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Prophylaxis with Arsenicum Album30C in frontline health care workers during COVID-19: A6 months of longitudinal follow-up

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Abstract

Background: Frontline healthcare workers were at higher risk of Sars Cov-2. The rate of infections was 3 to 4 times higher among frontline health workers. Homoeopathic approaches are useful in containing epidemics. We studied the prophylactic use of Arsenicum Album 30C among health workers having a higher risk of Covid-19 exposure.

Methods: The study was conducted in a first-line Covid-19 treatment centre in Trivandrum, Kerala. 112 frontline workers (between 18 to 55 years) who voluntarily used Arsenicum Album30C as a prophylactic measure were included. Participants with life-threatening illnesses were excluded. Participants received medicated pills two times a day for seven consecutive days. Participants were followed up after 7 days of treatment, on the 28th day and at 6 months. There was no control group.

Results: Participants were mostly doctors, nurses, nursing assistants and hospital staff (n=112). All of them used personal protective measures and sanitation as per health advisories. RT PCR was negative in all participants after 7 days of treatment, while one participant was positive on the 28^{th} day and four participants reported positive in the 6-month follow-up. There were no deaths or hospital admission in this cohort. The rate of infection in this group was significantly lower than those among frontline workers in similar settings.

Conclusion: This study highlighted the potential usefulness of Arsenicum Album30C, a homoeopathic prophylactic preparation that can significantly reduce the probability of SARS-CoV-2 infection. There were no adverse events. This is a low-cost, safer strategy to reduce Covid-19 spread at the population level.

Keywords: Arsenicum album30C, COVID-19, homeopathy, healthcare workers, prophylaxis

Introduction

COVID-19, caused by severe acute respiratory syndrome, coronavirus-2 (SARS CoV2), has disrupted human life in many ways. It was an airborne infection that rapidly spread among one third of the population, globally. So far, WHO reports over 765.9 million confirmed cases and 6.9 million deaths^[1]. Elders and those with comorbidities were mostly vulnerable; likelihoods of mortality, morbidity and of post-Covid syndromes increased with age. The most common symptoms were running nose, fever, sore throat, cough, and body pains. Globally, frontline health workers were at higher risk (hazard ratio 1.16) due to frequent contact with sick patients or infected coworkers ^[2]. Many were non-symptomatic and were silently transmitting diseases which were exacerbated by poor epidemic containment measures ^[3]. Personal protective equipment (PPE kits, face masks, face shields, hand gloves etc.,) and hand sanitation were recommended for all healthcare providers and hospital workers. Many drugs were considered for prophylaxis (e.g., hydroxychloroquine, vitamin C, zinc etc.) however living systematic review on 16 prophylactic drugs revealed poor scientific evidences ^[4]. Development of vaccines was underway while protecting healthcare work force has become a priority for decision makers globally. Homeopathic approaches in the past have shown many potential benefits in combating epidemics ^[5]. In India, Central Council for Research on Homeopathy reviewed useful homeopathic approaches like Genus Epidemicus in combating SARS Cov2^[5]. A multi centric randomized cluster trial in India have shown protective effects of Arsenicum Album30C among Covid19 patients ^[6]. Scientific advisory board of AYUSH ministry, India recommended Arsenicum Album30C for managing Covid19. There was no scientific evidence on prophylaxis of Arsenicum Album30C. It was in this context, this study aimed to test the feasibility, user acceptance, and prophylactic property of Arsenicum Album30C among frontline health workers through a longitudinal follow up study.

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Materials and Methods

Study Recruitment: We designed a longitudinal follow up study among health care workers at a Covid First Line Treatment Center (CFLTC), in Kerala. Assuming a positive response for Arsenicum Album30C in at least 50 percent of exposed health workers, a sample size of 110 was estimated for 6 months follow up. Recruitment commenced in June 2020 and continued till December 2020 (6 months). Health care worker (HCW) in this study is defined as a person who provides direct care to a SaRS Cov-2 patients in the covid first line treatment center (CFLTC), and he/she performs generating procedures, handles respiratory aerosol specimens, and has been on patient care duty for seven days or more. Orientation session was provided to all health workers in CFLTCs and consent was obtained for those voluntarily accepted homeopathic treatment. Baseline health profiles were collected during recruitment. Individuals with previous Covid19, other comorbid conditions, and aged (above 55 years) were excluded. Volunteers have provided signed consent.

variables: Arsenicum Album30C Study (from Homoeopathic cooperative Pharmacy, Alleppey) were administered for 7 consecutive days (two pills per day pills in no 40 size and were advised to be consumed in the morning and evening half an hour before food). All health workers were required to use personal protective equipment (PPE kits) and hand sanitation irrespective of their treatments with Arsenicum Album30C. Compliance on medication was ensured through a feedback sheet. Followup was planned at 3 time-points: first follow up after 7 days of completing treatment with Arsenicum Album30C, second follow up after 28 days, and 3rd follow up after 6 months.

Outcomes: Incidence of Covid-19 in the study group was primary outcome. All HCWs were subjected to a real-time PCR test or a rapid antigen test between the 7th and 10th days following the conclusion of their shift. In addition, participants were specifically contacted or followed up if they had a high-risk exposures (direct contact with a positive case), reported any flu like symptoms, or were absent for work for two consecutive days. Participants were requested to share data via a Google form and monitoring were ensured through WhatsApp.

Data Analysis: Analysis was mostly descriptive. Incidence of Covid-19 in the study group were summarized at 3 follow up time points was summarized.

Ethics: Study was approved and monitored by a research committee and human ethics committee of the institution.

Results

Study cohort: Over 112 participants volunteered in this study. Majority participants were between 20 to <40 years (~ 72 percentage). (Table 1) Mean age was 36 ± 12 years (median 38 years, IQR 42, 54) and the majority were female (n=94/112, 84%). Over 70 percent (n=82/112) participants were physicians and nurses. Median length of hospital duty (consecutive in CFLTC) was 7 days (IQR 5, 10).

Incidence of Covid-19 in study cohort: Among the 112 participants who have taken Arsenicum Album30C as prophylaxis there were no Covid positive cases in first 7 days, one positive case within 28 days, and 4 positive cases in 6 months. (Table 2).

		No. of participants	Percentage (%)
Age bands (10 years interval)	20 to <30 years	46	41.1
	30 to <40 years	35	31.3
	40 to <50 years	20	17.9
	50 to <60 years	11	9.8
Male		18	16.1
Female		94	83.9
Doctor		39	34.8
Nurse		40	35.7
Paramedical		17	15.2
Nursing Assistant/Attender		7	6.3
Sanitation worker/Sweeper cleaner		9	8.0
Direct patient care		89	79.5
Specimen handling		6	5.4
Pharmacist		5	4.5
Nursing incharge/ Supervisory		12	10.7
Use of PPE kit		92	82.1
Use of N 95 mask		19	17.0
Face shield		1	0.9

Table 1: Description of study participants who participated in 6 months follow up

Table 2: Incidence of Covid-19 among study participants in 6 months follow up

Test positivity within 7 days of duty	Number	Percentage
Negative	112	100
Positive	0	0
Test positivity within 28 days of duty		
Negative	111	99.1
Positive	1	0.9
Test positivity within 6 months of duty		
Negative	108	96.4
Positive	4	3.6

Type of test		
RTPCR	34	30.4
Rapid Antigen test	78	69.6
Unusual symptoms after taking medicine		
Nil	108	96.4
Yes	4	3.6

Discussion

Globally, covid-19 among health care workers is common ^[11, 12]. Many faces post-covid health issues, prolonged hospital stays, and delayed recovery. In India, these have more serious socio-cultural and economic impact as medical insurance coverage is poor among health workers. It is therefore important to find ways to protect healthcare workers. We sought to evaluate the potential of Arsenicum Album30C among selected frontline health workers voluntarily agreed to consume Homoeopathic prophylactic drug. Pre-clinical trials on Arsenicum Album30C have shown encouraging results and are supported by many observational studies. Central Council for Research in Homeopathy (CCRH), New Delhi is the primary government agency in India and in-charge of managing India's COVID response in the homoeopathic system under AYUSH ministry. CCRH has verified the safety profile of Arsenicum Album30C and issued directives for its use as prophylaxis to prevent influenza like illness, especially in the light of epidemics and significant hazards that healthcare personnel will encounter. Our results show that there were very few Covid-19 cases among health workers who were longitudinally followed for 6 months.

Studies have noted that of the Arsenicum Album30C, 88 were primary contacts to a symptomatic case, however only 1 (0.9%) health workers were tested positive for Covid within 28 days of duty. Follow-up at 6-month, also revealed that 4 (3.6%) of the 112 had tested positive. Similarly, it was observed that those who took Arsenicum Album30C who also had face-to-face, direct, or ambient interaction with Covid positive cases had lower rates of positive test results. In comparison to people exposed to asymptomatic patients, those exposed to symptomatic patients had a higher risk of contracting the virus. As a first-line treatment facility, category A or B patients made up the majority of the patient population. Future research should therefore examine these findings in more detail. With no participants reporting any significant adverse events, the current study also confirmed the safety profile for Arsenicum Album30C. This study provides clinical evidence for the potential prophylactic use of Arsenicum Album30C in influenza-like illness. Despite a significant association, no link between the two can be assumed to be causal. The data includes young, healthy individuals with no or few relevant underlying health issues, mirroring the demographics of healthcare professionals. This justifies a conservative interpretation of our findings, and more research on statistical significance is required.

Limitations

This study recruitment was based on voluntary readiness by healthcare workers and their responses were received online. There were no comparison groups or random sampling techniques that facilitate sub-group analysis. Chances of sampling bias and recall bias cannot be excluded. Due to ethical reasons, blinding was not done at any level. Prevalence and population estimations were not available at the time of this study and therefore we were not able to calculate sample size. Furthermore, the spread of COVID-19 to healthcare workers was not limited to patient contacts – there could be infected employees frequently who share common areas in the hospital, such as lounges, living quarters, dining rooms, etc. The data was primarily relied on participant history, making it unable to capture side effects that need special attention.

Conclusion

Voluntary pre-exposure Arsenicum Album30C use was linked to a decreased likelihood of testing positive for SARS-CoV-2 in this retrospective analysis of healthcare professionals who had been exposed to the virus. The current study produced some supporting data for Arsenicum Album30C efficacy. However, a carefully thought-out, extensive clinical trial will still be necessary to provide conclusive evidence of Arsenicum Album30C effectiveness in COVID-19 prevention. No significant side effects were observed in patients receiving prophylactic Arsenicum Album30C.

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Conflict of interest: Primary investigator / author is a homeopathic practitioner with over 20 years of experience.

Ethical approval: The study was approved by the Institutional Ethics Committee, Government Homoeo College, Trivandrum, Kerala, India (Ref Number:)

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