



EPIDEMIOLOGY OF COVID-19 IN HEALTH CARE WORKERS OF UDAIPUR DISTRICT

Community Medicine

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ABSTRACT

Background: Health care workers are constantly under threat of being infected and spreading infection of COVID-19. **OBJECTIVE:** (1) To study epidemiological profile of COVID-19 positive health care workers of Udaipur district. (2) To study their progression and outcome. **Methodology:** Hospital based observational study of rtPCR confirmed COVID-19 positive healthcare workers of Udaipur district in a study period from 1 April 2020 to 4 August 2020. Data was obtained from Case Investigation Form, indoor records and telephonic conversation. **Result:** Majority were young adults and were males. Among health care workers doctors were most commonly affected followed by nursing staff. Majority were symptomatic, and most common symptom was fever. But comorbidity seen in few and most common was diabetes mellitus. 94% were recovered and discharged during the study period. One expired meanwhile, thus case fatality rate was 2%. **Conclusion:** The progress and outcome of the positive health care workers was good with 94 percent recovery and 2% fatality.

KEYWORDS

COVID-19, Coronavirus, Health care workers, rtPCR

INTRODUCTION:

Coronaviruses are a large group of viruses that are rather common throughout the community. The first case of novel coronavirus was reported in December 2019 in Wuhan, China. Accordingly, the emergence of this infectious disease has caused much anxiety among the population worldwide due to the increasing number of suspected cases and the virus' unpredictable future. Currently, there is no specific antiviral treatment and preventable vaccine. Therefore the guidelines are recommended to decline the spread of infection and respond to the challenges during epidemic.

A group of population which is at high risk of getting the infection and act as source of transmission in the community are health care workers (HCWs).¹

Health care workers are essential workers defined as paid and unpaid persons serving in health care settings who have the potential for direct and indirect exposure to patients or infectious materials.² They are at the frontline of COVID-19 outbreak response and the hazards that put them on the risk of infection include pathogen exposure, long working hours and psychological distress. They face fatigue, occupational burnout, stigma, physical and psychological distress. Thus implementation of infection prevention and control and to highlight the rights and responsibilities of health care workers is necessary to protect health and occupational safety of essential national workforce.³

So a baseline data is mandatory to point out health care workers' epidemiology, working conditions and risk exposure possibilities. And in this time of outbreak our study aims to provide the same.

METHODOLOGY:

STUDY DESIGN: A hospital based observational study of rtPCR confirmed COVID-19 positive health care workers of Udaipur district.

STUDY AREA: Study was conducted at Maharana Bhupal Hospital, Udaipur; a dedicated COVID hospital.

STUDY PERIOD : Study was conducted from 1 April 2020 to 4 August 2020.

TOOLS AND TECHNIQUE OF THE STUDY: The health care workers of Udaipur district who tested confirmed COVID-19

positive [oropharyngeal or nasopharyngeal specimen used and tested through real time Polymerase Chain Reaction (rtPCR) machine] were included in the study. Data regarding epidemiological profile of patients was recorded from Case Investigation Form and indoor records were used for disease progression and outcome after taking permission from the respective authority. Additional data was collected through telephonic conversation.

ANALYSIS OF DATA: Data thus collected was entered in personal computer. Appropriate tables were generated and analysed through MS Excel and SPSS.

RESULT:

The first health care worker of Udaipur district was reported confirmed COVID-19 positive by VRDL laboratory of Microbiology department of RNT Medical College on 3 April 2020. Meanwhile 50 health care workers have tested positive in a span of 124 days from 3 April 2020 to 4 August 2020.

Majority of patients were males (70%) as compared to females (30%). The mean age was 38.3 years and range was 23-71 years. [Table 1]

Table 1: Age Wise And Gender Wise Distribution

AGE (IN YEARS)	FEMALE	MALE	TOTAL
Less than or equal to 25	1	3	4
26-35	6	15	21
36-45	3	7	10
46-55	4	8	12
more than 55	1	2	3
TOTAL	15	35	50

64% health care workers had performed duty in COVID care hospital. Among health care workers, the most common group affected was that of doctors (46%), followed by nursing staff (38%). [Table 2]

Table 2: Designation And Duty Wise Distribution

	DUTY IN COVID CARE HOSPITAL		
DESIGNATION	YES	NO	TOTAL
DOCTOR	16	7	23
NURSING STAFF	9	10	19
TECHNICIAN	5	1	6

WARD BOY	2	0	2
TOTAL	32	18	50

Only 1 out of 50 (2%) had no contact history with a known positive patient. And 8 out of 50 (16%) health care workers came positive in contact tracing of other health care workers done by Rapid Response Team. Travel history was present in 5 patients (10%), out of whom 4 had intrastate and 1 had interstate travel.

Prophylactic hydroxychloroquine was taken by 17 (34%) health care workers. Although course was completed by none and one had loading dose only.

Majority were symptomatic (90%) and only 10% had no symptoms. Most common symptom was fever which was present in 30%, followed by bodyache in 14%, sore throat in 8%, cough in 6%, cold in 4% and loss of taste in 2%.

Comorbidities were present in 6 (12%) patients. Most common was diabetes mellitus, present on 3 (6%) followed by hypothyroidism which was present in 2 (4%), and hypertension, chronic asthma, obesity and carcinoma neck were present in 1 (2%) each.

One patient had a surgical history of angioplasty and one was suffering from dengue at the time of admission.

47 patients (94%) have been recovered and discharged during the study period and none of them have tested positive again after that. [Table 3]

Table 3: Days Required To Recover

DAYS TO RECOVER	NO OF PATIENTS
less than or equal to 3	7
4 to 7	19
8 to 14	19
more than 14	2
TOTAL	47

During the course of treatment, artificial oxygen was required by 4 (8%). 2 (4%) patients were required to be shifted to ICU; and one out of them was taken on ventilator, who was declared dead later on, 3 days after testing positive and been admitted. Thus the case fatality rate was 2%.

DISCUSSION:

In our study a swift transmission was seen in which 50 health care workers tested positive in a span of about 16 weeks as compared to a study of Singapore⁴ in which only 14 cases were reported in a span of 16 weeks.

Majority were symptomatic (90%), in contrast to a study conducted in Switzerland⁵ in which only 14% were symptomatic and were found positive during routine contact investigation. In our study 98% had a known contact with a positive patient; in contrast to the study of Singapore⁴ where only 14% reported of known contact. This may be due to less routine testing of health care workers than foreign countries and testing when proper PPE (Personal Protective Equipment) breach is recorded.

In this study the proportion of doctors was highest among the affected health care workers similar to another study of Singapore⁶ of 2017 in where also doctors were found to be maximum affected with infectious disease.

The average number of days required to recover came out to be 8 in our study, also in the study of Switzerland⁵ all were recovered in 7 days.

CONCLUSION:

The progress and outcome of the health care workers affected with COVID-19 seem to be good with 94 percent recovery during the study period and only 2% fatality.

FUTURE SCOPE:

Health care workers are at frontline amid ongoing COVID-19 pandemic and are at high risk of getting infected and spreading the infection. Thus this study helps evaluate their epidemiological characteristics which is necessary to see the trend of infection to do the needful so as to minimise its impact

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