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Original Article

The first 40-days experience and clinical outcomes in the management of coronavirus covid-19 crisis. Single center preliminary study.

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Jaffar S Allawi *
Hassan M Abbas**
Jawad I Rasheed***
Tharwat I Sulaiman****
Ali A Gatea**
Faris Al-Lami*****
Jawad K Al-Diwan*****
Adnan M Al-jabory******
Muhammed Waheeb******
Yasir I Abdurudha**
Laith S Al-Kaabi**
Saeb J Al-Shuwaili**
Tawfeeq W Tawfeeq**
Musaab K Alabboodi**
Abdulrazak A Abdulrazak **
Wameedh Qays Al-Samak**

Abstract:

Background: The World Health Organization (WHO) has announced that coronavirus covid-19 is a pandemic. The first case of covid-19 was confirmed in Iraq on the 24th of February 2020, which was of an international student who travelled recently to Iraq. This review is the universal data analysis of the first 40-days of coronavirus covid-19 patients admitted to Medical City Teaching Hospital (MCTH) including their clinical outcome.

Objective: We have conducted this study to describe the first 40-days experience in management of corona virus covid-19 and the clinical outcomes of patients treated with a protocol adopted in the first of March 2020 (described in the attachment).

Patients and methods: This is a preliminary descriptive study demonstrating all actions conducted in MCTH to manage coronavirus patients. The study included 79 patients who were RT-PCR positive out of 469 suspects who were screened in the outpatient clinic of MCTH according to WHO criteria. The clinical outcomes were defined as complete clinical and immuno-virologic recovery, non-recovery and death. Complete recovery was defined as negative RT-PCR conducted twice after disappearance of clinical symptoms. Death was subclassified as death within 24 hours and after 24 hours in the hospital or intensive care unit. Non-recovered cases were defined as persistent symptoms or persistent positive RT-PCR after disappearance of clinical symptoms. The treatment protocol was Oseltamivir 75 mg BID for 5 days with Hydroxychloroquine (400mg BID first day then 200mg BID for 5 days) for moderate cases, adding Kaletra (Lopinavir-Ritonavir (200/ 50 mg) 2 tablets PO BID 5 days for severe cases, and ribavirin for critical cases.

Results: The total number of symptomatic patients and PCR positive was 79 patients out of 469 screened suspects (16.84%). The mean age was (47.18 -/+ 18 years,and are prevalent among the age group (40-50 years). There were 59 male patients (74.68%) in comparison and 20 female patients (25.31%). There were 13(16.45%) patients with moderate disease ,15(18.98%) patients with severe disease, and 13(16.45%) patients with very severe disease required admission to critical care. The clinical recovery (free of clinical symptoms) was seen in 84.9 %. Complete recovery was seen in 41 (51.89%) patients, death within 24 hours was seen in 6 patients (7.5%) while confirmed death after 24 hours was seen in 4 (5%).

Conclusions: The treatment protocol is well conducted in this center with promising rate of complete recovery and excellent rate of clinical recovery. The high initial death rate was compensated after three weeks with more orientation and experience of medical staff and peoples about the disease.

Keywords: Covid-19, Iraq, MCTH, treatment, hydroxychloroquine, Azithromycin.

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Introduction:

SARS-CoV-2 is the etiological agent of coronavirus disease 2019 (COVID-19) which is started as pulmonary infection to progress in a minority of patients into multi-organs involvements and may end with death. In early stages the international health systems tried to contain the virus as first step in public health principle in managing epidemics (1).

** Ministry of Health, Baghdad, Iraq*
***Medical city teaching hospital.*
**** Arab Board for Medical Specialization Correspondence Author: sc@meciq.edu.iq*
***** Department of Surgery, College of Medicine, university of Baghdad. tharwatsulaiman@yahoo.com.*
****** Department of Community Medicine, College of Medicine, University of Baghdad.*
******* Department of Medicine, College of Medicine, University of Baghdad.*

On Jan.7 China isolated the virus and subsequently named 2019-nCoV by WHO (2). On March 9,2020 about 90000 cases were reported with more than 3100 deaths in china and then the disease spread to more than 100 countries (3). WHO has announced the virus as pandemic which necessitates a secondary and tertiary level of intervention (4). In Iraq we have the first confirmed case on 24th of February 2020, which was of international student travelled recently to Iraq.

Patients and methods:

This is a descriptive study demonstrating all actions conducted in MCTH to manage the crisis of corona. It included all patients that have been defined as contact, suspect, confirmed cases of coronavirus covid-19 according to WHO definition during a forty days period (1st of March-10th of April). Medical city teaching hospital (MCTH) is a secondary – tertiary level of services in Baghdad, MCTH manages thousands of patients daily in all disciplines of medicine. The faculty of MCTH adopted a system to screen all attending patients in all hospitals and screen them for coronavirus. (3)

Corona checkup stations

1. Suspect covid19 cases pathways
2. Confirmed covid19 cases pathways
3. Isolation hospital for confirmed covid19 cases
4. Quarantine for suspect covid19 cases
5. Quarantine for direct unprotected contact (Medical staff) for 14 days

We have conducted this study to describe the first forty days experience in management of corona virus covid-19 and the clinical outcomes of patients treated with a protocol adopted in first of March 2020.

Corona Checkup station: Checkup stations in all hospitals are centers to isolate the suspect cases through screening all the attending patients to this big center. Through simple questionnaires and temperature measurement. The staff are fully equipped with personal protective equipment (PPE).

Suspect covid19 cases pathway

All suspect covid19 cases should pass through this isolated path to test for RT-PCR for covid-19 and routine CT scan of the chest and admitted as suspect case in isolated rooms and general supportive care given waiting for the result of RT-PCR for covid-19, when it comes positive, the patient will be transferred to the Confirmed covid19 cases pathway and then to Isolation hospital for confirmed covid19 cases. If the results come negative, the patient will be sent in home Quarantine for 14 days, he should come to Corona Checkup station once he has symptoms or he finished 14 days Quarantine.

Confirmed covid19 cases pathway

When the result of RT-PCR for covid-19 comes positive, the patient will be transferred to the Confirmed covid19 cases pathway and then to Isolation hospital for confirmed covid19 cases.

Isolation hospital for confirmed covid19 cases

All cases with positive RT-PCR for covid-19 will be admitted the isolation hospital (Al-Shafa center for corona crisis). They will be classified as:

1. Mild cases (no pneumonia in the CT scan)
2. Moderate cases (pneumonia in the CT scan)
3. Severe cases (pneumonia in the CT scan) with multi- organ failure.
4. Critical cases indicated for ICU admission

Quarantine for direct unprotected contact (Medical staff) for 14 days. A quarantine for medical staff who are defined as unprotected contact, they will stay 14 days with twice daily follow up for symptoms**.**

Medical treatment protocol

The clinical outcomes were defined as recovery, non-recovery, or death. Clinical recovery was defined as disappearance of clinical symptoms. Complete recovery was defined as negative RT-PCR twice after disappearance of clinical symptoms. Death was subclassified as death on arrival which was the death within 24 hours of receiving the patients at any step, while confirmed hospital death was defined as death after 24 hours in the hospital or intensive care unit. Non-recovered cases were defined as persistent symptoms or persistent positive RT-PCR after disappearance of clinical symptoms. The treatment protocol: (5) The patients were classified as mild, moderate, severe and critical. The treatment protocol was approved by the committee of Covid-19 virus, this protocol was primary and to be updated according to the new studies and evidences all over the world. The protocol is using medication as a compassionate use to save the life of patient. All patients should have positive RT-PCR for covid-19. The attending specialist will consider all precautions and do the necessary adjustment accordingly. The addition of Azithromycin was considered after the third week as part of therapy. Completely recovered patients were defined as negative RT-PCR conducted twice after disappearance of clinical symptoms at least 24 hours). They were discharged home to be in home quarantine for 14 days to be tested again for Covid-19 virus by RT-PCR.

Initial treatment protocol adopted by Ministry of Health in Iraq March 1, 2020.

Severity	Finding	Protocol
Mild	No pneumonia in the CT scan	Conservative treatment No specific medication
Moderate	Pneumonia in the CT scan	Oseltamivir 75 mg BID for 5 days Hydroxychloroquine (400mg BID first day then 200mg BID for 5 days)
Severe	Pneumonia in the CT scan with multi-organ failure	Oseltamivir 75 mg BID for 5 days Hydroxychloroquine (400mg BID first day then 200mg BID for 5 days) Kaletra (Lopinavir-Ritonavir (200/ 50 mg) 2 tablets PO BID 5 days
Critical	Indicated for ICU admission	Oseltamivir 75 mg BID for 5 days Hydroxychloroquine (400mg BID first day then 200mg BID for 5 days) Kaletra (Lopinavir-Ritonavir (200/ 50 mg) 2 tablets PO BID 5 days Ribavirin

Results:
We have screened 469 suspect cases from all patients attending medical city according to WHO definitions of suspect cases. We have included 79 patients admitted with positive RT-PCR with clinical symptoms for the period from the first of March till the tenth of April. The mean age was (47.18 -/+ 18 years). the disease was prevalent among the age group (40-50 years). There were 59 male patients (74.68%) and 20 (25.31%) females. (Tab. 1)

Table (1) Patient's characteristics

Patients	No.	Mean age years	Standard deviation
Total positive cases	79 (100%)	47.18	18
Male	59 (74.68)	50.79	18.01
Female	20 (25.31%)	40.5	16.3
Prevalent age group	40-50 years		

The total confirmed cases in Iraq till tenth of April 2020. (2) was categorized as total number, death per day, recovered, and active cases as seen in figure (1).

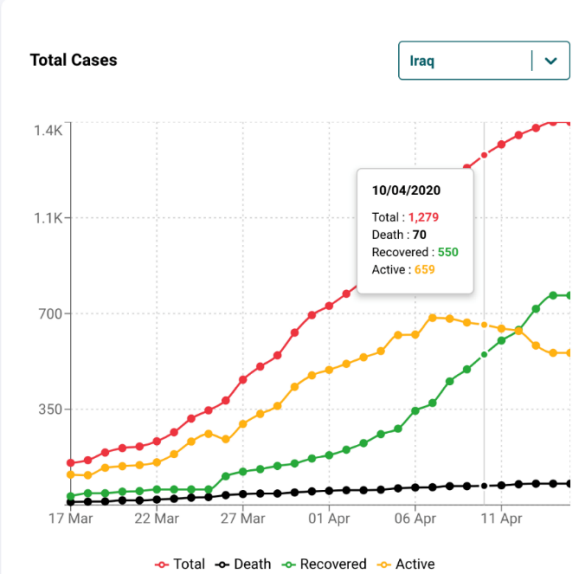

Figure (1) The total confirmed cases in Iraq till tenth of April 2020. (2)

Thirteen patients (16.45%) had moderate disease, 15 patients (18.98%) with severe disease, and 13 patients (16.45%) were admitted to critical care (tab. 2). Complete recovery was seen in 41 patients (51.89%), Death on arrival and within 24 hours was seen in 6 patients (7.5%) while confirmed death after 24 hours was seen in 4 patients (5%). During the first three weeks we have received 10 critical cases, six of them died within 24 hours representing 2/3 of total death. The rest of death was four cases which represent 1/3 of total death (tab. 3).

Table (2) The clinical classification of patients.

Patients	No.	Percent
Mild	38	48.10
Moderate	13	16.45
Severe	15	18.98
Critical	13	16.45
Total	**79**	**100%**

Table 3 The clinical outcomes of positive patients.

Patients category	No.	Percent
Total No of positive RT-PCR patients	79	100
Recovered patients	41	51.89
All death	10	12.65
Death within 24 hours.	6	7.5
Confirmed death	4	5.06
Unrecovered patients	38	48.1

Recovery was confirmed in 41 patients (51.89%), they were discharged home to be in home quarantine for 14 days to be tested again for Covid-19 virus by RT-PCR. We have 38 patients (48.1%) who did not completely recover, seventeen patients (44.73%) were free of symptoms but with persistent RT-PCR after five days of treatment. only 2 patients (5.26%) remained symptomatic after five days (tab.4).

Table 4 The clinical distribution of unrecovered patients.

Patients category	No.	Percent
Unrecovered patients (total)	38	100
Patient less than 5 days	19	50
Patient without symptoms after 5 days	17	44.73
Patient with symptoms after 5 days	2	5.26

Discussion:
The efforts of international health authorities have since focused on rapid diagnosis and isolation of patients as well as the search for therapies able to counter the most severe effects of the disease. In Iraq the action plan started very early with early checkup stations in the hospitals and airports and land ports. Till the tenth of April 10, 2020. Ministry of Health in Iraq has conducted 33889 tests for suspected cases. The total cases in Iraq is 1318, the recovery rate is 45.59 %, the case fatality rate (CFR) is 5.46 %. It was 8.1% within the first three weeks, but now it is 5.46%. (2) Medical city teaching hospital (MCTH) is a secondary – tertiary level of services in Baghdad. The faculty of MCTH adopted a system to screen all attending patients in all hospitals and screen them for Covid19 virus (5). In the absence of a known efficient therapy and because of the situation of a public-health emergency, it made sense to investigate the possible effect of chloroquine/hydroxychloroquine against SARS-CoV-2 since this molecule was previously described as a potent inhibitor of most coronaviruses, including SARS-CoV-1Preliminary trials of chloroquine repurposing in the treatment of COVID-19 in China have been encouraging, leading to several new trials (6). Iraqi scientific committee at ministry of health adopted a management plan and treatment protocol in the first of March 2020 with the detection of the first case (7). The case fatality in MCTH was 7.5% within the first three weeks, and 5.06% in the second three weeks which is within the range of international figures. Highest figures of death were seen in other countries during early stages of epidemic as in China, the overall CFR was higher in the early stages of the outbreak (17.3% for cases with symptom onset from 1- 10 January) (8). The mean age was under 50

years. (the disease was more prevalent in younger females). This could be due to the fact that Iraq still has younger population in comparison with Europe (9). The ratio of 3:1 indicates the predominance of male gender. This figure needs further explanation through taking a national study although the same results were found in most countries (10). The study showed that we have good complete (immuno-virologic) recovery rate of 51.1 %. The clinical recovery (free of clinical symptoms) was seen in 84.9 % after five days of treatment. The protocol adopted by MOH Iraq was successful. although 48.1% of unrecovered patients have persistent positive RT-PCR after 5 days, the persistence of symptoms after this protocol was 2% which indicate excellent results as compared to other countries (8).

Conclusions:

there was a very good rate of recovery which is promising. The treatment protocol is well conducted in this center with excellent clinical recovery. The high initial death rate was compensated after three weeks of pandemic which is within the same pattern as in other countries.

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References

1. *World Health Organization (WHO). Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected Interim guidance 13 March 2020.*
2. *Last information on corona covid-19 https://doh.saal.ai/ Accessed April 11, 2020.*
3. *Coronavirus disease 2019 (COVID-19) Situation Report – 43 who.org. Accessed March3, 2020.*
4. *WHO. Novel coronavirus (2019-nCoV) SITUATION REPORT -51-11-March,2020. Accessed 2/4/2020*
5. *Management plan of Coronavirus COVID-19 in Iraq moh.gov.iq. Accessed April 10 1, 2020.*
6. *Multicenter collaboration group of departments of science and Technology Commission of Guangdong Province for Chloroquine in the treatment of novel coronavirus pneumonia. Zhonghua Jie He He Xi Za Zhi. 2020;43(3) ;185-188*
7. *Treatment protocol of Coronavirus COVID-19 in Iraq moh.gov.iq. Accessed March 1, 2020.*
8. *World Health Organization (WHO). Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). Accessed April 10 1, 2020.*
9. *Iraq demographics profile 2029.*https://www.indexmundi.com/iraq/demographics_profile.html. *Accessed April 10 1, 2020.*
10. *Chaolin Huang, Yeming Wang, Xingwang Li,et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020; 395: 497–506*