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# THE FIRST WAVE OF COVID-19 PANDEMIC IN INDIA 2020: A REVIEW

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**Abstract:**

The study wants to review the first wave of COVID-19 pandemic in Indian in 2020. A study has done to highlight the impact of travelling in 2020 that had brought an alarming emergency in India. Travelling across the probe countries had widely circulated 'novel coronavirus' which is a respiratory virus that can cause illness ranging from common cold to severe acute respiratory syndrome (SARS). Travelling through international flights had undoubtedly played an important role of spreading novel coronavirus. It had created a pandemic situation to countries like USA, Italy, France, Europe, Russia and many more. In the year 2020, countries with improved medical facilities and well experienced medical staff were helpless to fix the problem. Other countries with weaker medical resources were facing high alert and emergency in the nation. The infected patients were treated through a combination of medication and no vaccine was introduced till 2020 against coronavirus. The study concluded the fact that could slow down the further spreading of novel coronavirus would be the total ban of international as well as domestic travelling all over the globe with partial or complete lockdown in countries till everyone get complete vaccinated.

**Key words:** Novel Corona virus; Lockdown; Travelling; SARS; Pandemic.

## Introduction:

Viruses are micro-organisms that are believed to be a link between living and non-living organisms **[1]**.Viruses are identified based on their gene arrangement and genetic properties and then named accordingly by International committee on taxonomy of viruses (ICTV). Novel coronavirus was initially termed as SARS-CoV-2. SARS-CoV-2 is the severe acute respiratory

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syndrome coronavirus 2 named by ICTV on 11 February 2020. Later on, on the same day, WHO (world health organisation) has officially announced its name as Coronavirus disease-2019 (COVID-19) **[2]**. The term 'novel' was added to the name of coronavirus as the scientist recognised it as a new strain of virus and named it as 'novel coronavirus'. Corona is a Latin word which implies that the shape of the virus is similar to a 'crown' when observed under microscope and thus the virus got its name.

The initial most cases reported to WHO were the occurrences of pneumonia of unknown reason in Wuhan, China on 31 December 2019 **[3]**. On 1 January 2020, WHO had stepped forward by setting up the Incident Management Support Team (IMST) in which there were management teams at headquarter level, regional headquarter level as well as at country level. Such steps had emerged as a sign of emergency in order to alarm the global population. On those days, many people had travelled through Wuhan and came back to their countries which unknowingly made them a human bomb carrying a life-threatening virus. The survey had reported that there was no sign of alertness for that virus as China government delayed in announcing the Wuhan tragedy. Till 4 January 2020, WHO had reported that there was respiratory breakdown in Wuhan population and problem was assumed to be pneumonia. On 5 January 2020, it was the first time that WHO confirmed that the disease was an outcome of a new virus which was first time isolated on 7 January and finally on 12 January 2020 WHO had declared that the reason behind respiratory breakdown in cluster of Wuhan people was the transmission of novel coronavirus. The identification of virus was possible by the study of genetic sequence provided by China government on 12 January 2020 to diagnose patients **[4]**. A novel coronavirus was first detected and isolated from patients suffering from pneumonia in Wuhan (2019-2020) and its genetic studies evidenced that the virus had a close link with SARS-CoV of 2002 that had infected thousands of people with pulmonary tract infections and was fatal for many **[5, 6]**. The virus was expected to be originated from bat in China and human to human was the mode of transmission of that infection.

Novel coronavirus is a travel transmitted respiratory disease which was officially confirmed when a woman from Wuhan reported to have fever and throat pain on 5 January 2020 who then travelled to Thailand on 8 January 2020 and caught feverish in thermal screening at Thailand airport for which she was hospitalized **[7]**. On 13 January 2020 she was reported as corona positive and soon after few days, Thailand had recorded other cases of novel coronavirus including a case of a taxi driver with no travel history was also caught corona positive who might came in contact with some traveller, proved it is a human-to-human transmission which was apparently brought up by travellers. On 30 January, it was declared as global health emergency by WHO and in order to aware general people WHO provided suitable guidelines and suggested appropriate precautions to overcome the situation. COVID-19 was declared as an airborne disease **[8]**.

On 2 February 2020 first death was recorded outside China in Philippines **[9]**. A 44 year Chinese from Wuhan appeared infected before reaching Philippines and during his travel from Wuhan he had possibly provided a pathway for virus to get transmitted to other Filipinos. Death of Chinese physician Dr. Li Wenliang on 7 February 2020 was surprising for many people as he was the first man who warned about the risk of illness from SARS (COVID-19) **[10]**. His warning had

earned publicly for which he was admonished by China government for "giving false statement on social media".

**Beginning of Coronavirus pandemic in 2020:**

Initially coronavirus cases were observed in Wuhan city but later on it had shown its adverse effect worldwide. On 11 March 2020 WHO declared COVID-19 as pandemic and recommended for maintaining daily hygiene, proper washing of hands with soap, proper sanitization and use of mask to avoid entrance of virus through direct contact **[11]**. WHO had suggested for maintaining social distancing particularly with person having COVID-19 symptoms like coughing, sneezing, difficulty in breathing, fever and throat pain **[12, 13]**. In order to avoid coronavirus transmission, all the domestic and international flights were suspended worldwide and medical treatment went into action. Till 16 April 2020, it had surpassed more than 2 million cases and only about 515,000 people were recovered from the disease, the report was collected by the Johns Hopkins University (United States) **[14, 15]**.

**Beginning of Coronavirus pandemic in India 2020:**

India is a fast growing country which has emerged to have fastest growing economy in the world. India has strong democracy and second largest population in the world. But the fact that India would never deny is its limited medical technologies which are still need to be grown much better in compare to countries like France, Italy, Spain and United Kingdom **[16]**. Comparing to its large population density, it lacks in some of the hospital facilities such as number of beds, intensive care units, ventilators, medical staff and medical equipments. Half of the population in India depends upon ayurveda or natural therapies for curing their illness **[17, 18]**. But when it comes about a treatment against a life threatening virus, it would be a tough call to tackle such situation due to abatement in research and advance medical techniques.

One of the most serious issues about spreading of coronavirus in India is lack of public alertness and awareness about the disease. The reason behind the statement is as 50% of the Indian population belongs to labour community where carefulness towards proper sanitation, hygiene maintenance and social distancing is not as effective as it should be. In 2020, many awareness digital programs were started by Ministry of Health and Family Welfare, Government of India for the precautionary measures against spreading of novel coronavirus. Despite all efforts, on 26 March 2020, the country had witnessed thousands of migrant labourers were found stranded on roads to reach their respective homes due to complete lockdown in India **[19]**.Spreading of coronavirus in India was much easier since many of its nationals had migrated to abroad for perusing advanced studies, work experiences and for attaining seminars therefore, the arrival of those nationals to India had surely brought many corona cases in the country. In India the infection was introduced by a student of Kerala origin who was returned from Wuhan, China on 30 January 2020.

Some of examples of coronavirus transmitted in 2020 as a result of International as well as domestic travelling in India-

**1. Tablighi Jamaat Congregation- Islamic meets by foreign travellers**

Tablighi Jamaat religious assembly had become country's most severe coronavirus vector. Tablighi Jamaat is a global Islamic missionary movement, started in 1926. In 2020, the Muslim congregation was started on 13 March and lasted till 15 March **[20]**, the event was organised in Markaz at Banglawali Masjid in Nizamuddin, New Delhi (India). The event took place with assembly of thousands of Islamic including delegates from countries like Indonesia, Thailand, Bangladesh, Kyrgyzstan, Nepal and Malaysia to attain the congregation **[21]**.

According to a report on India Today, on 1 January 2020 thousands of International Muslim delegates had arrived India to attain that congregation. The result of that assembly became worst when on 18 March 2020 an Indonesian preacher found coronavirus positive in India. His death while travelling in Telangana (India) had alerted Indian government to assist screening test for Covid-19 of all the participated preacher of Tablighi Jamaat congregation. Few of the participants had succumbed to Covid-19 and hundreds of Jamaati missionaries were hospitalized across 17 Indian states **[22]**. On 25 March 2020, an Indian Islamic preacher who was one of the participants of Tablighi Jamaat was reported dead in Srinagar. The Islamic congregation became an alarming bell on 30 March 2020 when six Jamaati were announced dead due to Covid-19 in Talangana, India **[23]**. Undoubtedly, the Islamic gathering in New Delhi had become one of the reasons of Covid-19 outbreak in India.

**2. Transmission of Covid-19 by concealing travel history**

In India, one of the most well known cases of Covid-19 was the concealing travel history by an Indian well known singer. The patient had travelled to United Kingdom and reached India on 9 March 2020. In spite of keeping herself 'self-quarantine', she visited Taj Hotel of Lucknow and attended social gathering with people including Indian politicians, socialites and bureaucrats when she was asymptomatic but might be a carrier of coronavirus **[24, 25]**. On 13 March 2020, she had a mild fever, dry cough, rinsing nose and when test, she was found Covid-19 positive. She unwillingly transmitted that deadly virus to many of the Indians and added her name to the list of those irresponsible people who made the situation more difficult to overcome.

**3. Traveller from Italy became 'Super spreader' in Sikh festival**

A 70 year Sikh preacher Baldev Singh had traveller to Italy and Germany and ignored self isolation policy of Indian government. The man attended one of the biggest Sikh festive gathering 'Sikh festival' of Hola Mohalla in Anandpur Sahib, Punjab (India) from 10 March to 12 March 2020. The site was visited by thousands of Sikh preacher. The man was found dead of Covid-19 and also consummated many others by virus. Thousands of residence in Punjab was sealed to overcome the situation. The fear of outbreak of Covid-19 by 'super spreader' could bring a catastrophe in a country with 1.354 billion nationals **[26]**.

**4. A survey on travel history of some of the Covid-19 survivors**

**Case I:** Delhi's first Covid-19 positive- Rohit Dutta

Rohit, a Covid-19 survivor had travel to Italy on 16 February 2020 and left on 21 February to Milan. From Milan, he had a travel to Budapest, a capital city of Hungary. After a halt in Budapest he then moved to Vienna, national capital of Austria. From Vienna airport he flew to India on 24 February and landed in Delhi airport on 25 February 2020. After a long tour, he felt a mild fever at midnight of 25 February which continued till 28 February. Finally on 29 February he consulted a doctor and was tested for Covid-19 in Ram Manohar Lohia Hospital of Delhi NCR India. On 1 March, he was confirmed as Covid-19 positive and admitted in hospital for 15 days quarantine **[27, 28]**. After hospital quarantine, he was self-quarantined for 14 days for complete recovery from Covid-19.

**Case II:** A traveller from United State recovered in Bangaluru- Venkata Raghava

Venkata Raghava from Bengaluru, India had successfully fought Covid-19. He travelled to Los Angeles, California (US) through Heathrow international airport in London, UK, where he came across with many people and might got infected there **[29, 30]**. On 6 March 2020 he felt a low grade fever and then he planned to go back to his country. He preponed his flight to India and on 8 March 2020 he reached his hometown Bangaluru. The patient had some doubt about some of his corona symptoms, so he advised his wife to keep distancing with him and he kept himself in self-isolation in an upstairs room of his duplex. On the same day at 4 pm he went to Rajiv Gandhi Institute of Chest Diseases for check up, where because of his travel history he had a corona test and sent back to his home for self-quarantine. Next day afternoon he had a call from Dr. Padma Saikia (Medicine specialist in Bangaluru) and asked to get admitted for the treatment of Covid-19. The patient had a high viral load and was sent to an isolation centre. His entire family was tested and were found negative. Soon after treatment and quarantine, the patient recovered from Covid-19.

**Case III:** Survivor of coronavirus positive- Amit Kapoor

Amit kapoor came in News as a recovered Covid-19 patient. He flew to Italy from Delhi airport and landed in destination on 18 February 2020. After a few days stay, he travelled to Hungary and reached Hungary on 22 February. He then reached Amsterdam on 24 February and again after few days halt he moved to Iceland on 29 February. Finally after a long tour he returned to India and reached Delhi on 1 March 2020. After coming back to his country, he was tested positive for Covid-19 and admitted in hospital in New Delhi. He was quarantined in hospital from 3 March to 15 March 2020 and after discharge he self-quarantine for further 14 days. Meanwhile on 24 March he was reported completely recovered from coronavirus **[31]**.

**Covid-19 treatment in India 2020**

Indian microbiologists and pharmaceutical researchers were doing regular trial in order to explore the potential treatment of Covid-19. Regular sampling and investigations had provided a ray of light to resolve the mystery of Covid-19. Scientists from all over India were trying days and nights to identify a potential anti-corona medication for the sufferers of coronavirus. Some trials were in process of making antiviral vaccinations for the prevention of pandemic coronavirus disease. Since studies were in process, thus it was not possible to disclose the chemical compounds used during the investigations but in some of the articles scientist had provided a brief description of their work done. In the present article, a research has been done on the 2020 treatment therapies in India against coronavirus.

**1. Indian Council of Medical Research (ICMR)**

ICMR works under the Ministry of Health and Family Welfare of India were involved in the investigation against spreading of coronavirus. Scientist from ICMR had suggested the use of hydroxychloroquine prophylaxis as a potential drug against Covid-19. In a report, it had been advised that a dose of 400 mg of chemoprophylaxis in combination with hydrochloroquine if provided to an asymptomatic person twice on first day then after once in a week could prevent coronavirus influenced respiratory infections. Providing the given medication to a medical staff or any person who was on a regular exposure to Covid-19 patient could work as a preventive measure **[32]**.

**2. Sawai Man Singh Hospital (SMS hospital)**

SMS hospital of Jaipur had cured their Covid-19 patients with the help of combination of drugs used for the treatment of swine flu, HIV and malaria. Doctors of SMS hospital had named it as 'magic medicine' for coronavirus. For the treatment they included Oseltamivir used for the treatment of swine flu, Chloroquine well known as a malaria drug in combination with HIV drugs, Lopinavir and Ritonavir **[33]**. The medical staffs of SMS had treated 3 positive patients of coronavirus using 'magic medicine' which included one Indian and two Italian tourists. A sixty-nine year old Italian man with his seventy year old wife were tested positive for Covid-19 by the National Institute of Virology, Pune, were send to SMS hospital for the treatment. Doctors who were already permitted by the ICMR, Delhi for treating Covid-19 using antiretroviral therapy, admitted the patients and kept them in an isolation room. As a result of the execution of the treatment plan, both of Italians were recovered and the Italian embassy in Delhi was informed about the discharge of the patient. The doctors of SMS hospital were appreciated and were asked about their mode of treatment by other Indian states.

**3. Sample Testing Strategy by Chhattisgarh (CG) Government**

Department of Health and Family Welfare of CG government had provided coronavirus testing strategy to all the medical staffs of government hospitals which comprises following sample testing details for-

- All symptomatic persons who have international travel history in last 14 days.

- All asymptomatic persons who have international travel history in last 14 days must be tested once between 5$^{th}$ to 14$^{th}$ days of arrival in the country.
- All symptomatic health care persons.
- All asymptomatic persons who came in direct contact with symptomatic person must be tested in between 5$^{th}$ to 14$^{th}$ days from contact.

**Treatment protocol by CG government:**

Patients with symptoms like fever, dry cough and sore throat should be treated as per the protocol provided in **Table 1**. The details of Covid-19 management protocol for Covid-19 positive patients by CG government have given in **Table 2**.

As shown in **Fig. 1**, a separate fever screening section (OPD) had been made by hospital authorities to screen suspected person showing symptoms of Covid-19. In that section only 2 to 3 doctors were permitted to examine suspected people in order to avoid the risk of transmission of infection to all the asymptomatic doctors. **Fig. 2** showing doctors wearing personal protective equipment before treating Covid-19 patients.

**Defence Research and Development Organisation (DRDO) India**

DRDO works under the Ministry of Defence of India which has a network of research laboratories which were engaged in developing safety equipments to cope with coronavirus. The laboratories had developed some of the safety equipment in 2020 as mentioned below-

**1. Contactless sanitizer dispenser**

A contactless sanitizer dispenser was a device developed by DRDO and one of its research laboratories known as Centre for Fire Explosive and Environment Safety (CFEES) Delhi, in order to sanitize hands without any touch **[34]**. The machine consists of a sensing device which gets activated when someone brings his hands near to it. As soon as a person put hands close to the nozzle, it automatically supplies 10 mL of alcohol based sanitizer for 20 seconds. According to the guidelines of WHO, it was sufficient to rub our hands for 20 seconds using any kind of disinfectant soap or sanitizer. The aim behind the development of such a contactless sanitizer machine was to sanitize hands without touching that equipment or any switch.

**2. Full Body Disinfection Chamber**

Vehicle Research Development Establishment (VRDE) Ahmednagar laboratory of DRDO had developed full body disinfection chamber as a precautionary measure to prevent the spreading of coronavirus. It was a closed system which decontaminates using soap and sanitizer spray. At the entrance there is a foot pedal which had to be pressed before entering the chamber and when a person entered, spraying of disinfectant started **[35]**. DRDO named it as personal santisation equipment that consist of a dispenser tank for the storage of 700 L sanitizing fluid that can sanitize atleast 655 people once when filled completely.

**3. India's First Covid-19 sample collection mobile lab**

First mobile laboratory was developed by DRDO for Covid-19 sample collection which was named as 'Mobile BSL-3 VRDL Lab'. The machine was approved by ICMR and launched by

defence minister of India Mr. Rajnath Singh. Every day the mobile lab had tested thousands of samples for the treatment of Covid-19 in India.

**4. Ultraviolet-C radiation sanitization box**

Short-wavelength UV-C were categorised as the most powerful and energetic type of UV radiation. According to National Health Commission, Coronavirus could be eliminated when exposed to ultraviolet radiations. It can sanitize office, hospital, house, furniture and even small items like mobile phones, money bag, grocery and many more. It cannot be used for human sanitisation, since exposure of UV-C radiations to humans could bring skin damages and could also be carcinogenic.

**2020 Covid-19 Lockdown- a precautionary measure:**

On 22 March 2020 Prime Minister of India announced a voluntary '14 hour's public curfew' in order to break the chain of transmission of infection by maintaining public distancing. PM appealed to not to step out of homes and announced the suspension of all modes of public transportation, all the services and workplaces were closed except security forces, hospital facilities, media and cleaners assigned for sanitation **[36]**. For further maintaining public distancing, Prime Minister again declared a 21 days long lockdown in nation started from 25 March till 14 April 2020. During the period of lockdown, all the public activities were restricted and the complete nation was under official's observation, however, people were allowed to fulfil their daily needs like purchase of milk, bread and vegetables within the provided time slot which was controlled by local cops. The result of that lockdown had surely suppressed the spreading of coronavirus and slowed the number of cases in India. Devoid of powerful medical facilities, India had shown coronavirus pandemic to lesser extent. The influence of complete shutdown in nation had definitely suffered people but it was the need of the time. By looking at the increasing number of coronavirus positive cases, the government decided to extent the lockdown till 3 May 2020. The order for extension in lockdown for further 2 weeks was announced by PM Modi on 2 May 2020 and the whole country was segmented into red, orange and green zones based on current number of coronavirus cases **[37]**. Zone with coronavirus pandemic hotspots was termed as red zone. The red zone will be under 100 % surveillance and was strictly ordered to follow all guidelines of lockdown. Those areas which had lesser number of positive cases in last few weeks were included in orange zone. Rest of the areas with no positive case in last few weeks was classified as green zone. People living in green zone was permitted for almost all activities except mass gathering which included opening of colleges, schools, shopping malls, restaurants and bars.

**Conclusion:**

The review is based on the first wave of COVID-19 pandemic in India. In the present review, a research has been done on the impact of travelling in the spreading of novel coronavirus in India. The studies revealed that the transmission of coronavirus was initiated through travelling. At the beginning when travelling was not restricted, a lot of travellers came in direct contact with

infected persons which became the easiest mode for transmission of the disease that lead to the origin of the outbreak of Covid-19 in many countries including India.

The author wanted to highlight the high ignorance on the restriction of the movement of people during the initial stage of infection. Controlling measures like restriction in travelling and social distancing through lockdown, public awareness about the symptoms of disease for early diagnosis, self quarantine and proper sanitation in the early days of January could prevent the spreading of virus worldwide and hence the disease could never have been pandemic.

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**Conflicts of Interest:**

The author does not have any conflicts of interest.

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**Captions for Figures-**

**Figure 1** Fever screening section in hospital (courtesy: Dr. Chhaya Shori)

**Figure 2** Doctors wearing personal protective equipment (courtesy: Dr. Chhaya Shori)

**Tables:**

**Table 1** showing treatment protocol by Chhattisgarh government, India.

| **Tablets** | **Dose** |
|---|---|
| Chloroquine Phosphate | **Day 1**: 1000 mg (16.6 mg / Kg) 4 tablets<br>**Day 2**: 500 mg (8.3 mg / Kg) 4 tablets<br>**Day 3**: 500 mg (8.3 mg / Kg) 4 tablets<br>**Day 4**: 500 mg (8.3 mg / Kg) 4 tablets<br>**Day 5**: 500 mg (8.3 mg / Kg) 4 tablets<br>**Followed by**<br>500 mg (8.3 mg / Kg) 2 tablets / week for 3 weeks |
| Paracetamol | 500 mg / 08 hourly / SOS |
| Cetirizine | 10 mg HS (at night) |
| Pantoprazole | 40 mg OD empty stomach |
| Doxycycline | 100 mg BD for 05 days |

**Table 2** showing COVID-19 management protocol for COVID-19 positive patients

| **Group** | **Clinical Criteria** | **Treatment** | **Remarks** |
|---|---|---|---|
| **A.** Asymptomatic | | | |
| **1.**without comorbidity | No H/o fever, cough, running nose, shortness of breath | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 4 days<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 4 day | Do not switch between HCQ & chloroquine<br>HCQ / chloroquine should be taken post meal |
| **2.** with comorbidity (any of the following: > 60 years, diabetes, HTN / IHD /COPD immunocompromised state, immunosuppressive drug, CKD) | No H/o fever, cough, running nose, shortness of breath | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 4 days<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 4 day<br>+<br>Symptomatic treatment as advised by treating physician | HCQ / chloroquine should be taken post meal |
| **B.** symptomatic / URTI without comorbidity | No H/o fever, cough, running nose, shortness of breath, RR < 24 min, SpO2 > 94% normal chest on auscultation | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 4 days<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 4 day<br>+<br>Cap. Oseltamivir 75 mg. BD for 5 days<br>+<br>Tab. Azithromycin 250 mg BD for 5 days<br>OR<br>Tab. Doxycycline 100 mg twice daily for 5 days<br>+ | |

| | | | |
|---|---|---|---|
| | | Tab Citrizine 10 mg OD<br>+<br>Tab PCM 500 mg SOS / 8 hourly (not more than 3 gm/ day)<br>+<br>Tab Pantaprazole 40 mg OD (Empty stomach) | |
| **C.** symptomatic / URTI with comorbidity (any of the following- > 60 years, diabetes, HTN / IHD /COPD immunocompromised state, immunosuppressive drug, CKD) | H/o fever, cough, running nose, shortness of breath, RR < 24 min, SpO2 > 94% normal chest on auscultation | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 4 days<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 4 day<br>+<br>Cap. Oseltamivir 75 mg. BD for 5 days<br>+<br>Tab. Azithromycin 250 mg BD for 5 days<br>OR<br>Tab. Doxycycline 100 mg twice daily for 5 days<br>+<br>Tab. Lopinavir 200 mg / Ritonavir 50 mg 2 Tab. BD for 5 days<br>+<br>Tab. Citrizine 10 mg OD | 1. ECG mandatory (calculate QT interval) before initiating treatment & SOS<br>2. X-ray required<br>3. Monitor LFT every 3rd day |
| **D.** symptomatic with pneumonia without respiratory failure / MODS | No signs of severe pneumonia | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 9 days<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 9 day<br>+<br>Cap. Oseltamivir 75 mg. BD for 10 days<br>+<br>Tab. Azithromycin 250 mg BD for 10 days<br>OR | 1. ECG mandatory (calculate QT interval) before initiating treatment & SOS<br>2. X-ray required<br>3. Monitor LFT every 3rd day |

| | | | |
|---|---|---|---|
| | | Tab. Doxycycline 100 mg twice daily for 10 days<br>+<br>Tab. Lopinavir 200 mg / Ritonavir 50 mg 2 Tab. BD for 10 days<br>+<br>Tab. Citrizine 10 mg OD<br>+<br>Tab PCM 500 mg SOS / 8 hourly (not more than 3 gm/ day)<br>+<br>Tab Pantaprazole 40 mg OD (Empty stomach) | |
| **E.** symptomatic with severe pneumonia without respiratory failure / MODS | Any one of:<br>1. RR- > 24 / min<br>2. SpO2- < 94 % on room air<br>3. Confusion / drowsiness<br>4. Systolic BP < 90 mm of Hg or diastolic BP < 60 mm of Hg | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 9 days<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 9 day<br>+<br>Cap. Oseltamivir 75 mg. BD for 10 days<br>+<br>Tab. Azithromycin 250 mg BD for 10 days<br>OR<br>Tab. Doxycycline 100 mg twice daily for 10 days<br>+<br>Tab. Lopinavir 200 mg / Ritonavir 50 mg 2 Tab. BD for 10 days<br>+<br>Tab. Citrizine 10 mg OD<br>+<br>Tab PCM 500 mg SOS / 8 hourly (not more than 3 gm/ day)<br>+<br>Tab Pantaprazole 40 mg | 1. ECG mandatory (calculate QT interval) before initiating treatment & SOS<br>2. X-ray required<br>3. Monitor LFT every 3rd day<br>4. Other treatment as advised by treating physician |

| | | | |
|---|---|---|---|
| | | OD (Empty stomach)<br>+<br>Fluid management<br>+<br>Ventilatory management as per ARDS protocol<br>1. closed suctioning and use of HME filter<br>2. corticosteroids to be avoided<br>3. avoid aerosol producing procedure | |
| **F.** Prophylaxis | For health care worker & contact of lab. Confirmed cases | Tab. HCQ (Hydroxy chloroquine) 400 mg. BD on day 1 then 200 mg. BD for 7 weeks<br>OR<br>Tab. Chloroquine 500 mg. BD on day 1 then 250 mg. BD for 7 weeks | |
| (For children chloroquine / 8.3 mg/ Kg OR HCQ (Hydroxy chloroquine) 6.5 mg/ Kg) | | | |

**Figures:**



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