



## Current treatment protocol for COVID-19 in India

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### ABSTRACT

The whole world is now facing the battle against the severe and dangerous pandemic COVID-19, which is not only physically harming, but also mentally disturbing because of the unceasingly escalating number of affected patients and deaths globally. In India, the containment strategies constitute in identifying, tracing-contacts, quarantine, social distancing, and following other health advisories. The current treatment protocols include real-time PCR test and Point-of-Care molecular diagnostic assays for its diagnosis; some states in India have begun the pool testing. Hydroxychloroquine (HCQ) is being recommended as chemoprophylaxis drug for asymptomatic health-care personnel handling COVID-19 cases, frontline workers, and asymptomatic contacts of the confirmed cases, while hydroxychloroquine-azithromycin combination for patients with serious sickness. India has also launched 'ArogyaSetu' mobile-application for tracking the movements of the citizens and has also commenced convalescent plasma therapy to combat the deadly COVID-19. This timely article is a report on the current situation of COVID-19 in India. The discussion can throw light on the potential of a developing country such as India to deal with the pandemic and some of these can be helpful in adverse circumstances in the future.

### 1. Introduction

The first case of COVID-19 in India was confirmed on 30th January 2020 [1]. Presently, The Ministry of Health and Family Welfare, India has verified an overall 1,45,380 cases, 80, 722 active-cases, 60,491 recoveries (counting 1 migration) and 4167 deaths in the nation by May 26, 2020 [2]. SARS-CoV-2 virus can spread via droplets produced when an infected person coughs, sneezes or exhales. The close contact with such infected individual or touching nose, mouth, or eyes after touching the virus-contaminated surfaces can make people infected [2]. This pandemic has brought along some grievous and unprecedented socio-economic challenges making the situation much more difficult physically, emotionally as well as psychologically. The mental stress and anxiety have increased due to the frustration and fear because of social isolation, worrying about oneself and loved ones, inadequate supplies/information, financial-crisis, relentlessly using social media, or watching/reading news stories regarding the pandemic. The situation is

particularly tough for children, pregnant women, older people, those who are already undergoing some sort of mental health conditions or chronic illness in addition to frontline workers [3,4].

### 2. Treatment protocol

Indian government has encouraged strictly the practice of social-distancing and implemented complete nation-wide lockdown to contain the spread of virus [5]. In addition, nation-wide complete lockdown has been executed in four phases; (1) March 25 – April 14, (2) April 14 – May 3, (3) May 4 – May 17, and May 18 – May 31, 2020 [6–9].

Real-time PCR test and Point-of-Care molecular diagnostic assays are being used for the diagnosis of this disease in the country. The rapid antibody test has also been suggested as a supplementary test, which is only good for surveillance as the results come after 7–10 days of the pandemic infection [10]. Pool testing is commenced at several places by testing 5 samples at once, which helps in increasing the capacity of the

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labs for screening of the rapidly-growing number of samples that use molecular testing [10]. Presently, there is neither any vaccine nor any specific antiviral drug available against SARS-CoV-2. The potential vaccines as well as specific drug actions are being investigated via clinical trials. Numerous clinical trials including western as well as traditional medicines are in progress. The Ministry of Health and Family Welfare, India stated that work with 11 isolates is going on and a minimum of 1.5–2 years are required for the development of a vaccine, even on a fast track basis [2].

Anti-malarial drug HCQ is recommended for prophylactic use by the asymptomatic healthcare personnel handling COVID-19 cases, asymptomatic frontline personnel, including paramilitary/police staff related with COVID-19 associated activities (400 mg twice a day for 1 day subsequently 400 mg once every week for 7 weeks), and asymptomatic household contacts of the confirmed patients (400 mg twice a day for 1 day subsequently 400 mg once every week for 3 weeks). However, it is not recommended for kids with ages <15 years, pregnant and lactating women [11]. A combination of HCQ (400 mg twice a day for 1 day subsequently 200 mg twice a day for 4 days) and azithromycin antibiotic drug (500 mg once a day for 5 days) is supposedly recommended for patients with serious sickness under the appropriate medical supervision. Proper medical supervision and monitoring of any side effects including QTc interval is mandatory [12].

Hydroxychloroquine has shown an inhibiting effect on SARS-CoV-2 *in vitro*, which became the choice for trials [13]. However, reports have advocated that cure with HCQ or its combination with a macrolide might result in cardiovascular adverse outcome of the extension of the QT interval [14,15]. However, no evidence is exactly given yet to prove the benefit of this drug (alone or in combination with azithromycin), instead an increased risk of ventricular arrhythmias has been proposed [16].

India has commenced controlled trials of convalescent plasma therapy on severely-ill patients; those having respiratory rate >30 breaths per min, oxygen saturation of <90%, or else have infiltrates in the lungs. The recovered persons showing no symptoms after 28 days of recovery with age <60 years and no pre-existing conditions such as diabetes, hypertension, or heart problems can be chosen as donors [17,18]. The Council of Scientific and Industrial Research (CSIR), India is working towards the investigation of activated vaccine development such as RNA vaccines and recombinant DNA vaccine [17]. CSIR has also started ACQH trials for COVID-19 as it had manifested favorable outcomes in case of dengue treatment; ACQH is a plant extract that occurs in tribal areas of Gujarat, Jharkhand, and Madhya Pradesh states in India [19]. Moreover, the clinical trials of Favipiravir drug have also commenced in India [20].

India has launched 'ArogyaSetu' mobile-application, which is an informative tool to spread the awareness regarding COVID-19 amongst the common public [21]. The app is available on android phones as well as iOS mobile systems and provides information of the latest situation and health services related to COVID-19 to the users. The app utilizes the Bluetooth and GPS tracker of the mobile phones to identify if someone has crossed the paths with the disease-ridden individual by completely scanning the user's location as well the database of the confirmed cases in the country. The details of the infected individuals are kept confidential so that there is no fear of social rejection or stigma among the people [22].

### 3. Conclusion

India is an immensely-populated country and hence, the country needs to take watchful steps. The use of masks, frequent hand-washing, proper sanitization, social physical distancing, avoiding crowds and a healthy lifestyle must be the new normal life. To contain the spread, foremost emphasis is essential on the rigorous testing, necessary equipment, ventilators, research and development activities. Regular counseling of people is also imperative to reduce the mental-stress, which is inevitable in such difficult situations. It is vital to come up with the sustained advancemental policies after the COVID-19 experience to deal

with such unprecedented circumstances with a holistic approach. One has to win this war quite intelligently with the public support and alertness. In a way, COVID 19 has taught people the highest discipline of life.

### Declaration of competing interest

The authors declare no intellectual or financial conflicts of interest.

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