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## Post vaccination COVID-19 infection among health care workers in secondary medical care centre

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### Abstract

**Background:** One of the preventive measures of COVID-19 is to take two dose of COVID-19 vaccine. India now second wave is spreads in community and daily increasing its number in infection and death, our study concentrates on the COVID infection to vaccination completed Health Care worker.

**Materials and Methods:** 195 staff members of secondary medical care centre in rural area are studied, out of which vaccination taken are 182 are included data's are collected by Cross section questionnaire's and data from office these are tabulated and analysed.

**Results:** 82(93.3%) of staffs in secondary centre are taken vaccination against COVID-19. post vaccination COVID infection seen in 6 persons, among 6 one as taken only one dose of vaccine, symptoms are milder and only one requires hospital admission.

**Conclusions:** Milder symptoms are seen in post vaccinated staff, vaccine as to cover larger population to control pandemic infection, study as to do in infectivity of post vaccinated infected people.

**Keywords:** Post vaccination, infection, COVID-19, health care worker

### Introduction

We are all well aware that COVID-19 (SARS-CoV-2) infection started from end of 2019 1<sup>st</sup> notified from Wuhan china [1], later its spread to all over the world in no time and WHO declared that as pandemic in March 2020 [2].

Several measures are taken by all counties to prevent spread of infection like lockdown, restriction of public gathering, festivals, advice to use mask, hand washing, social distancing, stay home, advice for medical attention in case of fever, cough, difficulty in breathing, loss of taste and smell. India also followed same measures and declared complete lockdown of country from march 24<sup>th</sup> 2020 [3] and in the mean while India also getting ready to prevent the spread of infection by interim approval of two COVID-19 vaccine Covishield and covaxin [4, 5]. On Jan 16<sup>th</sup> 2021 as a 1<sup>st</sup> phase started with health care worker in spite of hesitancy vaccine was taken by maximum number of health care worker [6]. As of now India is facing the 2<sup>nd</sup> wave of infection spread with the mutant virus strains the effective is our vaccine for mutant strains need to study.

### Aims and objectives

To know the Post vaccination COVID-19 infection among health care workers in secondary medical care centre.

### Material and methods

In 1<sup>st</sup> week of May 2021 Christuraj hospital staff of total 195 included in the study out of which 182 was taken vaccine of COVID-19, 13 staffs are not taken vaccine due to personal problems, pregnancy, lactation. Cross section questionnaires' are asked regarding socio demographic factors, vaccination type and test positive for COVID infection and symptoms of infection if positive severity status and hospitalization and also data available at office are collected. Vaccination started in Feb 2021 and data collected till 7<sup>th</sup> may 2021. all data's are crosses checked, tabulated and descriptive analysis done.

### Results

Out of 195 workers in secondary medical care centre, 182(93.3%) staffs taken vaccine for COVID-19 and 164 are completed vaccine schedule of 2 doses maximum number are taken Covishield only 11 staffs got covaxin this is not their personal selection its mainly due to availability of vaccine at the time of vaccination and 6.4% of staff not taken any vaccine.

In our study 6 staffs got infected after taking vaccine in that 5 (2.7%) people completed 2 doses and more than 3wks after 2<sup>nd</sup> dose got infected and one staff taken 1<sup>st</sup> dose and infected 3weeks after 1<sup>st</sup> dose.135 (74%) of staff are females among them 4 are infected with covid-19 after vaccination 3are completed 2

doses and 1 staff taken one dose. Among the infected staff 5 of them are in home isolation and one required hospitalization with diabetic as comorbidity, 4 staffs as milder symptoms 2 of them are asymptomatic. No one as severe infection and no one require ICU.

**Table 1:** Demographic factors with post vaccination infection data

Variables	Number (182) %	Number of COVID infection after		Type of vaccine		symptoms		hospitalization			Death
		1 <sup>st</sup> Dose	2 <sup>nd</sup> Dose	Covishield	Covaxin	Yes	No	No	Ward	ICU	
<b>Age</b>											
18-25	35(19%)	0	1	35	0	1	0	1	0	0	0
25-35	88(48%)	0	2	85	3	1	1	2	0	0	0
35-45	39(21%)	1	1	36	3	1	1	2	0	0	0
>45	36(20%)	0	1	31	5	1	0	0	1	0	0
<b>sex</b>											
Male	47(26%)	0	2	43	4	2	0	2	0	0	0
female	135(74%)	1	3	128	7	2	2	3	1	0	0
<b>Education</b>											
12 <sup>th</sup> school	22(12%)	0	1	21	1	1	0	1	0	0	0
Diploma	69(38%)	1	3	65	4	2	2	3	1	0	0
Degree	63(35%)	0	1	61	2	1	0	1	0	0	0
Master degree	28(15%)	0	0	24	4	0	0	0	0	0	0
<b>occupation</b>											
Doctors	32(18%)	0	0	31	1	0	0	0	0	0	0
Nurses	71(39%)	0	3	67	4	2	1	3	0	0	0
Paramedical staff	37(20%)	0	2	36	1	1	1	1	1	0	0
other	42(23%)	1	0	37	5	1	0	1	0	0	0
<b>Residence</b>											
Urban	32(18%)	1		28	4	1	0	1	0	0	0
Rural	150(82%)		5	143	7	3	2	4	1	0	0
<b>Comorbid condition</b>											
Hypertension	21(12%)	0	1	21	0	1	0	1	0	0	0
Diabetics	16(9%)	0	2	16	0	2		1	1	0	0
Heart disease	1(1%)	0	0	0	1	0	0	0	0	0	0
Renal disease	0	0	0	0	0	0	0	0	0	0	0
Others	3(2%)	0	0	0	3	0	0	0	0	0	0

## Discussion

We noticed that SARS-CoV-2 virus now identified with different variants due to mutation some variants are not effective to this induced immunity [7], in our study shows that vaccines are effectiveness in reducing the risk of severity, those who as infected also not have sever manifestation only mild fever and malaise noticed which are controlled with simple paracetamol at home itself only one requires hospital as she as comorbidity of diabetics and discharged with in 3days,no infected staff are admitted to ICU. In Teran *et al.* study SHOWS THAT severity is less in infected person nearly two thirds of infected persons are asymptomatic [8]. Kanika Tyagi *et al.* study from Delhi showed 13.3%is the break through infection and all are had mild home care treatment except one need hospital admission [9]. In India even ICMR told that 2 to 4 of 10,000 as post vaccine COVID-19 infection [10].

It is very important that we need still to study about infectivity of post vaccination person to others, and need to check for asymptomatic infection, our diagnostic test its self is not effective in mutant strains.

our study as also limitations we need to check for infection every weekly which we are not testing, large population need to include, Same quantity of samples for both vaccines types need to add, different geographic area need to add strength of the study is only limited studies are published our study will add as reference to the bigger studies, it's give confident to the health workers to work in COVID era, it also removes hesitancy to take

vaccination for public.

## Conclusions

Even though we have seen COVID-19 infection after completing two doses of vaccination they are few in number and its severity is low. Their gives importance of vaccination and we also recommend to follow COVID-19 preventive measures.

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