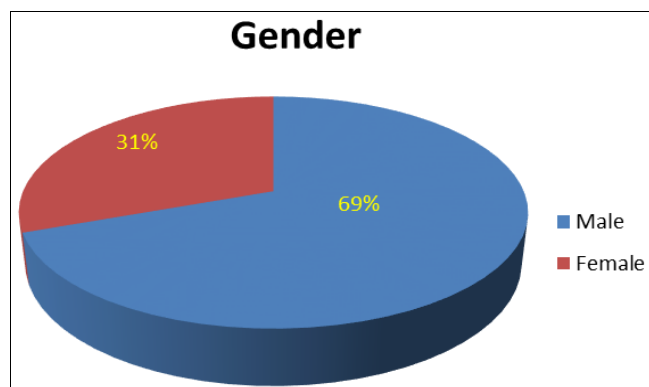


Fig 1

Out of 75 patients, 52 patients (69%) are male and 23 patients (31%) are female.

Different Age Group Affected with Covid-19

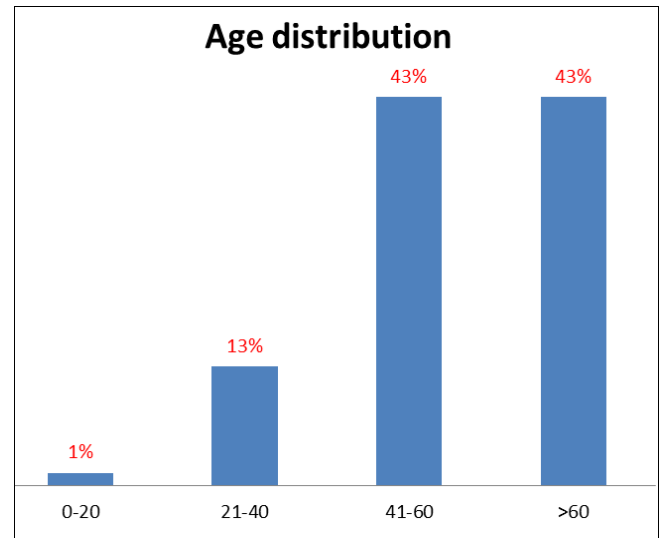


Fig 2

Out of 75 patients, only 1(1%) patient was found to be less than 20years of age, 10 (13%).

Patients were found between 21-40years, 32 (43%) patients were found between 41-60years, 32(43%) of patients more than 60years.

Group of Clinical Characteristics

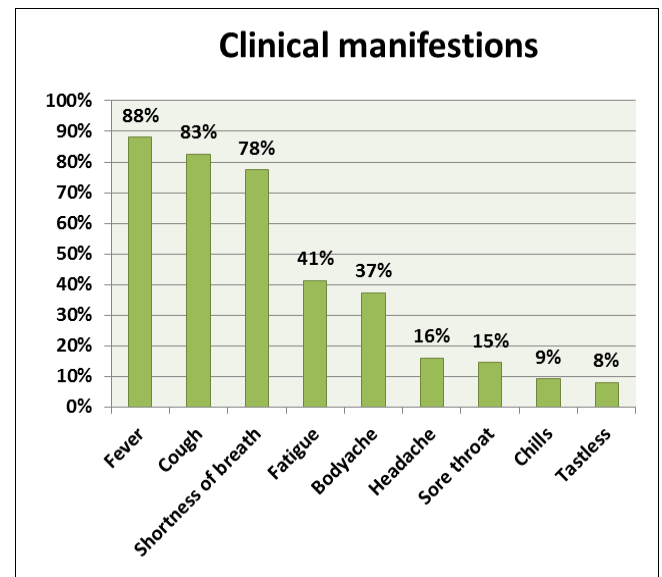


Fig 3

In our study out of 75 patients 66(88%) patients experienced fever and it is the most common sign.

62(83%) patients have cough, it is the second most common sign.

58 (78%) patients have shortness of breath, 31(41%).

Patients have fatigue, 28(37%) patients have bodyaches, 12(16%) have headache, 11(15%) have sore throat, 7(9%) patients have chills, 6(8%) patients experienced tastelessness.

List of Comorbidities

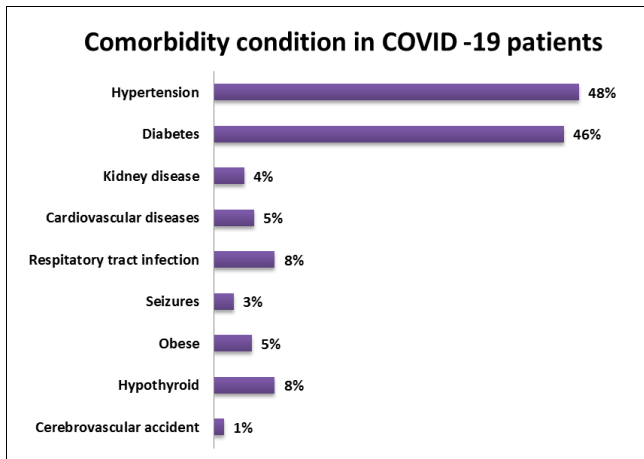


Fig 4

Out of 75 patients 36(48%) have most common comorbidity is hypertension. 35(46%) patients have diabetes which is the second most comorbidity. 3(4%) patients have kidney diseases, 4(5%) patients have cardiovascular diseases, 6(8%) patients have respiratory tract infections, 2(3%) patients have seizures, 4(5%) patients are obese, 6(8%) patients have hypothyroidism, 1(1%) patients have cerebrovascular accident.

Patients with no. of comorbidities

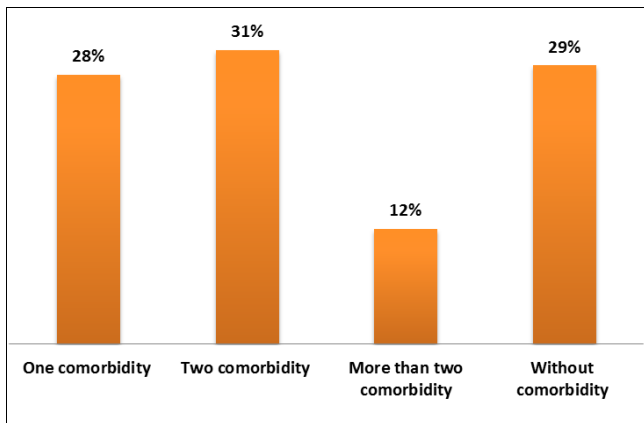


Fig 5

Out of 75(100%) patients, 53(71%) have one or other comorbidity. 22(29%) have no comorbidities In that 53(71%) patients 21(28%) patients are with single comorbid condition, 23(31%) patients are with double comorbid condition, 9(12%) patients have three or more comorbid conditions.

Discussion

In our study males are 62(69%) more prone to COVID -19 than females 23 (31%).

This finding is similar to observation of Huang *et al.* [7]. Maximum admitted age group was found to be more than 40(85%) years. middle-aged and elderly patients with COVID-19 found that they are more susceptible to this illness and is more likely to be admitted to the ICU with a higher mortality rate. The age-related changes in the geriatric population may be due to the changes in lung anatomy and muscle atrophy which results in changes in

physiologic function, reduction of lung reserve, reduction of airway clearance, and reduction of the defense barrier function [6].

This finding is similar to Liu K *et al.* [6].

The most common presenting symptoms was fever 66(88%) followed by cough 62(83%), shortness of breath 58(77.5%), fatigue 31(41%), bodyaches 28(37%), headache 12(16%), sorethroat 11(14.6%) chills 7(9.3%), and Taste Less 6(8%). This finding is similar to Adekunle Sanyaolu *et al* [8].

In our study most of the patients have comorbidites of hypertension 36(48%), diabetes 35(47%), respiratory tract infections 6(8%).

This finding is similar to Fei Zhou *et al.* [9].

Most of the patients have comorbidites 53(71%) maximum number of patients have two comorbidites 23(31%) patients without comorbidites 22(29%).

Conclusion

Over 180 countries have been affected by COVID-19, resulting in mass death worldwide. As cases evolve globally, it has been noted that persons with underlying chronic illnesses are more likely to contract the virus and become severely ill. Due to SARS CoV-2 being a relatively new virus, the data available is limited. However, patients with comorbidities have more deteriorating outcomes compared with patients without. COVID-19 patients with history of hypertension, diabetes, respiratory tract infections, obesity, cardiovascular disease and hypothyroidism have the worst prognosis and most often end up with deteriorating outcomes such as ARDS and pneumonia. Also, elderly patients in long-term care facilities, chronic kidney disease patients, and cancer patients are not only at risk for contracting the virus, but there is a significantly increased risk of death among these groups of patients.

Patients with COVID-19 have clinical characteristics of fever, cough, Shortness of breath, fatigue, bodyache headache, sorethroat, chills, and tastelessness.

Of the cases reported worldwide, symptoms of COVID-19 ranged from mild respiratory disease to severe illness, which requires intubation and mechanical ventilation. Since there is a period where the patient is asymptomatic, and the incubation period is between 2 and 14 days, it is difficult to establish an early diagnosis, much less curb the transmission of the infection if the patient is unknowingly exposed. However, within this period, if respiratory symptoms develop, it is important to seek immediate care.

Therefore, patients with comorbidities should take all necessary precautions to avoid getting infected with SARS CoV2, as they usually have the worst prognosis. These precautions include regular handwashing with soap and water or use of alcohol-based hand sanitizer, limiting person-to-person contact and practicing social distancing, wearing a face mask in public places, and overall limiting going to public areas at this time unless it is necessary. Hence, there is a need for a global public health campaign to raise awareness, on reducing the burden of these comorbidity illnesses causing deaths in COVID-19-infected patients.

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