The clinical features of COVID - 19 in a group of Iraqi patients: A record review

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Abstract
Background: The number of coronavirus infection cases has increased rapidly since early reports in the December 2019 in China. But data on the clinical features of infected peoples is variable from one country to the other.
Objective: Studying clinical features of patients with a positive RT PCR COVID – 19, in a group of Iraqi patients.
Patients and Methods: This is a record review study of 200 patients with a confirmed COVID - 19, conducted in Al Immam Al Kadhimain Medical City from 1 May to 30 August 2020, the diagnosis of patients during this period. Data about demographic and the clinical characteristics have been recorded.
Results: The study included 200 patients with 133 (66.5%) males and 67 (33.5%) females, and age range of 14- 89 years, with mean age 46.4 years. A history of contact with a COVID -19 positive case was found in 80 patients (40%), Ischemic Heart Disease in 11 patients (5.5%), hypertension 34 (17%), diabetes mellitus 36 patients (18%). The most frequently seen age group was between 21-39 years (76 patients - 38%). The most frequently seen symptoms were fever 76.5% and generalized weakness 73%. A statistically significant association was found between age and dyspnea (p = 0.014) and also diarrhea (p = 0.035), as well as between gender and rhinorrhea (p = 0.08) and nausea and/ or vomiting (p = 0.005).
Conclusion: In this study fever and generalized weakness were the most common symptoms in COVID patients. The clinical features of COVID disease can be affected by age and gender of patients.
Keywords: Clinical features, COVID - 19, Iraqi patients.

Introduction:
COVID - 19 is a new infectious disease caused by a SARS-CoV-2 virus, which is manifested primarily as an acute respiratory disease with an interstitial alveolar pneumonia. However it can affect other organs including the heart, kidneys, nervous system, blood and the digestive tract (1). Coronaviruses are subdivided into four types: α-CoV, β-CoV, γ-CoV, and δ-CoV depending on the basis of the phylogenetic clustering. SARS-CoV-2 which causes COVID - 19 belongs to β group (2, 3). Infection with the novel coronavirus leads to development of an acute respiratory syndrome COVID - 19 (4). It is a complex pathogen because of the ability for infecting multiple hosts, and causing different diseases in spite of a common association with the acute respiratory infections in the humans (5). The droplet transmission can occur when the person is in close contact (about one meter) with another person who has the respiratory symptoms (like cough or sneeze) and is at a high risk to have the nasal and/ or oral mucosa or the conjunctiva exposed to the potentially infective droplets (of more than 5-10 μm in diameter) (6). A recent study revealed that the viral load detected in asymptomatic people was similar to that in symptomatic patients, which suggests the transmission potential from symptomatic or asymptomatic people (7). To limit the spread, regionally and globally many countries have adopted measures including lockdowns, closing airports and borders, and restrictions of travel to decrease the transmission (8). The incubation period of COVID - 19 can be up to 14 days from the time of exposure, (a median is 4 - 5 days) (7). The Infection is reported in all age groups including children. The majority of cases are mild, presenting with a flu-like illness. The common features of COVID - 19 are fever, cough, fatigue and myalgia (9). The features of upper respiratory infection as rhinorrhea and sputum are uncommon, except in children, with leucopenia.
Patients and Methods:

Study design and participants
This is a record review study of 200 patients who had been confirmed as COVID – 19, conducted in Al Imamain Al Kadhimain Medical City from 1 May to 30 August 2020, when the diagnosis were during this period, patients were either hospitalized or treated as outpatients.

Definitions
COVID - 19 was confirmed by the detection of SARS-CoV-2 RNA, in the swab samples from throat using a virus nucleic acid detection kit COVID-19, by a real-time polymerase chain reaction (RT-PCR). The case definition of the confirmed infection with SARS-CoV-2 was made according to the guidance from World Health Organization (WHO) (18). Confirmed patients were either hospitalized or treated as outpatients, these whom treated as outpatients have a record saved in public health department, from which data took.

Data collection
A COVID - 19 data collection form was designed to collect the data including demographics and clinical features. The following information was collected for each patient: Age, gender, risk factors (ischemic heart disease, hypertension, and diabetes mellitus), COVID - 19 exposure history, symptoms (fever, dyspnea, nasal congestion, cough, rhinorrhea, sore throat, diarrhea, generalized weakness, and headache).

Inclusion criteria: All patients who have clinical features of COVID - 19 and positive a RT - PCR from the throat.

Exclusion criteria:
1- Patients with negative RT - PCR of throat.
2- Patients with incomplete data in the medical records.

Statistical Analysis: The collected data were entered and analyzed using SPSS (Statistical Packages for Social Sciences) version 20. Data were classified into qualitative and quantitative. The quantitative data were classified into parametric and non-parametric according to the normality tests. For nominal qualitative data, the Chi square and the Fisher exact tests were used for association. For quantitative data the mean measuring tests was used. P-value of < 0.05 was considered as statistically significant.

Results
Two hundred patients were included in this study, of whom 133 (66.5%) were males and 67 (33.5%) were females, with an age range of 14- 89 years and a mean age of 46.4 years. A history of contact with a COVID – 19 case was found in 80 patients (40%), ischemic heart diseases (IHD) in 11 (5.5%), hypertension in 34 (17%), and diabetes mellitus in 36 (18%), table 1. Table 2 shows the distribution of the patients by age group. More than a third of the cases fell in the 21-39 years group with 76 patients (38%), followed by those 40-59 years with 66 patients (33%), and those ≥60 years with 52 patients (26%).

Table 1:- Demographical features of the patients with COVID_19

| Variables                      | Number | %    |
|--------------------------------|--------|------|
| Age (mean ± SD) (range)        | 46.39 ± 18.01 (14-89) |
| Gender                        |        |      |
| Male                          | 133    | 66.5 |
| Female                        | 67     | 33.5 |
| History of contact with COVID - 19 case | 80     | 40   |
| IHD                            | 11     | 5.5  |
| Hypertension                   | 34     | 17   |
| Diabetes mellitus              | 36     | 18   |

Table 2: Distribution of the patients according to the age and gender

| Age group (Years) | Males | Females | Total | % |
|-------------------|-------|---------|-------|---|
|                   | Number | Number  | Number|   |
| < 20              | 3      | 3        | 6     | 3 |
| 21-39             | 55     | 21       | 76    | 38|
| 40-59             | 44     | 22       | 66    | 33|
| ≥60               | 31     | 21       | 52    | 26|
| Total             | 133    | 67       | 200   | 100|

Table 3 show that fever was the most frequent symptom (76.5%), followed by generalized weakness (73%), cough and dyspnea (65%) each, headache (59%), sore throat (58%), nausea and vomiting (28%), and rhinorrhea and diarrhea (25%) each. The table also shows the distribution of these clinical features by gender with a statistically significant association between gender and rhinorrhea (p = 0.08) and nausea and/ or vomiting (p = 0.005), both being higher among females than males. Table 4 shows a statistically significant association between age group and dyspnea (p = 0.014) and diarrhea (p = 0.035), but not with other symptoms.
in China (23) reported that 40% of patients were between 19-40 years and 53% between 41-65 years, and only 3% between 10 - 11 years. A summary of report from the Chinese center of Disease Control and Prevention (CDC) (32), shows the age distribution to be as follows: ≥ 80 years (3%), 30-79 years (87%), 20-29 years (8%), 10-19 years (1%), and <10 years (1%). These studies together with the China CDC reports indicated that general population is susceptible to the SARS-CoV-2 infection, regardless the age. The clinical features of patients with the COVID-19 in the present study include fever (76.5%), generalized weakness (73%), cough and dyspnea (65%) each, and rhinorrhea and diarrhoea (25%) each. The most common symptoms reported by Chaolin (29) were fever (98%), cough (76%), headache (8%), while 55% developed dyspnea. Yousef in Saudi Arabia (33) reported fever (85.6%), cough (89.4%), sore throat (81.6%), runny nose (72%), and headache (27.3%). Clinical studies showed that the occurrence of diarrhoea ranges from 2% - 50%, and it may appear before or after the onset of respiratory symptoms. Analyses revealed that the overall percent of diarrhoea is 10.4% (34). Barnaby in Singapore (35) reported Sore throat at (61%), rhinorrhea (6%) which may be due to the small number of cases in this study. Kim (36) reported headache in 31.4% and rhinorrhea in 26.2%. Clinicians must be aware about COVID-19 and consider the possibility of the COVID-19 even in the absence of fever, generalized weakens, or even respiratory symptoms to ensure the appropriate investigation for the diagnoses. Dyspnea and diarrhoea had a statistically significant association with age in the present study, while other symptoms did not. Liu (37) found that only sore throat had a statistically significant association with age. Nicholas (38) found an age risk in the susceptibility to infection and the probability to have clinical symptoms of COVID-19, ranging from about 20% in children to about 70% in older adults. The present study found a statistically significant association between gender and rhinorrhea and nausea and/or vomiting. A previous study found that male patients were susceptible to have more severe symptoms in comparison with females (39). The definite factors underlying such difference remain unknown. The differences between males and females in their immune response to infectious diseases, inflammation and autoimmunity show that females appear to respond more vigorously to viral infections and produce more antibodies in response to the infection and vaccination (40). The limitations of this study include not classifying the patients according to the WHO classification for severity (mild, moderate, severe and critical cases), and the small number of cases in comparison to the cases of COVID-19 in Iraq. In conclusion, this study showed that fever and generalized weakness were the most common symptoms in COVID patients. The clinical features of COVID disease can be affected by the age and gender of patients.

### Table 3: Clinical features of the patients with COVID-19 distributed by gender

| Clinical feature            | Males | Females | Total | P Value |
|----------------------------|-------|---------|-------|---------|
|                            | No.   | %       | No.   | %       |        |
| Fever                      | 102   | 76.7    | 51    | 76.1    | 153    | 76.5   | 0.53   |
| Generalized weakness       | 94    | 70.7    | 52    | 77.6    | 146    | 73     | 0.192  |
| Dyspnea                    | 89    | 66.9    | 41    | 61.2    | 130    | 65     | 0.25   |
| Cough                      | 85    | 63.9    | 45    | 67.2    | 130    | 65     | 0.385  |
| Headache                   | 74    | 55.6    | 44    | 65.7    | 118    | 59     | 0.113  |
| Sore throat                | 74    | 55.6    | 51    | 62.9    | 125    | 58     | 0.444  |
| Nausea and/or Vomiting     | 29    | 21.8    | 27    | 40.3    | 56     | 28     | 0.005  |
| Rhinorrhea                 | 29    | 21.8    | 21    | 31.3    | 50     | 25     | 0.08   |
| Diarrhoea                  | 36    | 27.1    | 14    | 20.9    | 50     | 25     | 0.219  |
| Total (100%)               | 133   | 67      | 79    | 60      | 212    | 100    |        |

### Table 4: Distribution of the cases by age group and clinical features

| Symptom                      | Age group (years) | P. Value |
|-------------------------------|-------------------|----------|
|                               | < 40 | 40-60 | ≥ 60 |        |
| Dyspnea                       | 52   | 36    | 42   | 0.011  |
| Cough                         | 53   | 41    | 36   | 0.721  |
| Fever                         | 63   | 49    | 41   | 0.839  |
| Rhinorrhea                    | 24   | 14    | 12   | 0.496  |
| Sore throat                   | 51   | 37    | 27   | 0.549  |
| Nausea and/or Vomiting        | 22   | 19    | 15   | 0.954  |
| Diarrhoea                     | 27   | 13    | 10   | 0.097  |
| Headache                      | 53   | 38    | 27   | 0.482  |
| Generalized weakness          | 59   | 44    | 43   | 0.143  |

### Discussion

In this study there were twice males as females. The World Health Organization data has also shown a male predominance in Iraq in June 2020, when out of the total of 12,366 infected by COVID-19, 56% were males (19). Ali et al (20) has also reported a higher percentage of Iraqi COVID-19 patients among males (59.7%). Dawei in Wuhan, China (21) reported a smaller male predominance of (54.3%). The age of our patients ranged from 14-89 years, with a mean of 46.4 years. Omran in Basrah, Iraq (22) reported a median age of 45 years, with the youngest patient being 13 years old, while Xiao-Wei in Wuhan, China (23) reported a median age 41 years and a range of 32-52 years. A history of contact with a COVID – 19 case was present in 40% of our patients. Most of COVID-19 cases were linked to person-to-person transmission through close contact with a case with respiratory symptoms (24, 25) or close contact with a person during the incubation period, later confirmed to be COVID-19 (26, 27). Nitesh from India (28) reported the history of close contact with a case to be 38.1%. In the present study, 5.5% of the patients had IHD, 17% had hypertension, and 18% had diabetes mellitus, while Chaolin in China (29) showed IHD to be present in 15%, hypertension in 15%, and diabetes mellitus in 20%. Zhou in China (30) reported a much higher percentage of hypertension in his study (30%), diabetes (19%), and coronary heart disease (8%). Sarfraz in Saudi Arabia (31) reported Hypertension in (41%), Diabetes (18%), and Cardiovascular disease (18%) of their cases, but the latter study had a small number of cases (51 patients). In the present study, the highest percentage of patients were between 21-39 years (38%), follow by those 40-50 years (33%), and the lowest were those ≤ 20 years (3%). Xiao-Wei
Author’s Contributions:
First author data collection and analysis
Second author data collection
Third author data analysis
Forth author data analysis

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السمات السريرية للمصابين بمرض كوفيد 19 في مجموعة من المرضى العراقيين: مراجعة البيانات

المقدمة: أجريت هذه الدراسة بمعالجة البيانات إلى 200 من المرضى المصابين بمرض كوفيد 19 في مجموعتين طبية في مدينة وهران، في الصين، لكن الملاحظة عن السمات السريرية للمصابين المصابين مختلفٌ من دولة إلى أخرى. وتحديد السمات السريرية للمصابين بمرض كوفيد 19، من مزج السمات السريرية، قد يكون من المفيد لدراسة التقييم المستمر للمستقبل الموجب في مجموعة من المرضى العراقيين.

المنهجية: اجريت هذه الدراسة بمعالجة البيانات ل 200 من المرضى المصابين بمرض كوفيد 19 في مجموعتين طبية في مدينة وهران، في الصين.

النتائج: عدّت هذه الدراسة 200 مريض، 133 (66.5%) من الذكور و 67 (33.5%) من الإناث. تراوحت أعمارهم بين 14-89 سنة، مع متوسط العمر 46.4 سنة. كانت نسبة المصابين بحالات كوفيد 19، 46.4%، المصابين بفيروس كوفيد 19، 17%، المصابين بمرض مزمن، 17%، المصابين بداء السكري، 18%، اللقاحات العلاجية، 14.9%, الإصابات، 38.3%. وعند إضافة هذه الوعود إلى الأعراض الوراثية، 9.5%، الإصابة، 14.9%, الإصابات، 38.3%.

الاستنتاجات: هذه الدراسة كانت الحمي والتحول الأعراض الأكثر شيوعًا في مرضى COVID. يمكن أن تتأثر السمات السريرية لمرض COVID من المصابين بمرض كوفيد 19، المرضى العراقيين.

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