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Coronavirus Disease 2019: Investigating Baseline Characteristics and Clinical Symptoms in COVID 19 Patients

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ABSTRACT

Background: Coronavirus Disease 2019 started in Wuhan, China in December 2019. Since then several studies examined the clinical characteristics of coronavirus disease 2019 (COVID-19) in China.1 But these studies were focused on Chinese people, not those infected in the Kingdom of Saudi Arabia. To our knowledge, there is only one related study conducted in the Middle East, which was conducted in Saudi Arabia by Alsofayan et al [1].

Objectives: The objective of our retrospective study is to analyze the baseline characteristics and clinical symptoms of individuals with COVID 19 and compare differences between those receiving care and those managing symptoms at home of confirmed positive Covid-19 patients presenting to KFSHRC in Riyadh from March to September 2020.

Design: Retrospective observational study carried out in the tertiary care institution in Riyadh, Saudi Arabia.

Methods: We included the for all the patients who presented to our hospital and were screened positive for Covid-19, on their first hospital encounter, for the study period from March 2020 to September 2020. Electronic medical records were accessed for data collection.

Outcome: Discharge status per age group

Sample Size: 1176 patients.

Results: One thousand one hundred seventy-six (1176) patients were screened positive for Covid-19 for the study period from March 2020 to September 2020. 616 were male (52.4%). 94% were adult (1109). 70 patients (6%) were pediatric (age group 1- 14 yrs.). 912 Saudi nationality (77.6%).

One thousand and four (1004) patients had DEM Walk-in screening, 158 outpatient screening, 14 inpatient screening Table 1.

The age group > 60 yrs. were the most prevalent group (68%) of the positive Covid 19 who were admitted to the hospital, followed by 46-60 yrs. (45%), 1-14 yrs. (40%), 15-30 yrs. and 31-45 years (25%). Fever and cough were the most dominant signs in both adult and pediatric. 1136 (96.6)

Conclusions: Our study provides a comprehensive characterization of clinical features among COVID-19 patients. Fever and cough were the most common clinical signs and symptoms, while muscle pain, short of breathing, and GI symptoms are uncommon. Our study did not find significant differences between Adults and pediatrics in terms of most common laboratory abnormalities (low lymphocytes and high neutrophils). The age group > 60 yrs. were the most prevalent admission group and had the highest mortality rate.

Limitations: Our study was done in a tertiary care institution, which is a large transplant and oncology center, therefore cannot be generalized to other non- tertiary centers.

Conflict of Interest: None.

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Introduction

Coronavirus Disease 2019 started in Wuhan, China in December 2019. Since then several studies examined the clinical characteristics of coronavirus disease 2019 (COVID-19) in China. Fu L et al [2]. Conducted a systematic review and meta-analysis study of clinical characteristics of coronavirus disease 2019 (COVID-19) in China.1 43 studies involving 3600 patients were included. Among COVID-19 patients, fever, cough and fatigue were the most common clinical symptoms. However, these studies were focused on Chinese people, not those infected in other countries.

To our knowledge, there is only one study to describe the demographic data and clinical characteristics of COVID-19 patients in the Middle East. This study is a multi-center in Saudi Arabia by Alsofayan et al [1].

The aim of the study is to analyze the baseline characteristics and clinical symptoms of individuals with COVID 19 and compare differences between those receiving care and those managing symptoms at home of confirmed positive Covid-19 patients presenting to KFSHRC in Riyadh from March to September 2020.

Methods

Retrospective study of all Covid-19 patients presenting to KFSHRC in Riyadh from March 2020 to September 2020. All data already exists through data warehouse. Data retrieved from the secured password-protected Electronic Medical Record (EMR) after Obtaining Approval from The Research Advisory Council (RAC).

Setting

Tertiary care center in Riyadh, Saudi Arabia.

Results

Our patient cohort consisted of 1176 patients who were screened positive for Covid-19 for the study period from March 2020 to September 2020. The mean age was 43 yrs., 52% were male and 94% were adult. 39.44% were admitted to the hospital (n=1176), 260.56% discharged home. The age group > 60 yrs. were the most prevalent group (68%) of the positive Covid 19 who were admitted to the hospital, followed by 46-60 yrs. (45%), 1-14 yrs. (40%), 15-30 yrs. and 31-45 years (25%).

Fever and cough were the most dominant signs in both adult and pediatric. Alive hospital discharge was 1136 (96.6). Table 1

Table 1: Baseline Characteristics of Eligible Randomized and Eligible Non-Randomized Patients

Variable	All n =1176	Home n =733	Inpatient n =443	P-value
Age, mean ± SD (yrs.)	43.29 ± 18.81	39.28 ± 16.13	49.92 ± 20.95	<0.0001
Female Gender, n (%)	560 (47.6)	355 (48.4)	205 (46.3)	0.47
Saudi Nationality, n (%)	912 (77.6)	517 (70.5)	395 (89.2)	<0.0001
Smoking, n (%)	19 (1.6)	10 (1.4)	9 (2.0)	0.38
Heart Rate, mean ± SD	95.51 ± 17.46	95.01 ± 16.09	96.15 ± 19.05	0.30
Respiratory Rate 12-20, mean ± SD	21.26 ± 3.66	20.21 ± 1.90	22.57 ± 4.76	<0.0001
Oxygen SAT, mean ± SD	96.57 ± 2.82	97.34 ± 1.41	95.60 ± 3.72	<0.0001
Fever, n (%)	546 (46.4)	300 (40.9)	246 (55.5)	<0.0001
Cough n (%)	451 (38.4)	252 (34.4)	199 (44.9)	<0.0001
Tiredness/Body ache, n (%)	217 (18.5)	133 (18.1)	84 (19.0)	0.73
Sore Throat, n (%)	232 (19.7)	176 (24.0)	56 (12.6)	<0.0001
Runny Nose, n (%)	62 (5.3)	41 (5.6)	21 (4.7)	0.53
Loss of Taste, n (%)	23 (2.0)	18 (2.5)	5 (1.1)	0.11
Loss of Smell, n (%)	18 (1.5)	13 (1.8)	5 (1.1)	0.38
GI Symptoms, n (%)	2 (0.2)	1 (0.1)	1 (0.2)	0.72
Diarrhea, n (%)	84 (7.1)	36 (4.9)	48 (10.8)	<0.0001
Muscle Pain, n (%)	5 (0.4)	2 (0.3)	3 (0.7)	0.30
SOB, n (%)	209 (17.8)	65 (8.9)	144 (32.5)	<0.0001
Difficulty Breathing, n (%)	2 (0.2)	0 (0.0)	2 (0.5)	0.14
Chest Pain or Pressure, n (%)	44 (3.7)	14 (1.9)	30 (6.8)	<0.0001
Loss of Speech or Movement, n (%)	0 (0.0)	0 (0.0)	0 (0.0)	-
Abdominal Pain, n (%)	37 (3.1)	15 (2.0)	22 (5.0)	0.005
Nausea, n (%)	25 (2.1)	13 (1.8)	12 (2.7)	0.38
vomiting, n (%)	56 (4.8)	20 (2.7)	36 (8.1)	<0.0001
Decrease Oral Intake, n (%)	43 (3.7)	9 (1.2)	34 (7.7)	<0.0001
Dizziness, n (%)	14 (1.2)	6 (0.8)	8 (1.8)	0.13
Headache, n (%)	150 (12.8)	104 (14.2)	46 (10.4)	0.058
DM, n (%)	194 (16.5)	44 (6.0)	150 (33.9)	<0.0001

HTN, n (%)	216 (18.4)	47 (6.4)	169 (38.1)	<0.0001
Cardiac Disease, n (%)	109 (9.3)	17 (2.3)	92 (20.8)	<0.0001
Asthma, n (%)	42 (3.6)	9 (1.2)	33 (7.4)	<0.0001
Chronic Lung Disease, n (%)	31 (2.6)	4 (0.5)	27 (6.1)	<0.0001
Chronic Kidney Disease, n (%)	73 (6.2)	9 (1.2)	64 (14.4)	<0.0001
Kidney Transplant, n (%)	21 (1.8)	2 (0.3)	19 (4.3)	<0.0001
Cancer, n (%)	92 (7.8)	17 (2.3)	75 (16.9)	<0.0001
Liver Disease, n (%)	21 (1.8)	4 (0.5)	17 (3.8)	<0.0001
Lung Transplant, n (%)	3 (0.3)	0 (0.0)	3 (0.7)	0.053
Liver Transplant, n (%)	18 (1.5)	4 (0.5)	14 (3.2)	<0.0001
Autoimmune Disease, n (%)	18 (1.5)	5 (0.7)	13 (2.9)	0.002
WBC 3.9 - 11, mean ± SD	6.03 ± 2.95	5.62 ± 2.33	6.06 ± 3.00	0.36
Neutrophil 30-70, mean ± SD	61.83 ± 16.53	61.22 ± 14.06	61.88 ± 16.75	0.81
Neutrophil Absolute 1.35 - 7.5, mean ± SD	3.83 ± 2.50	3.55 ± 1.94	3.86 ± 2.55	0.45
Lymphocytes 23-60, mean ± SD	26.14 ± 13.91	26.20 ± 12.28	26.14 ± 14.07	0.98
Lymphocytes Absolute 1.5 - 4.3, mean ± SD	1.43 ± 1.12	1.37 ± 0.71	1.43 ± 1.15	0.75
Platelet Count 155-435, mean ± SD	214.84 ± 88.15	215.98 ± 76.21	214.73 ± 89.27	0.93
Alive Hospital Discharge, n (%)	1136 (96.6)	733 (100.0)	403 (91.0)	<0.0001

Discussion

Our study of 1176 patients provides comprehensive overview of demographics, clinical features, and patients' outcome in a tertiary center in Saudi Arabia Compared with the only previous published systematic review on the subject in Saudi Arabia.

Among the COVID-19 patients, fever and cough were the most common clinical signs and symptoms, similar to the study conducted in China (1) and to the study conducted by Alsofayan et al [1]. across all regions of Saudi Arabia, while muscle pain, short of breathing, and GI symptoms are uncommon [1].

15.8% (n=1176) of our study population of all age groups were Asymptomatic, 18 patients were pediatric which put these at high risk for disease transmission.

Our study did not find significant differences between Adults and pediatrics in terms of most common laboratory abnormalities (low lymphocytes and high neutrophils).

Conclusion

Our study provides a comprehensive characterization of clinical features among COVID-19 patients. Fever and cough were the most common clinical signs and symptoms, while muscle pain, short of breathing, and GI symptoms are uncommon.

Ethical Considerations/Consent Documents

All confirmed Covid-19 patients presenting to Emergency department at KFSHRC in Riyadh from March –July 2020 are included, no exclusion of specific gender, age, and racial or ethnic groups. Patient consent is not required; patients will not be contacted for follow up or any missing information. Patient confidentiality will be maintained.

Organization & Management

MA conceive the study, study design, and contribution to the manuscript and oversight. EB contributes to the manuscript, background research and referencing, data collection, provided statistical advice on study design, and analyzed the data.

Conflict of Interest

None.

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