

# Knowledge And Practices Associated With Use Of Drugs For Prevention And Treatment Of Covid-19, During The Rapid Rise Period Of The Covid-19 Outbreak

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## Abstract

This study assessed the knowledge and practices associated with use of various drugs for the purpose of prevention and treatment of Covid-19, during the rapid rise period of the COVID-19 outbreak. A self-developed questionnaire was distributed online/offline to 397 participants via the authors' networks and through popular social media Platforms, later on collected and statistically analyzed. On analysis we found that most of the participants have moderate to good knowledge of COVID-19. Our study shows that drugs for prevention of Covid-19 were used significantly more by females as compared to males (p-value < 0.05). Healthcare worker's (HCW) use of drugs was quite high as compared to non-healthcare workers (NHCW) for prevention as well as for treatment of Covid-19 (p-value was significant < 0.05). ultivitamins, for prevention as well as treatment point of view (72.1% and 47.7% respectively). Next line of group used for preventive purpose was Antimalarials (Hydroxychloroquine/Chloroquine) used by 47.4% and then Ivermectin by 22.1% participants. Whereas from treatment point of view Antibiotics like Azithromycin and Doxycycline were next in line (used by 34.3% & 20.8% respectively).

**Keywords:** Knowledge & Practices, Covid-19, Prevention, Treatment, Pandemic

## Introduction

The COVID-19 pandemic represents the greatest global public health crisis since the pandemic influenza outbreak of 1918. Lots of unusual and intense measures have been adopted to control the rapid spread of the ongoing COVID-19 epidemic in India as well. People's adherence to control measures is affected by their knowledge, attitudes, and practices towards COVID-19. Several antiviral agents previously used to treat other Coronavirus infections such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) are being considered as the first potential candidates to treat COVID-19. Several other drugs were also used by medical fraternity and even by community itself to reduce the burden of this Covid pandemic. Review article by S. Esposito et al claims that some of the drugs showed promising result whereas some studies have disappointed [1].

However, the urgency to identify treatments that could turn the tide has led to the emergence of several investigational drugs as potential candidates to improve outcome, not only in the severe to critically ill patients but in general population as well. While many of these adjunctive drugs are being investigated in clinical trials, professional bodies have attempted to clarify the setting where the use of these drugs may be considered as off-label or compassionate use.

The Infectious Disease Society of America, World Health Organization and the Ministry of Health and Family Welfare of the central and state governments of India have guidelines/recommendations for management of COVID-19. Rohit et al states in their review article that all these state, national and international guidelines do not agree on recommendations and can cause undue confusion among already challenged and compromised medical system, related to management of Covid-19 [2]. The lack of similarity has been observed between various National and State guidelines with respect to different drugs, their dosages and duration. In the absence of definitive management protocols, many treatment regimens have been explored for prevention and treatment of COVID-19. Some of these treatments may have been tried out of desperation, and among these, some show initial promise. However, nothing very certain has been published as a result of rigorous clinical trials.

Liberal use of drugs is being observed during this rapid rise period of the COVID-19 outbreak for prevention as well as for treatment point of view. Specialists are doing their part through the rapid distribution of medical societal guidelines and participation in global, round the clock communication networks using media and social media platforms. These platforms provide a vehicle to exchange information for the rapid dissemination of knowledge not only among medical fraternity but also in General population. Approach of this study is to investigate the knowledge and practices associated with use of drugs for prevention and treatment of Covid-19. Especially certain group of drugs which, investigators feel, are being used a lot in the society like few Antimalarials (HCQS, Chloroquine), Antiparasitic (Ivermectin), Antivirals (Remdesivir, Lopinavir and Ritonavir), Antibiotics (Azithromycin, Doxycycline) and even Multivitamins (Vit.C, Zinc, Vit.D) for COVID-19 prevention and cure during the rapid rise period of this outbreak. Assessments on participants' Use of medications towards COVID-19 and their knowledge for this Covid prophylaxis and treatment will enhance our knowledge regarding practices and will help in careful evaluation of drugs used for Covid-19, which will help to safeguard the mankind in longer run.

## Materials and method

This study was conducted in Department of Pharmacology of Santosh Medical College Ghaziabad, U.P. India from August 2020 to December 2020. It was approved by Institutional Ethics committee of Santosh deemed to be University, Ghaziabad, NCR, Delhi. It was a cross sectional survey conducted among 397 participants with the help of a well-designed questionnaire, designed by investigators considering all guidelines for clinical and community management of covid-19 by the Government of India for the people of India. Questionnaire enquired demographic profile as well as knowledge and practices related to drugs used for prophylaxis and treatment of Covid-19. All the persons taking any of the medications either for Prophylaxis or even for Treatment of Covid, irrespective of their gender, status as Confirmed cases of Covid or even undiagnosed cases, Symptomatic or Asymptomatic, Health Care workers(HCW) and Non-Health care workers(NHCW), all were included in the study. Participants who were not willing and people of less than 18yrs of age were not included in this study. Designed questionnaire was provided to the participants by offline and online mode via the authors' networks with residents and popular social media Platforms. Informed consent was procured from all the participants. Later on, all these questionnaires were collected and statistical analysis was done considering all the variables. A system of knowledge-based question scoring was used to measure the level of participants knowledge by giving a score of 1 for the correct answer and 0 score for an incorrect or blank response for each question. The total score of participant's knowledge was converted to a percentage, over a range of 0 to 100%. The knowledge scores were classified as mild ( $\leq 60\%$ ), moderate (60.01–80%),

and good knowledge ( $\geq 80.01\%$ ). The results of participants knowledge of COVID-19 and practices related to that, were expressed as frequencies and percentages. We used Frequency and percentage for qualitative data and mean and standard deviation for quantitative data for all the duly filled questionnaires. Used Microsoft Excel database, SPSS trial version and Pearson's Chi Square test used for association between two qualitative data.

## Results

Out of 397 participants, five samples were dropped out considering insufficient information provided and total 392 samples were analyzed. Out of those 392 participants, 220 (56.1%) were females and 172 (43.9%) were males. Maximum numbers of respondents were between the age group of 18 - 30 years. 70.4 % respondents were healthcare workers whereas 29.6 % were non healthcare workers. Around 88% people reported no co morbidities whereas maximum number of associated co morbidity found in remaining 22% was hypertension. Our study shows that most of the participants have moderate to good knowledge of COVID-19, related to general information, route of transmission, symptomatology and even methods of prevention of COVID-19. Health care Workers were much more aware about the use of drugs for Covid-19 as compared to non-Health care workers ( $p$  value  $< 0.05$ ). Total 158 (40.3 %) participants used medications to 'prevent' themselves from covid-19 infections, whereas 67 patients used drugs for 'treatment' of covid-19. Significant gender difference ( $p$  value  $< 0.05$ ) was observed in the prophylactic use of drugs (More Females used drugs for prevention as compared to Males). More number of Drugs were used by healthcare workers (46%) as compared to non-healthcare workers (27.5%) for prevention of Covid-19. Same was found true for treatment purpose as well, in contrast to 7.7% non-healthcare workers 21.3% healthcare workers used drugs for treatment [Fig. 1].

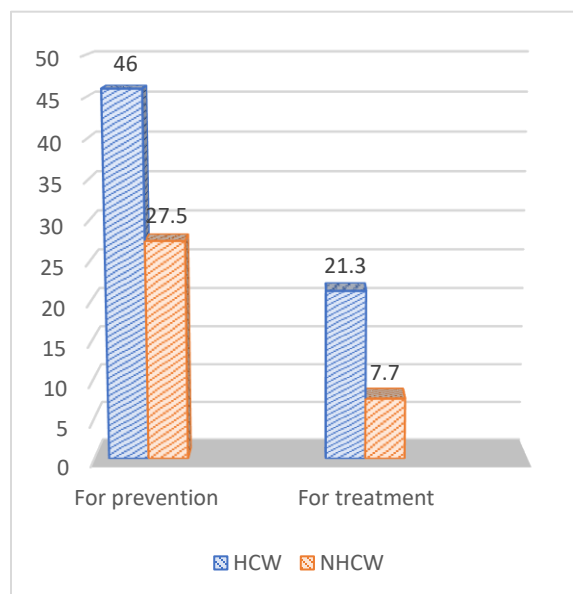


Fig.1: Percentage of drugs used by HCW and NHCW for prevention and treatment of Covid-19

The group of Drug which used by maximum number of participants was Multivitamins (with Vit.C, Zinc, Vit.D), 64.9% people used Multivitamins either for treatment or prevention from Covid-19. Antimalarials (HCQS/Chloroquine) used by 42.2% participants. Antibiotics group was next in line with 24.8% use (Azithromycin used by 16.4% & Doxycycline by 8.4% participants. Antiparasitic drug Ivermectin used by 21.3% users and Antiviral group used by only 14.6% people with Remdesivir by 5.7%, Lopinavir by 4.8% and Ritonavir by 4% [Fig. 2].

## Discussion

Although time is very tough for mankind and medically crucial but difficult times have always helped us to understand better. It is not a time to assume, react or take desperate measures against this Demon called Covid-19. However, we had started and are still using so many drugs on the grounds of emergency use for prevention and treatment, but now it is high time that we should start following scientific evidences and modify our therapeutic protocols accordingly. Indian Council of Medical Research (ICMR) recommended the use of Hydroxychloroquine for prophylaxis in asymptomatic health care workers, care givers for suspected or confirmed patients and household contacts of confirmed patients in March 2020.

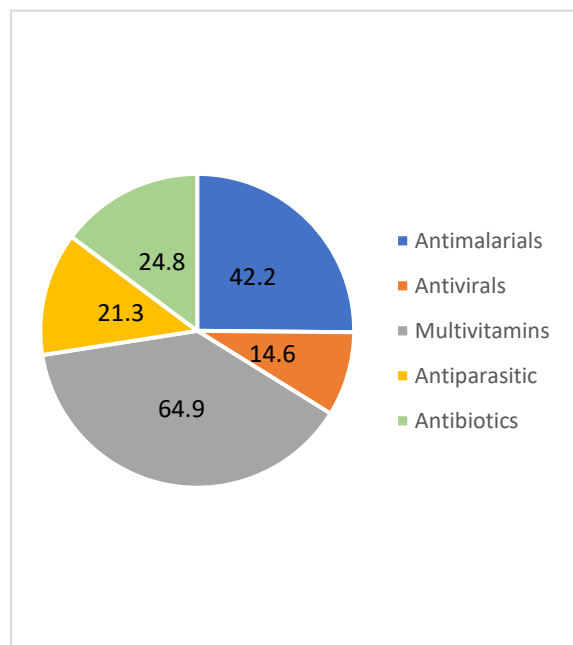


Fig.2: Percentage of group of Drugs used for Prevention and Treatment of Covid-19

Several Randomized clinical trials with no conclusive evidence are available related to the efficacy of Chloroquine and Hydroxychloroquine. Hydroxychloroquine also shows contraindications in the form of several adverse effects associated with it such as maculopathy, retinopathy and QTc prolongation and its label says that it should be used with caution in vulnerable populations such as children, pregnancy, lactation and the elderly. Despite this, self-medication with hydroxy-chloroquine, has been a point of concern even for the National Task Force of ICMR[3]. Several review articles and original articles have promised the in vitro efficacy of Hydroxychloroquine in SARS and now in Novel Corona virus, Covid-19[4,7]. In our study as well, 42.2% of participants used this group of drugs for prevention as well as for treatment purpose.

Ivermectin is another drug which has exhibited Antiviral Potential against Novel corona Virus as well, by several researchers in their studies An Original research article by Na Li et al revealed a broad-spectrum antiviral property of ivermectin by showcasing proper medical evidences in the form of molecular mechanism behind the use of Ivermectin for SARS-CoV- 2 infections [5]. Debate is still going on and need of some more evidences from more Randomised Controlled Trials (RCTs) and dose- response studies to support its use has been advised by few researchers. Almost 21.3% participants of our study have also consumed Ivermectin for prevention as well as for treatment of this Covid-19.

A review article by Daniel Echeverría-Esnal states the role of Azithromycin in the treatment of Covid-19. It's immunomodulatory property has shown to reduce the chances of mortality and ventilator support in several other viral diseases as well. It's effect has been observed in several retrospective observational studies, where Azithromycin has been used along with HCQS. Need of clinical trials is actually there to determine the role of Azithromycin in Covid-19 [6]. In spite of so much lack of clarity almost 16.4% participants of our study have used this drug and Doxycycline also being used from Antibiotic group by 8.4% people.

As this disease is Viral in nature so role of Antivirals has to be there, which has been emphasized by several Investigators by their articles. Few other researchers like Yang Song et al in spite of acknowledging the role of Antivirals in Covid-19 like use of remdesivir, early in the course of illness for potential clinical recovery has been emphasized on more well-designed RCTs before creating a final conclusion on efficacy of these Antivirals in SARS-CoV-19 [7]. Our study also observed use of these antiviral drugs, in 14.6% of respondents.

Surprise factor was the use of Multivitamins in our study. Maximum number of respondents of our study i.e. 64.9% used Multivitamins for prevention as well as for therapeutic purpose. Although very few studies are available on the use of multivitamins and those too states that there are insufficient evidences to recommend the use of MultiVitamins for prevention or for therapy of Covid-19 [8,9].

**Conclusion:** This study shows that most of the participants have moderate to good knowledge of COVID-19, related to general information, route of transmission, symptomatology and even methods of prevention of COVID-19. As anticipated Health care workers were having extensive knowledge as compared to Non health care workers. Interestingly people of Joint family had much more knowledge related to Covid-19, as compared to people having Nuclear families, which can be explained by dissemination of knowledge from one to another family members. There are findings suggestive of extensive use drugs for prevention and cure among health care workers, as compare to Non health care workers, owing to their knowledge and awareness related to this particular disease and drug use associated with it. Much more drug use for prophylaxis in females can be justified by their inherent nature of protection. Role of education (Graduate and above) with much more knowledge about use of drugs for prevention and treatment of Covid-19 has also been observed in the study.

Multivitamins are used by highest number of people for both prevention as well as cure. For prevention HCQS and for treatment Antibiotics were drugs of maximum use. All these results were helpful in assessing the actual current position related to knowledge and practices associated with Covid-19. In spite of so much of haziness on the role of these medications in Covid-19, we observed a huge consumption of these drugs and we can apply this information for better understanding and to design better educational programs and to take measures for betterment of mankind.

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## Conflict of interest

No Conflict of interest

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