



USAGE OF HYDROXYCHLOROQUINE CHEMOPROPHYLAXIS AMONG CLINICIANS IN A TERTIARY CARE TEACHING HOSPITAL– A DESCRIPTIVE STUDY

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ABSTRACT

Background: Covid pandemic took a heavy toll on millions of lives across the globe. Initially, no effective vaccines were available against this disease. WHO had advocated the use of Hydroxychloroquine as a chemoprophylactic agent for health care workers during those initial few months of COVID pandemic. But there were many concerns and confusions regarding safety of HCQ chemoprophylaxis even among clinicians.

Methods: The current questionnaire based cross sectional study was conducted among 57 clinicians of Government T.D. Medical College, Alappuzha for a period of three months from October 2020 - December 2020 after getting ethical committee clearance.

Results: Among the 57 participants, only 6 participants had taken HCQ for chemoprophylaxis. None of the subjects on HCQ chemoprophylaxis developed any symptoms suggestive of COVID while they were on drug. All the subjects stated self - motivation as the reason behind starting chemoprophylaxis. None of the subjects developed any apparent side effects suggestive of chemoprophylaxis therapy. When enquired 'fear about cardiac complication' was the most common reason stated for not taking HCQ chemoprophylaxis (41.2%). Remaining participants stated other reasons like, unsure of effectiveness of hydroxychloroquine as chemoprophylactic agent, unawareness regarding HCQ chemoprophylaxis, contraindication for hydroxychloroquine and unavailability of drug, for not taking HCQ chemoprophylaxis.

Conclusion: Drugs with known dangerous complications are less likely to be consumed even if side effects are not so common. Properly addressing concerns of the consumers can have a huge impact on the success of chemoprophylaxis.

Key words: COVID 19, Hydroxychloroquine, chemoprophylaxis.

INTRODUCTION

Corona virus disease (COVID – 19), a global pandemic that brought the whole world to a standstill for multiple years, took a huge toll on the lives and economy. India also faced a highly turbulent journey during the global pandemic, which saw its healthcare infrastructure facing an emergency. Not

only India, various other countries also have been striving hardly to come up with various measures to prevent and treat this disease.

Since COVID -19 being a new disease there were only limited data regarding the pathogen and the disease, and this rendered various shortcomings in the management of disease. In the initial months of the pandemic no effective remedy had been developed to manage the disease, but several potential candidates like chloroquine, hydroxychloroquine, remdesivir, tocilizumab, convalescent plasma etc. has gained attention.^(1,2) One important challenge with COVID – 19 infection was the high chance of secondary infection and high numbers of asymptomatic carriers. So, prevention was considered as the best strategy that can be adopted to halt the rapid spread of disease. Chemoprophylaxis using an effective agent was of immense value at this stage. Unfortunately, there were no unanimously approved drug which could serve this purpose. Numerous studies have been registered in clinical trial using these drugs. Chloroquine (CQ) and hydroxychloroquine (HCQ) were among the most widely accepted agents used for chemoprophylaxis against COVID.

COVID -19 virus is a close family member of SARS CoV and MERS- CoV. CQ and HCQ has proved its efficacy in the treatment of these two infections also. Wang et al has stated that hydroxychloroquine can inhibit SARS CoV 2 growth in invitro medium. Studies have shown that SARS CoV and SARS CoV 2 uses ACE2 receptor for its entry into host cell and also for its replication.^(3,4) HCQ can inhibit entry of virus into host cell by glycosylation of these cell surface proteins. These drugs can prevent internalisation and replication of virus by concentrating in the lysosome. Additionally, the anti-inflammatory property and its action on cytokine release can alter the course of cytokine storm associated with the disease.⁽⁵⁾ Based on all these HCQ has been considered for repurposive use in the management of COVID -19.

Even though many studies favour the use of HCQ and CQ for chemoprophylaxis, some studies are against their use.^(6,7) Those studies have highlighted that CQ/HCQ can cause QT prolongation. In India ICMR has issued guidelines for the chemoprophylaxis of health care workers. But data regarding its usage among health professionals are still not available. At this background, where there are large number of conflicting information regarding usefulness of HCQ for chemoprophylaxis, we have done this study to see how many clinicians working at Government T D medical college have taken HCQ for chemoprophylaxis, along with their demographic profile and about their experiences with this drug.

AIM AND OBJECTIVES

The objectives of study were to find out the proportion of clinicians who took hydroxychloroquine for COVID 19 prophylaxis, to determine the factors which have influenced their decision regarding HCQ chemoprophylaxis and to determine the proportion of subjects who developed side effects due to HCQ chemoprophylaxis.

MATERIALS AND METHODS

This questionnaire based cross sectional study was conducted among the clinicians of Government T.D. medical college, Alappuzha for a period of three months from October 2020 - December 2020 after getting ethical committee clearance.

Inclusion criteria

Subject must be a doctor involved in clinical care of patients.

Exclusion criteria

Doctors who are not involved in clinical care of patients will be excluded.

Study procedure

Objectives of the study were initially explained to all the clinicians through social media group. Consent form as well as a structured questionnaire for the study were delivered to all clinicians who

treated COVID patients in a tertiary care centres google form, through e - mail. 57 clinicians gave consent and participated in the study. The clinicians who are on HCQ chemoprophylaxis were considered as one group and those clinicians who were not on HCQ chemoprophylaxis as another group.

Initial part of form had provision to obtain informed consent and after obtaining consent they could navigate through questionnaire proper. Majority of the questions contained optional answers and for questions without options, responses were given in one or two sentences. After completing the questionnaire subjects returned the form via mail and the responses were analysed.

Statistical Analysis

Data from google form has been transferred to Microsoft excel and statistical analysis was done using SPSS software.

RESULTS

Questionnaire was shared with more than 300 clinicians but only 57 participants gave consent to participate in the study. Out of the 57 participants, 6 have taken HCQ for chemoprophylaxis, while 51 participants haven't. Table 1 depicts the socio demographic characteristics of the study participants.

	HCQ as Covid prophylaxis		Total(N=57)
	Yes(n=6)	No(n=51)	
Age			
<30	0 (0%)	8(100%)	8 (14%)
30-39	2 (6.9%)	27(93.1%)	29 (50.9%)
40-49	4 (23.5%)	13(76.5%)	17 (29.8%)
≥50	0(0%)	3(100%)	3 (5.3%)
Gender			
Male	3(15%)	17(85%)	20(35.1%)
Female	3(8.1%)	34(91.9%)	37(64.9%)
Designation			
Junior Resident	0(0%)	15(100%)	15 (26.3%)
Senior resident	1(20%)	4(80%)	5(8.8%)
Lecturer	0(0%)	2(100%)	2(3.5%)
Assistant Professor	4(17.4%)	19(82.6%)	23(40.4%)
Associate Professor	1(11.1%)	8(88.9%)	9(15.8%)
Additional Professor	0(0%)	3(100%)	3(5.3%)

Table 1

While asking for the reason for avoiding HCQ chemoprophylaxis, 41.2% subjects stated that they were afraid about the cardiac complications of HCQ. Unsure of effectiveness of hydroxychloroquine as chemoprophylactic agent was the next reason stated (39.2%). Approximately 10% were unaware of the chemoprophylaxis program, 3.9% had contraindications to take HCQ, 3.9% had no specific reason and drug was not available for 2%. Subjects in HCQ group stated self-motivation as the reason for initiating HCQ therapy. None of the subjects have taken baseline ECG before or after starting HCQ therapy. None of them have experienced any side effects also. Only two subjects have been continuing HCQ therapy at the time of study while 4 of them have stopped it after one or two weeks. Fear of complication and toxicity was stated as the reason for stopping the therapy.

None of the clinicians on HCQ developed any symptoms suggestive of COVID while on HCQ therapy. At the same time 6 out of 51 Non HCQ subjects developed fever and sore throat in the same time period. COVID test was done by 3 subjects from HCQ group and 18 subjects from non HCQ group. None of the HCQ group subjects turned out positive while 3 from non HCQ group became positive for COVID 19 infection.

DISCUSSION

Even though WHO & MOHFW India has recommended the repurposive use of HCQ as a chemoprophylactic agent among health workers, our study revealed that large proportion of the clinicians were reluctant in taking the drug. One key factor which determines adherence to chemoprophylactic agent is the perceptions regarding side effects of drug therapy. Ahluwalia et al. had highlighted the need for properly addressing the concerns of subjects regarding potential side effects of medications as well as guiding the subjects about benefits of continuing drug therapy. Side effects threaten patient's compliance.⁽⁸⁾ Initially covid was an infection with unknown pathogenesis. Effect of pathogen on various systems were also unknown. Covid was also presumed to produce major side effects on cardiovascular system. Cardiac complications were the most commonly known side effect of HCQ. So, adding a drug which is thought to have cardiac complication won't be acceptable unless otherwise proved. Cardiac complications are known to occur only with prolonged use of HCQ. In COVID, how long the disease will persist and how long the prophylaxis has to be continued was a question.

HCQ chemoprophylaxis, being on an empirical basis & not based on any evidence, has clearly affected participant's choice of consuming the drug. Success of chemoprophylaxis is dependent on patient's belief regarding the effectiveness drug for the particular disease state. Addressing the concerns of drug consumer can have great impact on adherence to chemoprophylaxis.

LIMITATIONS OF THE STUDY

Monitoring for ECG changes in all the participants would have provided more information but it was not possible since the study was conducted during the COVID pandemic. As a result of restrictions prevailed during COVID pandemic it was difficult for us to motivate and recruit more participants to our study.

CONFLICT OF INTEREST: NIL

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