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Knowledge about management of COVID-19 among medical fraternity in Level II/III isolation facility: a cross-sectional survey

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Abstract:
COVID-19 is currently a public health emergency of international concern that needs to be addressed as soon as possible through effective medical intervention. This is a contagious respiratory illness which spreads from person to person via close contact, infected droplets or interaction with surfaces that contain the virus. This study has been planned to assess knowledge pertaining to patients infected with SARS-CoV-2 amongst the health care professionals working in the COVID- 19 treating center. Knowing the level of knowledge in the early stages of pandemic can help in organizing relevant training and framing policies during the outbreak. A cross-sectional survey of knowledge about management of COVID-19 among medical fraternity was carried out in the month of April 2020.The target population was teaching and nonteaching faculty of designated Level II/III isolation facility attached to a medical school. Results of the survey revealed that most of the participants were aware of the symptoms of SARS-CoV-2 and had sufficient knowledge of drugs used for prophylaxis as well as the antivirals being tried in COVID-19. A significant proportion of participants had poor knowledge of use of antibiotics and corticosteroids in SARS-CoV-2 infected patients. It has been concluded that all the frontline warriors should be given training about the propagation of virus, pathogenesis of the disease and different modalities for its management. The clinical management and standard treatment protocol of COVID-19 should be made available in all the isolation wards and intensive care units.

Key Word: Tocilizumab, Fevipiravir, SRSCov 2,

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I. Introduction

COVID-19 is currently a public health emergency of international concern that needs to be addressed as soon as possible through effective medical intervention.[1] This is a contagious respiratory illness which spreads from person to person via close contact, infected droplets or interaction with surfaces that contain the virus. The first case of COVID-19 was identified in Wuhan, China and reported to World Health Organisation on 31 December 2019.[2] On 30 January 2020, World Health Organisation declared COVID-19 a pandemic.[3] SARS-CoV-2 is highly contagious and potentially fatal for some people who contract it. This study has been planned to assess knowledge pertaining to patients infected with SARS-CoV-2 amongst the health care professionals working in the COVID- 19 treating center. Knowing the level of knowledge in the early stages of pandemic can help in organizing relevant training and framing policies during the outbreak.

II. Methodology

We performed a cross-sectional survey of knowledge about management of COVID-19 among medical fraternity in the month of April 2020.The target population was teaching and nonteaching faculty of designated Level II/III isolation facility attached to a medical school. As it was not feasible to involve all the medical practitioners, so only those working in isolation facility were enrolled. We utilized online methods to reach to the respondents within one-week period. Two main platforms used in disseminating this survey were facebook and whatsApp. A standardised general description about the survey was given followed by the link of the questionnaire. A total of 119 participants took part in the survey.

The survey instrument involved a questionnaire that provided a standard set of questions and response options to test the knowledge of medical fraternity about COVID-19. The main focus of questionnaire was knowledge of SARS-CoV- 2, its progression, and various treatment modalities of COVID-19. To conduct this survey of knowledge about COVID-19, 13 questions were framed which included the clinical presentations (question 2–4), role of antibiotics (question 5–6) and drugs for prevention and control (question 7–13) of COVID-19. Questionnaire used for the survey has been tabulated in Table 1

Knowledge about management of COVID-19 among medical fraternity: a cross-sectional survey	
What is your designation? * Medical Practitioner (non-teaching) Professor, Associate Professor, Assistent Professor Residents or others	
The major presentations in SARS CoV 2 infection are fever, dry cough, and breathlessness	True, false, I don't know
SARSCo V2 infection can cause flu like symptoms of running nose and sneezing	True, false, I don't know
Use of Antibiotics helps in curing COVID 19	True, false, I don't know
In COVID-19 Antibiotics are used for the following reasons except: A. Prophylactic role B. To treat superadded bacterial infections C. To treat pneumonitis	
HCQ has been recommended on prophylaxis basis for all A. Health care workers in contact with COVID -19 Postive cases B. Immediate family members of those confirmed to be positive for COVID 19 C. All the primary contacts of an infected individuals	
Remdesivir an antiviral that has gained attention of its potential to treat COVID -19 by its ability to decrease the viral load A. It produces enzyme that locks itself into spikes found on the surface of the virus B. It targets RNA polymerase and blocks viral replication C. It prevents mutation of virus D. It activates specific white cells in immune system which will engulf virus	
IL 1 inhibitors used to combat cytokine strom in COVID 19 A. Sarilumab B. Anakinra C. Tocilizumab	
Low dose methylprednesalone for shorter duration has been advocated to treat COVID 19 pneumonia with A. Mild symptoms B. Moderate symptoms C. Acute exacerbation	
Which of the following drug has not been approved for the treatment of COVID-19 A. Lopinavir and Ritonavir B. Favipiravir C. Toliczumab	
Which of the following statement is not true about plasma therapy A. Antibodies of recovered individuals will help the severely ill patients B. It was earlier tried as a therapy to treat individuals infected with Ebola C. ICMR has approved plasma therapy for widespread treatment D. Plasma therapy was earlier tried for MERS infections (another virus from Corona family)	
Out of the following which one has not yet been recommended for the treatment of COVID-19 A. HCQS B. Peramivir C. Lopinavir D. Ritonavir	

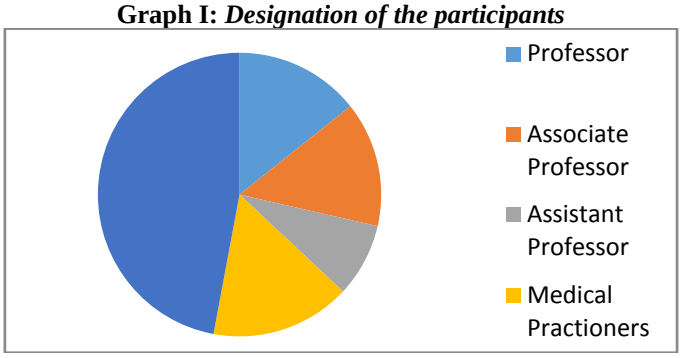
III. Results & Discussion

This study was conducted in the month of April, 2020 in a Level II/III COVID-19 Isolation facility attached to a Medical School. Study was carried out to assess and analyze knowledge about the management of COVID-19 amongst medical teaching and non-teaching fraternity. Analysis of knowledge of health care workers would provide a reference for preventing transmission to non COVID patients and others in the healthcare facility.

Medical teaching fraternity included doctors with teaching experience of 10-15 years and above. Resident doctors were also included in the study. Medical practitioners having clinical exposure but no teaching experience were part of the study too.

A total of 119 individuals were included in this study group with teaching fraternity (100) and non-teaching (19) doctors.

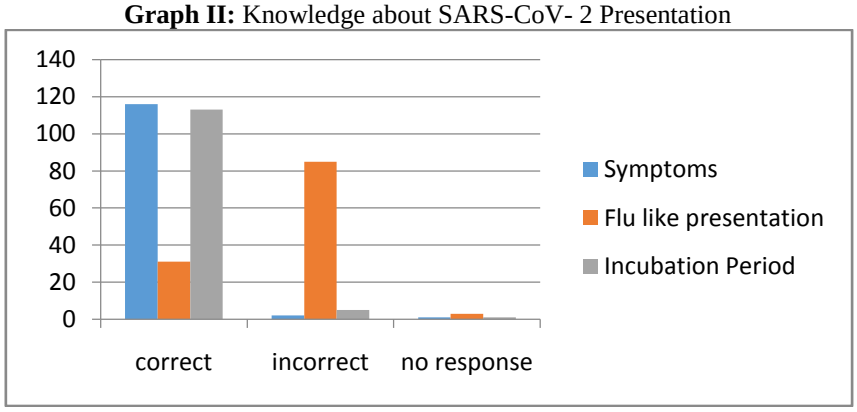
Graph I: ***Designation of the participants***



Knowledge about major presentations in SARS-CoV-2 infection like fever, dry cough and breathlessness was known to almost all teaching and non-teaching faculty members. Majority of teaching doctors (70) were not aware of flu like symptoms of SARS CoV-2 infections, (15) doctors from non-teaching fraternity were also ignorant about symptoms of running nose and sneezing.

Incubation period of SARS CoV-2 virus of 1-14 days was known to (95) members of teaching faculty and (18) of non-teaching faculty.[4] as depicted in Graph II

Graph II: Knowledge about SARS-CoV- 2 Presentation



COVID-19 being a viral disease, so antibiotics are not of much help in treating COVID-19. (77) members of teaching fraternity were aware of this and (16) members from non-teaching group were correct in responding to this. Mostly the young faculty members mainly resident doctors were having adequate clinical expertise about the role of antibiotics in COVID-19 treatment. Empiric prescribing of antibiotics is recommended only in cases where bacterial infection cannot be excluded like COPD exacerbations with purulent sputum or radiological evidence of pneumonia while awaiting COVID -19 test result.[5] However the role of antibiotics to treat superadded bacterial infection, was not known to (53) teaching faculty members and (15) non-teaching doctors.

Table I: Knowledge about different treatment modalities being tried for Patients of COVID -19

Drug Use	correct	incorrect	not known
Role of Antibiotic in curing COVID 19	53	65	1
When to use Antibiotics in COVID 19	93	17	9
Type of population for HCQ Prophylaxis	88	31	0
Mechanism of action of Remdesivir	90	20	9
IL 6 Inhibitor used in Mumbai for COVID 19	73	33	13

Recommendation of use of Low dose Prednesolon	81	32	6
Antiviral not approved for treatment of COVID-19	61	51	7
Statement not true about plasma therapy	73	42	4
Spot the drug not recommended for COVID-19	88	26	5

HCQS has been recommended on prophylaxis basis only for health care workers in contact with COVID-19 positive cases, as per Indian Council of Medical Research (ICMR) guidelines.[6] Most of the teaching fraternity members (33) are ignorant about the judicious use of HCQS. Majority of them are of the opinion that everybody can take HCQS as a prophylactic drug for COVID-19.Only 4 members from non-teaching fraternity are not aware of the use of HCQS. All members of this study group need to be aware of the use of this drug in order to avoid its side effects. Safety profile of any drug used for prophylaxis especially in pandemic needs to be observed. HCQS has shown cardiac toxic effects especially in persons with underlying coexisting conditions that increase the risk of severe Covid-19. Moreover limited availability of this drug should be for frontline health care workers only.

IL-6 promotes the differentiation of B lymphocytes and stimulates the production of acute phase proteins. So the main role played by IL-6 is pro-inflammatory. Immunomodulators, by reducing cytokine storm may provide supportive treatment.

Tocilizumab an immunomodulator has shown remarkable results in patients with severe symptoms but for its use, selection of the patients is of utmost importance. Favourable outcomes with fewer side effects have been reported with a single dose of 400 mg. Tocilizumab, an IL-6 inhibitor is being tried in Mumbai, India to combat cytokine storm in COVID-19. This treatment modality is not known to 14 out of 22 resident doctors. [7]

Corticosteroids are used for immunomodulatory therapy of this infectious disease and is being tried for COVID-19 patients. It is only recommended in certain critically ill patients at low-to-moderate doses (1–2 mg/kg/day methylprednisolone) for a short duration (3–5 days) Role of low dose methylpredinisolone for shorter duration has been advocated to treat COVID-19 pneumonia with acute exacerbation. It is not recommended for mild to moderate symptoms of COVID-19 Overall 70 teaching members were aware of this and 11 non-teaching fraternity of the hospital agreed to use of steroids[8]

SARS-CoV- 2 is an obligate intracellular parasite that replicates and uses the host cell's machinery to synthesize their protein and RNA. This virus is highly antigenic in nature and difficult to kill. Antiviral drugs do not kill the virus. They act at different steps of viral multiplication inside the host cell. 12 of teaching fraternity are not familiar with role of Remdesivir. It is an antiviral drug which acts on RNA polymerase and blocks viral replication.

Till the end of April, 2020 Favipiravir has not been approved for treatment of COVID-19. Most of the resident doctors are not aware of the latest treatment modality. 9 out of 19 non-teaching faculty members are ignorant about the use of Favipiravir for treatment of COVID-19. Peramivir, an antiviral drug has not been recommended for treatment of COVID-19.[9] 15 out of 36 resident doctors are unaware of this.

The clinical use of convalescent plasma from recovered COVID-19 patients to people with severe symptoms could be a safe option without adverse effects. This helps to boost ability of patients to fight the virus and save them from experiencing complications.[10] Till April end 2020, ICMR has not approved wide spread use of plasma therapy for treatment in COVID-19.

This study has certain limitations. The number of teaching faculty members (100) was much more than the non-teaching faculty members (19). So the feedback of their knowledge is limited in this study.

IV. Conclusion

The increased prevalence of SARS-CoV-2 around the globe and the social and economic repercussions generated by this pandemic demands for rapid interventions to control this novel pandemic. Repurposing pre-existing compounds provides opportunities for treating people infected with SARS-CoV-2. So, updated knowledge about each and every aspect of the disease is the need of hour. All the frontline warriors should be given training about the propagation of virus, pathogenesis of the disease and different modalities for its management. The clinical management and standard treatment protocol of COVID-19 should be made available in all the isolation wards and intensive care units.

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