

# Assessment of Effectiveness of Various Medicines and Other Supportive Measures used in the Management of Covid-19 Positive Patients: A Telemedicine-based Study

Lalima Kumari<sup>1</sup>, Kamal Nayan<sup>2</sup>, Anuj Kishor Shukla<sup>3\*</sup>, Abdul Razzaq Ahmed<sup>4</sup>, Ghazala Suleman<sup>5</sup>, Hoda Lotfy Abouzeid<sup>6</sup>, Muhammad Haseeb Rana<sup>7</sup>, Mudita Chaturvedi<sup>8</sup>, Saurabh Chaturvedi<sup>9</sup>

<sup>1</sup>BDS, MDS. Dentist, Primary Health Center, Gaya, Health Department, Govt Of Bihar.

<sup>2</sup>BDS, MDS. Reader, Dept. Of Prosthodontics and Crown and Bridge, Mithila Minority Dental College and Hospital, Laheriasarai, Darbhanga, Bihar.

<sup>3</sup>BDS, MDS. Senior Resident, Department of Dentistry, Government Medical College. Ratlam.

<sup>4</sup>BDS, FCPS. Assistant professor, Department of Prosthetic Dentistry, College of Dentistry, King Khalid University, Abha, Saudi Arabia.

<sup>5</sup>BDS, FCPS. Assistant Professor, Department of Prosthetic Dentistry, College of Dentistry, King Khalid University, Abha, Saudi Arabia.

<sup>6</sup>BDS, DDS, MDS. Lecturer, Department of Prosthetic Dentistry, College of Dentistry, King Khalid University, Abha, Saudi Arabia.

<sup>7</sup>BDS, FCPS. Assistant Professor, Department of Prosthetic Dentistry, College of Dentistry, King Khalid University, Abha, Saudi Arabia.

<sup>8</sup>BDS, MDS, PhD. Clinical Director, Department of Oral and Maxillofacial Pathology, 32 pearls multispecialty dental clinic, Lucknow, India.

<sup>9</sup>BDS, MDS, PhD. Assistant professor, Department of Prosthetic Dentistry, College of Dentistry, King Khalid University, Abha, Saudi Arabia.

## Corresponding Author:

**Dr. Anuj Kishor Shukla**

BDS, MDS. Senior Resident,

Department of Dentistry, Government Medical College.

Ratlam, Madhya Pradesh, India.

Email- smc1@live.in

## Abstract-

**Objective-** This study aimed at assessing the effectiveness of medicines used and other supportive as well as preventive measures followed by covid-19 positive patients with mild illness under home isolation and thus providing an overall summary to manage home isolated covid-19 positive patients .

**Materials and method-** The study was conducted at a telemedicine center for home isolated patients, established at District Magistrate Office Gaya, Bihar, India. The data for study was collected from patient's record from 28 July 2020 to 27 October 2020. Study included a total of 124 Covid-19 positive patients (34 females and 90 males) with mild illness. Course of treatment in these patients were assessed using their records as well as through phone calls/ video calls.

**Result-** Patient included in the study reported the intake of mainly five medicines which were being dispatched to them by disaster management unit (labeled as pentagon of allopathic medicines) along with other preventive measures. 28 Patients out of 124 had reported to take homeopathic medicines in addition to pentagon. Very few patients reported to use some other medicines based on prevailing symptoms. Following this course of treatment, all patients were recovered without developing any complication except two. These two patients were hospitalized due to mild respiratory distress and recovered well after few days of treatment.

**Conclusion:** Combination of pentagon of allopathic medicines and other preventive measures along with use of homeopathic medicines have been found to be very effective in treatment of patients with mild illness.

**Key words-** Covid-19, Effectiveness, Azithromycin, Antihistamine, Antipyretic, Multivitamin, Homeopathic medicine.

**Tob Regul Sci.™ 2021;7(6-1): 6988-6995**

**DOI: doi.org/10.18001/TRS.7.6.1.27**

#### **Introduction:**

Coronavirus disease 2019 (Covid -19) is a viral disease caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) which was declared a global pandemic by the World Health Organization on 11th March 2020.<sup>1</sup> Today even after lapse of more than one complete year of the onset of this deadly pandemic, there are no proven medicines available against the virus. Fortunately, vaccine had been developed by some companies and vaccinations have already been started but to vaccinate the entire world will certainly take one or more years and only the future could tell whether these vaccinations are successful or not. Till then we have to rely on currently available clinical management strategies like using drugs repositioning and following various preventive and control measures of covid-19 infection including supportive care with supplemental oxygen and mechanical ventilator support.

COVID-19 symptoms and severity vary widely.<sup>2-3</sup> More than 80% of covid-19 infected individuals have been reported to be asymptomatic or presented very mild symptoms. However in around 20% of patients, the disease takes a more severe form which mainly include individuals with comorbidities like diabetics, hypertension, COPD, cardiovascular problems, elderly and many more.<sup>4</sup> In such individuals, covid-19 infection may lead to acute respiratory distress syndrome (ARDS) and even death. Government has established various types of isolation centers depending on the severity of disease. Initially all patients were either being admitted to hospitals or were kept in isolation centers based on risk factors and disease severity. Subsequently, the guidelines were modified to allow home isolation of asymptomatic or mild cases.

There is very little articles/original research on the management of covid-19 infected patients and that all are mainly based on the management of severe or high risk cases. Studies on asymptomatic /mild cases are limited. And hence the present study aimed to explore the management of patients with mild illness which accounts for majority of cases. This study was conducted to find out the effectiveness of medicines and other supportive measures used in the treatment of covid-19 positive patients with mild illness( mild symptoms like fever, cough, sore throat, loss of smell and taste without any respiratory discomfort or asymptomatic patients) and isolated at home.

#### **Materials and methods:**

Study included a total of 139 patients. Data for study was collected from a telemedicine unit, Health Dept., Govt. of Bihar established at District control room, Gaya for management of covid-19 patients through phone calls as well as through video calls. Data included patients whose calls were received as well as were called between 28-07-2020 to 27-10-2020. All patients were diagnosed covid-19 positive based on either reverse transcription- polymerase chain reaction assay (RT-PCR) or rapid antigen testing methods. Out of 139 patients, 15 patients were found to be negative

and hence were excluded from the study. Thus a total of 124 patients (90 males and 34 females) were assessed for the effectiveness of various drugs used and other supportive measures followed.

This telemedicine set up which was being operated in collaboration with Bihar State Disaster Management Authority was established for providing various facilities like medical counseling to the Covid-19 home isolated patients by a doctor through phone calls as well as through video calls, arrangement of ambulance, distribution of medicines to home isolated patients, arrangement of Covid-19 testing facility at home wherever required etc. List of medicines being dispatched to Covid-19 positive patients were taken from this telemedicine center for assessment and related query as well as other information regarding various supportive as well as preventive measures followed by Covid-19 patients were collected through phone calls. Data thus obtained were collected and analyzed to provide details of management protocols followed by patients in Gaya district of Bihar and their effectiveness.

#### Result:

Data collected from a total of 124 patients (90 males and 34 females) were analyzed in this study whose demographic details are given in Table 1.

Table 1: Demographic details of patients:

Age group	Number of patients (N=124)	Percentage
0-10	7	5.64
11-20	13	10.48
21-30	45	36.29
31-40	26	20.96
41-50	18	14.51
51-60	11	8.87
61-70	4	3.22
71-80	0	0
<b>Sex</b>		
Male	90	72.58
Female	34	27.41

Comorbidities were found to be present in 21 patients, hypertension being the most common (52%) (Table 2).

Table-2: Details of patients with comorbidities:

Comorbidity	Number of patients (21)	Percentage
Elderly above age 60	6	28.57
Diabetes	3	14.28
Hypertension	11	52.38
Cardiac abnormality	2	9.52
Lupus erythematosus	1	4.76
Patient on ART	1	4.76

Out of 124 patients, 20 patients were asymptomatic and rest suffered from mild symptoms like fever, sore throat, cough and cold, loss of smell and taste etc. (Fig.1).

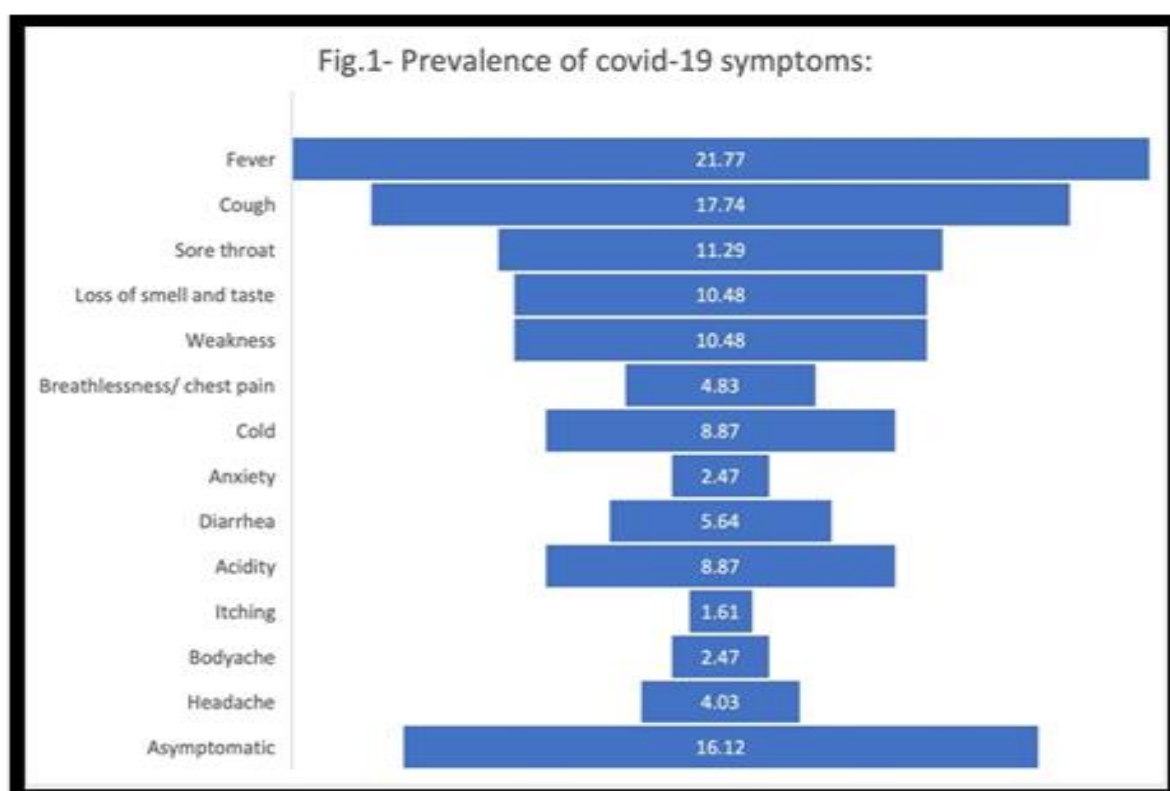


Fig.1 Prevalence of Covid-19 Symptoms

Medicine kit being dispatched to the patients included five medicines (termed as pentagon of medicines in the study, Table-3), Azithromycin, antipyretic, antihistamine along with vitamin C and multivitamin tablets. It also included hydroxychloroquine tablets in a separate pouch which was instructed to be taken by personnel in close contact with the patient, without any symptoms. Tablet azithromycin was found to be taken by all the patients in the study except the asymptomatic ones. Antihistamines and antipyretics were taken by 51 and 35 patients respectively. Vitamin C and multivitamin tablet were found to be taken by each and every patient. Other preventive measures like hot water intake, gargle with warm/saline water, intake of Kadha and intake of milk with haladi were also confirmed by all patients in the study. About 23 percent patient reported the intake of homeopathic medicines along with the allopathic medicines. In addition to above mentioned medicines; some other medicines were also used depending on the symptoms and as advised mainly by the doctor at the telemedicine counseling center. Following this protocol 122 patients were recovered after an average of 12.86 days (time taken from being diagnosed positive to being negative) without any need of hospitalization however 2 patients, one 61 year old and the other 28 year old, both without any comorbidities needed to be admitted to the hospital but got recovered after treatment. All patients were found to be perfectly fine after an average time period of 25 to 30 Days.

Table 3: Medicines and other preventive measures used by patients:

Medicines	Number of patients
<b>1.Pentagon of medicines with other preventive measures (a+b) :</b>	
a) Pentagon of medicines used:	
Azithromycin	
Antihistamine (Cetirizine)	104
Antipyretics (Paracetamol)	51

Vitamin C	35
Multivitamin	124
b) Other preventive measures:	124
Hot water intake, gargle with warm/saline waterIntake of Kadha, Intake of milk with turmeric	124
<b>2.Pentagon of medicines along with homeopathic medicines: (1+ homeopathic medicines) :</b>	28
Aconite	23
Arsenic	24
Bryonea	2
Nux vomica	2
Oqimumsanc Q	1
Carboveg	1
Kalibich	2
Ipeeac	1
Chirata	1
<b>3. Other medicines used in addition to 1 and 2:</b>	
a) Vitamin D	7
b) Rantac/ antacid	11
c) ORS	8
d) T. Flagyl/ Oflox-OZ	7
e) Carvol plus steam inhalation	8
f) Antianxiety drug	1
g) Derriphylin	1
h) Permethrin lotion	1

**Discussion:**

In the year 2020, Covid-19 shattered the entire world and still in 2021, sure shot medicine to treat Covid-19 has not yet emerged. Vaccination has already been started but it will take longer to reach common people and to immunize the entire world. Yet its effectiveness is question marked. And hence the knowledge of medicines used to manage the disease is must for each and every district/state/country. Very few original studies have been reported providing details of medicines used in the management of mild covid-19 cases and hence this study aimed at summarizing the details of various medicines as well as other supportive measures used to manage covid-19 cases, thus providing a guideline which could help to fight against this pandemic in a better way.

In the present scenario, treatment of covid-19 infection is symptomatic and mainly repurposing the available medicines. Antiviral drugs, antibiotics, corticosteroids and anti-inflammatory drugs are frequently used in the treatment regimens. However patients under home isolation are usually presented with mild symptoms and in such cases the main line of treatment is based on prevailing symptoms. Many adjunctive therapies like ascorbic acid, azithromycin, corticosteroids and others are used as supportive care in the absence of specific antiviral disease or vaccine. In the present study, almost all patients had taken pentagon of medicines which included tablet azithromycin, paracetamol, levocetirizine, vitamin C and multivitamin tablets along with other preventive measures like intake of warm water, kadha, milk with turmeric and warm water or saline gargle.

Azithromycin was shown to significantly reinforce the efficacy of hydroxychloroquine in the treatment of 20 patients in a study by Gautret and coworkers, where this combination was found to give excellent clinical outcome by eliminating virus efficiently. They also found to have highest virological cure rate in their 6 cases, almost 100% viral clearance in nasopharyngeal swabs after 6 days of treatment as compared to 16 controls and 14 hydroxychloroquine alone group.<sup>5</sup> Guenmez<sup>6</sup> in his study had also showed the viral clearance on the use of azithromycin along with lincomycin. In a good note, *in vitro* inhibition of SARS-CoV-2 replication by azithromycin has recently been demonstrated.<sup>7</sup> Present study also supports the use of azithromycin in mild cases as all the patients in the study were absolutely fine after taking the drug and recovered well.

Reznikov LR et al<sup>8</sup> in a study found that antihistamines like diphenhydramine, hydroxyzine, and azelastine exhibit direct antiviral activity *in vitro*. Study done by Blanco JIM et al<sup>9</sup> also showed that use of antihistamines and azithromycin in early treatment of symptomatic patients and use of antihistamines in asymptomatic and high risk patients and close contacts had excellent outcomes. Ours study also support the use of antihistamines in treating mild cases as patients were recovered well after the use of antihistamines.

Fever has been reported to be one among most common symptoms of COVID-19, in 45%–89% of the adults<sup>10,11</sup> and 42% of the children<sup>12</sup> suffering from mild to moderate forms of the disease. And hence antipyretic like paracetamol play a vital role in symptomatic management of the disease.

Nutrition has also been reported to play an important role in managing covid19 as it boost immunity. Hence Covid-19 patients are encouraged to take vitamin C, vitamin D, and multivitamin tablets to build up immunity. Zhang L and Liu Y had suggest to use adequate vitamins<sup>13</sup> and other micronutrients as worse nutritional status represents a negative prognostic factor for covid-19.<sup>14</sup>

For boosting immunity, the Ministry of Ayush in March 2020 had recommended drinking warm water, daily practice of Yogasana, Pranayama and meditation for at least 30 mins, Drinking herbal tea / decoction (Kadha) made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger). Munakka (Raisin) and hot milk with turmeric is also recommended - once or twice a day. These recommendations were further supported by study done by Dharmendra Kumar Maurya and Deepak sharma<sup>15</sup> who found that the herbs used in Kadha preparation had the potential to inhibit different stages of Covid-19 infection. The active ingredients present in these herbs were found to bind with viral proteins and provide prevention against the infection. In the present study, almost all patients have followed these Ayush recommendations and have been found to be recovered from the disease without any need of oxygen support or being admitted to the hospital.

Warm/ saline water gargle is a very common and effective home remedy treatment in India for sore throat. Some studies have also suggested that Salt water may be helpful in clearing some of the viruses when we spit the water after gargle.<sup>16</sup> Warm water gargle was also recommended by Ayush ministry and all of the patients in the present study had followed the same.

The Ayush ministry in January 2020, also recommended the use of homeopathic and unani medicines in the prevention of covid19 infection. Arsenicum album 30 could be taken in empty stomach daily for three days as a prophylactic medicine. In the present study, 24 patients had confirmed the intake of homeopathic medicines, arsenic along with pentagon of allopathic medicines used in the treatment and recovered well. Kallias and co workers<sup>17</sup> in their study had suggested to use homeopathic medicines in the early stages of disease such as Aconitum napellus or Arsenicum Album or Eupatorium perfoliatum or Gelsemium or Ipecacuana, in the later stages Bryonia or Phosphorus as the main drugs, and in the final stages Antimonium Tartaricum or Baptisia or Camphor Officinalis. Aconite, Arsenic, Bryonia etc had been reported by present study to be used by many patients, aconite by 18.54% and arsenic by 19.35% of patients.

Few other allopathic medicines (Table-3) have been found to be taken by some patients based on symptoms. Acidity/ bloating, diarrhea, and weakness had been reported to be important symptoms in certain patients and hence antacids, antidiarrheal drugs with intake of ORS for maintaining hydration level could be used to subside the symptoms.

Steam inhalation by Karvol plus had been reported by many of the patients to get relief from nasal congestion in our study. Gaurishankar S and others<sup>18</sup> in their study had found that herbal steam inhalation could prevent the growth of virus or could boost the host immunity and hence had recommended the use of herbal steam inhalation using plants specially Eucalyptus globulus, Vitex negundo and Justicia adhatoda.

Than HM and co workers<sup>19</sup> had suggested only supportive therapy like nutrition enhancement, rehydration, and oral antitussives and expectorants for treatment of mild cases as they reported 5 patients with mild, nonspecific symptoms like fever, dry cough and sore throat were found not to develop any serious complications like ARDS.

### Conclusion:

Present study has shown that covid-19 positive patients with mild symptoms can be efficiently managed at home with the use of certain specific medicines. Pentagon of allopathic medicines, azithromycin, antihistamines, antipyretics, vitamin C and multivitamin tablets along with other preventive measures and also in combination of homeopathic medicines can be used to treat majority of patients. Even some patients with comorbidities can also be managed using this treatment protocol when monitored carefully.

**Conflict of interest-** NIL

### Acknowledgments-

The authors extend their appreciation to the Deanship of scientific research at King Khalid University, KSA for funding this work through research groups program under Grant No. RGP.1/343/42.

### References

1. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020 [Internet]. Who.int.2020. Available from: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19--11-march-2020>. [Last cited 2020 Jun 18].
2. Guan WJ, Ni ZY, Hu Y, et al. Clinical Characteristics of Coronavirus Disease 2019 in China. *N Engl J Med*. 2020; 382(18):1708-1720.
3. Jiang F, Deng L, Zhang L, Cai Y, Cheung CW, Xia Z. Review of the Clinical Characteristics of Coronavirus Disease 2019 (COVID-19). *J Gen Intern Med*. 2020; 35(5):1545-1549.
4. Maragakis L. Coronavirus and COVID-19: who is at higher risk? *Johns Hopkins Medicine*. 2020.
5. Gautret P, Lagier JC, Parola P, Hoang VT, Meddeb L, Mailhe M, et al. Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. *Int J Antimicrob Agents*. 2020;105949.
6. Guvenmez O, Keskin H, Ay B, Birinci S, Kanca MF. The comparison of the effectiveness of lincocin and azitro in the treatment of covid-19-associated pneumonia: a prospective study. *J Popul Ther Clin Pharmacol* 2020;27(S Pt 1):e5-10
7. Touret F. In vitro screening of a FDA approved chemical library reveals potential inhibitors of SARS-CoV-2 replication. *Sci. Rep*. 2020;10:1–8.
8. Reznikov LR, Norris MH, Vashisht R et al. Identification of antiviral antihistamines for COVID-19 repurposing. *biochemical and biophysical research communications*. 538(2021)173-179.
9. Blanco JIM, Bonilla JAA, Homma S et al. Antihistamines and azithromycin as a treatment for COVID-19 on primary health care – A retrospective observational study in elderly patients. 67(2021)101989
10. Guan, WJ, Ni, ZY, Hu, Y, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med* 2020; 382: 1708–1720.

11. Lechien JR, Chiesa-Estomba CM, Place S, et al. Clinical and epidemiological characteristics of 1420 European patients with mild-to-moderate coronavirus disease 2019. *J Intern Med*. Epub ahead of print 30 April 2020. DOI: 10.1111/joim.13089
12. Lu, X, Zhang, L, Du, H, et al. SARS-CoV-2 infection in children. *N Engl J Med* 2020; 382: 1663–1665.
13. Zhang L, Liu Y. Potential interventions for novel coronavirus in China: a systematic review. *J Med Virol*. 2020;92:479–90.
14. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020;395:1054–62.
15. Maurya DK, Sharma D. Evaluation of traditional ayurvedic Kadha for prevention and management of the novel Coronavirus (SARS-CoV-2) using in silico approach. *J Biomol Struct Dyn*. 2020 Nov 30:1-16.
16. Ganesh Shanmugasundaram A. Community Prevention and Further Research Areas to Explore in COVID 19 Positive Patients. *Virol Immunol J* 2020, 4(1): 000237.
17. Kalliantas D, Kallianta M, Karagianni CS. Homeopathy combat against coronavirus disease (Covid-19). *Z GesundhWiss*. 2020 Jun 5:1-4.
18. GowrishankarSankar S, Muthumanickam S, Kamaladevi A, Karthika C, Jothi R, Boomi P et al. Promising phytochemicals of traditional Indian herbal steam inhalation therapy to combat COVID-19 – An in silico study. *Food and Chemical Toxicology* 148(2021) 111966.
19. Than HM, NongVM, Nguyen CT et al. Management of mild cases of COVID-19 in low-resource countries: An experience in Vietnam. *J Microbiol Immunol Infect*. 2021 Feb; 54(1): 139–140.