



## Early Treatment of Elderly Covid-19 Patients by using Hydroxychloroquine and Interferon Beta 1a.

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### Abstract

**Objective:** hydroxychloroquine (HCQ) and interferon beta 1a (IF1) were among suggested treatment plans in patients with covid-19 with controversial results. The present study aims to evaluate the role of the abovementioned treatment agents in patients with covid-19 infection resident in an elderly house in Iran.

**Method:** In this prospective case series study, 87 patients with confirmed covid-19 infection were included. For the patients, HCQ (200 mg three times a day for 10 days) was prescribed. Clinical and laboratory outcomes including postoperative symptoms, vital signs, and treatment prognosis (death or discharge after two weeks was taken).

**Results:** 87 patients (23 men and 64 women, with a mean age of  $71.36 \pm 11.38$  years) were included in the study. Three patients have been admitted to the Intensive Care Unit center which two of them were expired. The most common side effect of a combination drug was myalgia followed by headache.

**Conclusion:** Using HCQ in combination with IF1-beta acquired lower clinical manifestations in contrast to previous drug agents So they can be investigated in further clinical trial phases.

**Keywords:** Covid-19; hydroxychloroquine; interferon 1beta; treatment prognosis

### Introduction:

Covid-19 is a high-concern pandemic with a high transmission rate throughout the world and until now there was no approved treatment plan to encounter the disease (1). Some studies were evaluated the role of Hydroxychloroquine (HCQ) against viral agents as *in-vitro* studies and the results showed that the abovementioned one, inhibits viral replication (2-5). Whereas in the clinical phase the efficacy of HCQ was controversial (6-9). A randomized clinical trial conducted on 67 Chinese patients showed a significant decrease in body temperature, cough, and recovery time following 400 mg HCQ prescription per day for 5 days (7). The reduction in postoperative symptoms was dose-dependent in another clinical trial (9, 10). Whereas other studies showed no significant difference in clinical outcomes including treatment prognosis after HCQ treatment with different doses (11, 12).

As the abovementioned studies exhibited controversial results, in this case series study we aimed to evaluate and compare the role of HCQ with IF1 beta in patients resident in an elderly house in Iran.

### Method:

This study was conducted on patients resident in an elderly house in Yazd, Iran from April to June of 2021. After one death report of the elderly home inhabitants on 10 April 2021. The clinical findings suggested that the expired case was infected with COVID-19 and so the laboratory check-up for the other inhabitants started. All patients were COVID-19 positive according to the RT-PCR test from the nasopharyngeal sample (13). The results suggested that all cases had infected with covid-19 and so early treatment with a combination of HCQ and IF1-Beta was started. 200 mg HCQ three times a day for 10 days was prescribed. Prescription in all participants has been conducted whether the patients had symptoms or not. Patients with severe clinical stage were transferred to the Intensive Care Unit. Demographic data including age and gender, and also laboratory data including vital signs (blood pressure and arterial oxygen level and heartbeat), clinical symptoms including cough, headache, myalgia, vomit, diarrhea, conjunctivitis, rhinorrhea, respiratory distress, sore throat along with systemic disease including diabetes mellitus, asthma were evaluated. The need for Vitamin C, D, Favibavir, Corticosteroids also was evaluated. The treatment prognosis including the need to transfer to the Intensive Care Unit and death were evaluated. All measurements were taken two weeks after administration. we prescribed HOQ to patients every 12 hours for 5 days. In total, we

used 10 or one blisters for each patient. And we prescribed prednisolone and vitamin C to some patients, and others did not take these drugs.

Statistical analysis was conducted using IBM SPSS (IBM, IL, Chicago) Version 24.0. The data were reported as frequency and in percent. Chi-square and Exact fisher test were conducted to analyze the correlation between the type of treatment agent and clinical outcomes. The significance was considered as  $p < 0.05$ .

### Results:

87 patients (23 men and 64 women, with a mean age of  $71.36 \pm 11.38$  years) were included in the study. Seven patients (8.04%) had diabetes mellitus, 14 patients (13.7 %) had hypertension. The prevalence of side effects following injection of HCQ and IB1-beta combination was as such: 28 patients (32.2 %) had a headache. 20 patients (23.0 %) exhibited cough, 15 ones (17.2 %) pharyngeal swab, 34 (39.1 %) myalgia, 10 ones (11.5 %) vomitus, 9 patients (10.3 %) diarrhea, 8 (9.3 %) conjunctivitis, 25 (28.7 %) rhinorrhea, 8 (9.3 %) respiratory distress and 15 (17.2 %) showed sore throat.

The mean and standard deviation of continuous data were illustrated in table 1:

	N	Minimum	Maximum	Mean	Std. Deviation
Arterial Oxygen	87	50.00	97.00	91.4138	5.54171
Heart beat	87	48.00	90.00	78.0920	8.55031
Ventilation	87	2.00	25.00	12.6092	2.16396
Body Temperature	87	36.80	40.00	37.5839	.53088

**Table 1:** The mean and standard deviation of vital signs of patients, two weeks after the follow-up

Findings	N	(%)
Signs and symptoms		
Headache	28	32.2
Cough	20	23.0
Swab	15	17.2
Myalgia	34	39.2
Vomits	10	14.6
Diarrhea	9	13.0
Conjunctivitis	8	9.2
Rhinorrhea	25	28.7
Sore Throat	15	17.2
Systemic Disease		
Diabetes Mellitus	20	23.8
Hypertension	35	40.2
Cardiac Disease	11	12.6
Asthma	3	3.4
COPD	11	12.6

**Table 2:** Most common clinical findings in patients

Seven patients have been administrated to the Intensive Care Unit which three of them expired. All three were male gender and two of them had COPD disease. This Four patients exhibited some allergic reactions to the drugs including rash and anaphylaxis.

### Discussion:

The clinical efficacy of HCQ and IF1-beta combination is controversial in clinical studies. More evidence is needed to confirm its clinical efficacy. In this case series we investigated 87 elderly patients affected by COVID-19 in a elderly center of Iran. the follow-up duration was two weeks. most of the patients had mild clinical condition during admission. In this condition, the clinical condition doesn't get worsen as only seven patients were admitted to the Intensive Care Unit and only three of them were dead. Also, most of the patients were well-tolerated to drug side effects (14) and the most clinical presentation was postoperative myalgia (39.1%) and headache (32.2 %).

In a study conducted by Rahnamai et al (14), 80 patients participated in a randomized clinical trial study, the results suggested that injection of IF1-Beta enhanced the rate of participants discharge significantly. The results of another systematic review study revealed that IF1-Beta injection, enhanced discharge level effectively (15). In this study, the combination of HCQ with IF1-beta lowered the mortality rate effectively.

Despite our findings, our study had limitations, incomplete data in some patients make our results analysis more challenging, also unrestricted inclusion criteria, make our study findings less applicable.

In conclusion, based on our findings and its comparison with other studies, it has been confirmed that Hydroxychloroquine and Interfrone-1beta can be used as a combination drug agent since they have low mortality rate and postoperative side effects, although their clinical implication needs more evidence in cases of randomized clinical trials and larger samples.

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