Novel Corona Virus (nCOVID-19; India): Chain Reaction Disease (CRD); Precaution-Prevention, Treatment A Review

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Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Corona virus-2 (nCOVID-19), causes respiratory infection including cold, fever, sneezing and coughing, pneumonia, headache, diarrhea and upper respiratory diseases. It transmitted human to human via airborne droplets. Corona virus enters in human cell through membrane ACE-2 exopeptidase receptor. Corona virus (CV) previously it treated as non-fatal virus (NFV), HCoV-NH, SARS and MERS-CoV and SARS-CoV. It was first isolated from Wuhan market China at December 2019, in world thus its name nCOVID-19. It is a Chain Reaction Disease (CRD) because of tremendously spread through contact human to human. WHO and ECDC advised to avoid public place - social distance and close contact (person-person) to infected persons, airborne droplet

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through sneezing and coughing. Some precautions, preventive measures, and treatment for formerly synthesized anti-malarial, anti-biotic and anti-inflammatory etc drug used on novel coronavirus disease.

Keywords: Flue influenza (FE) (1918); flu-like symptoms - CoV (1960); HCoV-NH: MERS-CoV; corona virus or SARS-CoV (2002-2005, 2012-2013); nCOVID-19 (2019); nCOVID-20(2020); chain reaction disease (CRD); treatment and precautions; prevention; India.

ABBREVIATIONS

nCOVID : Novel corona virus disease
SARS : Severe acute respiratory syndrome
NFV : Non fatal virus, CV- corona virus
HCoV-NH : Heaven new human coronavirus. Precaution, prevention and some treatment

1. INTRODUCTION

Over 100 years, since the outbreak of the 1918 influenza pandemic name virus as ‘Spanish Flu Enfluenza’ (SFE) due to this Crore of people were died in various countries. Corona means Crown shaped, (like crown ether), club shaped, spherical single stranded and covered with glycoprotein enclosed RNA viruses with a very characteristic appearance in electron micrographs (EM) of negatively stained preparations [1,2]. It falls within the same size range (60–140 nm) and spherical shape [3]. It was first discovered in the 1930s when an acute respiratory infection (ARI) of bats, pigs, cats, snake etc animals. In the late 1940s, two more animal coronaviruses, mouse hepatitis virus (MHV) and transmissible gastroenteritis virus (TGEV), were isolated [4]. After twenty year later, human coronaviruses were discovered working with the human strains and a number of animal viruses [5]. First case of corona virus was notified as cold, approximately 500 patients were identified as Flu-like system (fever, chills, sore throat) [6]. Animal studies included, but were not limited to, research that focused on respiratory disorders [7]. Coronavirus OC16, Strain 229E in WI-38 cells these two images was identified by Hamre and Procknow [8] and McIntosh et al. [9]. Severe acute respiratory syndrome (SARS) was first identified in Guangdong Province of the People’s Republic of China in November 2002 and spread from there to Hong Kong, United States America (USA), Singapore, Thailand, Vietnam and in Taiwan and then throughout the world [10]. At that time, SARS affected 26 countries and resulted in more than 8,000 cases through animal-to-human transmission (Guangdong, China) [11]. New human coronaviruses (NHCoV) have been discovered in year of 2003-05. Reported discovery of a NHCoV isolated from a age of 35 week-old girl bronchiolitis and fever by Van der Hoek et al. [12]. Eleven children’s were in the newborn intensive care unit at the time of their sampling and had been hospitalized since birth, related to Kawasaki disease [13,14]. In year 2004, another study report of Hong Kong was confirmed 50 patient of severe acute respiratory syndrome (SARS or SARS-CoV) while 30 of them were confirmed as corona virus (CV) infected [15]. After 8 year (2012), Saudi Arabian reports were presented several infected patient and deaths [16-18]. First cases of Middle East respiratory syndrome Coronavirus (MERS-CoV) infections in France, investigations and implications for the prevention of human-to-human or animals transmission [19]. A number of cases of pneumonia with an unknown origin occurred from Wuhan, China and were reported to the World Health Organization (WHO) on December 31, 2019 [20]. COVID-19 was first identified and isolated from pneumonia patient belongs to Wuhan, China [21,22]. Novel coronavirus (2019-nCoV); forthcoming renamed severe acute respiratory syndrome coronavirus-2 (SARS-2) or nCoV (COVID-2) was confirmed and named coronavirus disease (COVID-19) [23]. Wuhan sea food market also tested positive cases, as a number of cases started increasing exponentially, suggestive of the fact that human-to-human transmission was occurring [24] (Fig. 1).

As on January 30, India reported its first case of COVID-19 in Kerala, which rose to three cases by February 3; all were students who had returned from Wuhan, China [25,26]. The government of Kerala declared high alert from 4 to 8 February and starting 8 March 2020 due to
coronavirus cases being reported from the state [27,28]. As of 9 March, more than 4000 persons are under home or hospital quarantine in Kerala [29]. On 10 March, the government of Kerala shut down all colleges and schools up to grade 7 also urged people to not undertake pilgrimages, attend large gatherings such as weddings and cinema shows [30,31]. As on same date (9 March, 2020) the first positive case of coronavirus in Maharashtra was reported in Pune, where a couple returning from Dubai tested positive [32]. On next day, three more people and were admitted in Naidu Hospital [33].

On 17th of March, first death case were found to the a 64-year-old man at the Kasturba Hospital in Mumbai [34]. On 20 March, Bollywood singer Kanika Kapoor who returned from London tested positive in Lucknow [35]. From Gujarat two cases [36]. Telangana ten new cases [37,38], four people in Lucknow, Uttar Pradesh [39]. Third case was reported in Punjab's Mohali where a 68-year-old women who returned from United Kingdom tested positive [40]. One more person tested positive in Kolkata, West Bengal [41].

three more cases were reported in Maharashtra - one each in Mumbai, Pune and Pimpri-Chinchwad [42]. Two new cases in Himachal Pradesh [43]. Twelve more cases were reported in Kerala five from Ernakulam, six from Kasaragod and one from Palakkad [44]. In Bhiwara, Rajasthan, six people tested positive [45]. After one day, as on 22 March 2020, India observed 14-hour voluntary ‘public curfew’ at the instance of the prime minister “Narendra Modi”. The government followed it up with lockdowns in 75 districts due to COVID cases had occurred in all major cities [46,47]. Further, on 24 March, the prime minister ordered nationwide lockdown for 21 days, affecting the entire 1.3 billion population of India [48,49]. As on 23 March, a 55-year-old man from Kolkata, and a Tibetan refugee from Kangra district in Himachal Pradesh became the eighth and ninth victims of the virus in the country [50,51]. A 68-year-old man from the Philippines died in Mumbai, after initial recovery from the virus [52]. Kerala reported 28 new cases - 19 from Kasaragod district, five from Kannur, one from Pathnamthitta, two from Ernakulam and one from Thrissur [53]. On second day (24 March), a 65-year-old man from Mumbai, the tenth victim of the virus in the country [54], four more cases were reported - three from Pune and one from Satara –Maharashtra [55]. Two more cases were reported in Kozhikode, Kerala having 42-year-old man and 27-year-old person from Cherpuram [56]. Manipur reported its first case in a woman who had returned from the UK [57].

Three more cases were reported in Telangana - one each from Kokapet, Chanda Nagar and Begumpet [58]. Six people tested positive in Punjab, all of whom had come in contact with the 70-year-old who had tested positive for the infection and died of cardiac arrest the previous week [59]. Three cases were reported in Chennai - a 74-year-old male and a 52-year-old female who had returned from the United States US and a 25-year-old female respectively from Switzerland [60]. Mizoram reported its first case in a 50-year-old man with a travel history of Qatar, Amsterdam, Istanbul and Doha [61]. On same day Chief minister announced a statewide lockdown till 31st of march to prevent further spread of Coronavirus and Public transports were shut down. There was no restriction for private vehicles but district to district travels were only allowed with thorough checking [62]. As of 25 March, from Madurai in Tamil Nadu, Indore in Madhya Pradesh and Ahmedabad in Gujarat became the eleventh, twelth and thirteenth victims of the virus in the country [63]. A 29-year-old from Patna, Bihar, who had returned from Gujarat tested positive [64]. Three more cases were reported in Gujarat [65]. Five cases were reported in Tamil Nadu – Chennai [66]. Six cases were reported in Maharashtra - five from Mumbai and one from Thane [67]. As of 26 March, from Srinagar in Jammu and Kashmir [68], Bhavnagar in Gujarat [69] from Gauribidanur in Karnataka [70], from Navi Mumbai in Maharashtra [71] and in Rajasthan [72] became the fourteenth, fifteenth, sixteenth, seventeenth and eighteenth victims of the virus in the country. Three cases were reported in Goa [73]. Four people tested positive in Lucknow, Uttar Pradesh [74]. Five people tested positive in Telangana [75,76]. Fivemfrom Indore, Madhya Pradesh [77]. Three cases were reported in Noida, Uttar Pradesh [78]. Andaman and Nicobar Islands reported its first case [79]. Two more cases were confirmed in Maharashtra from Mumbai and Thane [80]. Three more cases were reported in Bihar from Patna [81,82]. Two positive cases were reported in Andhra Pradesh [83]. On 27 March, Twenty-nine cases were reported in Maharashtra [84,88], otherthen Maharashtra 53 new cases were observed in India [85,86,87,89,90-97]. As of 28 March, from Ahmedabad in Gujarat [98] and a from Telangana [99] became the twenty-third twenty-fourth, twenty-fifth, twenty-sixth, twenty-seventh, twenty-eighth victims of the virus in the country. Fourteen more cases were registered in Maharashtra - twelve from Mumbai and two from Nagpur [100]. Seventeen more cases were confirmed in Karnataka [101]. Thirteen more
cases were confirmed in Jammu and Kashmir [102]. Three cases were confirmed in Madhya Pradesh [103]. Four from Rajasthan [104]. Gujarat reported six more cases [105]. Tamil Nadu reported two more case [106,107]. Kerala [108]. Five from Uttar Pradesh [109]. Another case was reported from Uttarakhand, Raipur in Chhattisgarh, Telangana [110-112] from Delhi [113]. Three from West Bengal [114]. As on 29 March, Twenty-two cases were confirmed in Maharashtra - ten from Mumbai, five from Pune, three from Nagpur, three from Ahmednagar and one each from Sangli, Buldhana and Jalgaon [115]. One from Mumbai in Maharashtra [116]. Twenty more cases were reported in Kerala-eight from Kannur district, seven from Kasaragod and one each from Thiruvananthapuram, Ernakulam, Thrissur, Palakkad and Malappuram [117]. Four cases from Bihar [118-120]. Three cases were reported in Telangana [121]. On 30 March, 14 persons was victims and near about 180 positive cases were confirmed in India [122-127,128-133]. As of 31 March, one case from Thiruvananthapuram in Kerala [134] from Mohali from Punjab [135] became the forty-eighth and forty-ninth victims of the virus in the country. Sixty-four cases were reported in Maharashtra [136]. Fifty-seven more people tested in Tamil Nadu [137]. In Delhi went up by twenty-three [138]. Another twenty-one persons tested positive in Andhra Pradesh [139]. Nineteen cases were reported in Madhya Pradesh [140]. Three local transmissions were detected in Gujarat [141]. Karnataka reported seven cases [142]. Six cases were reported in Kashmir [143]. Five local transmissions were reported in Bareilly, Uttar Pradesh [144]. Four more cases were reported in Rajasthan [145]. First positive case reported in Jharkhand [146].

As we observed, no single person death upto the 10 march 2020, also the rate of infected person so poor, as the negative rate is satisfactory increased (Fig. 1). WHO declared CoV was pandemic from 12 march 2020. The COVID-19 cases were steadily increased from the 15 march to 31 march 2020 (Fig. 2). It took India to reach 40 days to have its 50 case. After that, just it just five days to reach 100 cases (15 March) and five more days to 200 cases (19 March), Crossed 500 cases on 24 March, 1,000 cases at 30 March (Figs. 2, 3). As on 1-2 April, six cases from Mumbai in Maharashtra [147]. In Maharashtra reported thirty-three more cases - thirty from Mumbai, two from Pune and one from Buldhana [148]. Confirmed cases in Delhi increased by thirty-two [149]. 16 positive cases were confirmed in Maharashtra [150]. In Madhya Pradesh [151], Uttar Pradesh [152] 110 people tested positive in Tamil Nadu [153]. 43 cases were reported in Andhra Pradesh [154]. Another more cases In Keral [155]. Guwahati, Assam [156], Rajasthan [157]. 2,000 cases. As on 3 April and over 4,000 cases on 4 April. In India the number of positive cases was observed doubling in every 4 days. Experts believe that India has already started walking on the exponential multiplication phase of the virus. ICMR, while ruling out community transmission scenario in India. As on 5 April, 3,577 positive cases and 83 Deaths in 29 states in India [158]. On 11 April, Two positive cases were reported in Odisha take the state tally to 50 [159]. 92 positive cases were reported in Maharashtra [160]. 7 cases were reported in Karnataka [161]. 54 cases were reported in Gujarat [162]. 117 positive cases were reported in Rajasthan [163]. 2 positive cases were reported in Himachal Pradesh [164]. 1 positive case reported in Patiala District [165]. Later on 2 new cases confirmed in Rewa [166]. 1 more case confirmed in Patankot [167]. 62 positive cases were reported in Madhya Pradesh [168]. As on 11-12 April 2020, the infected and deaths persons were multiple (8, 447 Confirmed, 2,73 deaths) in 31 different states from India (Fig. 4) [169]. Among these period, in continuation of vaccine preparing on COVID-19 in India, one being ZydusCadila, replicating viral vector and developing DNA plasmid vaccine [170] and other being Hyderabad based ‘Bharat Biotech’ in collaboration with US based ‘FluGen’, expecting first clinical trials of a nasal vaccine by late 2020 [171]. Till early second half of February, Serum Institute of India had begun animal trials of it nCOVID vaccine candidates followed by Zydus Cadila in March [172]. After two days later, On 15 April (Totalpositive cases 12,759 deaths 420), the number of positive cases in India exceeded 11,000 [173]. 39 deaths has been reported [174]. 76 positive cases were reported in Indore [175]. Five positive cases were reported in Dharavi – Mumbai [176]. 56 positive cases were reported in Gujrat [177]. 29 cases reported in Rajasthan [178]. 19 positive cases were reported in Andhra Pradesh [179]. 183 positive cases were reported in Mumbai [180]. only one positive case was reported in Kerala [181]. 15 case were reported in Karnataka [182]. 38 cases reported in Tamil Nadu [183]. As on 16 April, 28 deaths has been reported [184]. 19 positive cases were reported in Agra [185]. 22 positive cases were reported in Andhra Pradesh [186]. 2 positive cases were reported in Bih [187]. 15 cases were reported in Tamil Nadu [188]. 34 cases were reported in
Karnataka [189]. 107 cases were reported in Mumbai [190]. 7 cases were reported in Kerala [191]. 2 cases were reported in Assam [192]. 6 cases confirmed from Jalandhar District in Punjab [193]. As on 17 April, 32 deaths has been reported [194]. 56 positive cases were reported in Tamil Nadu [195] and new 15 positive cases were reported in Dharavi [196]. Upto the date, total positive 13,835 and deaths cases 452 were observed. On 18 April, According to Ministry of Health and Family Welfare total deaths 488 cases and total positive 14,378 cases among these 4,291 (29.8%) cases are affected by Nizamuddin Markaz cluster. 84 percent in Tamil Nadu, 63 percent in Delhi, 79 percent in Telangana, 59 percent in Uttar Pradesh and 61 percent in Andhra Pradesh are related to this incident & 1,992 patients has cured till the date, which is overall cure 13.85% of the total patients [197].

Fig. 1. Transmission of nCOVID-19 via airborne droplet, handshake, public place

Fig. 2. nCOVID-19 confirmed new cases, recovered and death by day in India
2. DRUG MECHANISMS OF ACTION [198-200]

The mechanistic action; corona virus (non-living) if it is come contact with human body specially mouth, nose, eye etc. then it becomes or we can say 'plays as living thing' and goes to drug action target (Fig. 5). The drug may act to reduce SARS-CoV-2 infections are of considerable interest, as this information could be valuable for identifying new prophylactic and therapeutic candidates. Drug becomes entrapped in membrane-enclosed low pH organelles, interfering with their acidification [198]. In which drug treatment leads to an increase in lysosomal pH. Speculation on chloroquine-induced antiviral effects include inhibition of pH-dependent viral fusion/replication and prevention of viral envelope glycoprotein as well as host receptor protein glycosylation [198]. In malaria-causing plasmodium parasites, drug accumulates in the digestive vacuole where it is thought to prevent pH-dependent detoxification of heme, which is produced upon parasitic consumption of haemoglobin to obtain free amino acids [199]. Additionally, it is probable that drug exhibits host effects, independent of direct viral action, by attenuating the expression of pro-inflammatory factors and receptors [198], which can induce acute respiratory distress syndrome, which is primarily responsible for coronavirus-associated mortality [200].
Fig. 5. Possible mechanism by which drug exerts therapeutic effects against COVID-19(SARS-CoV-2)

3. PRECAUTION [201], PREVENTION [202-207]

♦ nCOVID-19 (nCOVID-20 in India) virus is expelled as droplets from the respiratory tract of an infected individual (for example during coughing and sneezing) directly onto a mucosal surface of a susceptible individual(s) or environmental surface(s).
♦ some studies suggest that droplets could travel on long and short distance; a distance of at least 1-2 meters has been used for deploying droplet precautions; however, this distance should be considered as the minimum rather than an absolute, ten ways to make sure you to avoid corona virus disease [201];

1. Avoid close contact with people who are sick. Maintain at least two to three feet distance between yourself and anyone who is coughing or sneezing.
2. Avoid touching your eyes, nose, and mouth.
4. Cover your cough or sneeze with a tissue, then dispose of the tissue safely.
5. Clean and disinfect frequently-touched objects and surfaces using a regular household cleaning spray or wipe.
6. Wearing a mask is not necessary unless you are taking care of an infection. The Centers for Disease Control (CDC) does recommend that only infected people wear masks to prevent the spread of the virus.
7. Wash your hands often with soap and water for at least 30 seconds, especially after going to the bathroom, before eating, and after blowing your nose, coughing, or sneezing.
8. If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol. Always wash hands with soap and water when hands are visibly dirty.
9. Breathing exercise, use to drink hot water with turmeric, 2-5 times in daily.
10. If you have a fever, cough and difficulty breathing, seek medical attention immediately.

According to WHO and US Centers for Disease Control and Prevention (CDCP) have issued advice on preventing further spread of COVID-19 [201,202]. They recommend avoiding travel to high-risk areas, contact with individuals who are symptomatic, and avoid the consumption of food, vegetable, meat etc from regions with known COVID-19 outbreak. Basic hand hygiene (sanitization) measures are also recommended, including frequent hand washing and the use of PPE such as face masks or two to three folded handkerchief. One of the Japanese-based company 'Bespoke Inc' has also launched an
artificial intelligence-powered Chabot (Bebot) that provides up-to-date information regarding the coronavirus outbreak, preventative measures as well symptom checker [203]. A infectious disease. It is paramount to implement infection control practices by infection source controlling, transmission route blocking, and susceptible population protection [204-207].

4. DISEASES AND TREATMENT (PAST AND PRESENT)

4.1 MERS-CoV

The Middle East respiratory syndrome coronavirus (MERS-CoV).

Treatment [208]: A combination of ribavirin and interferon therapy was used for the treatment of MERS-CoV-positive patients.

4.2 SARS-CoV

Severe acute respiratory syndrome-Corona Virus.

Treatment [209-217]: Ribavirin alone or with interferon [209-217] severe acute respiratory syndrome with lopinavir/ritonavir [218].

4.3 nCoV or CoV-2 or SARS-nCOVID-19 or nCOVID-19

Novel corona Virus-19 or severe acute respiratory syndrome Novel corona Virus-19. (Biological Weapons). As on present surve, number of peoples going to death due virus name as “nCOVID-19” in world (nCOVID-20 in INDIA).

Treatment [219-226]: Some infected person by corona virus were recovered by using anti-malarial, anti-biotic anti-inflammatory naming as hydroxychloroquine (HCQ) (Fig. 6-a), chloroquine (CQ) (Fig. 6-b), azithromycine(Fig. 6-c). rheumatologists and dermatologists to treat immune-mediated diseases or immune-mediated condition, antiviral activity against SARS–CoV-2 in vitro and in small, poorly controlled or uncontrolled clinical studies [219-223]. The data support, drugs used in vitro activity against several viruses, including coronaviruses and influenza, but previous randomized trials in patients with influenza have been negative. In COVID-19, nonrandomized study from France, China in patients with mild to moderate nCOVID-19 found no difference in recovery rates [224-226]. As per literature surve still there is no specific vaccine on corona virus.

4.4 Antiviral Therapy

Based on our clinical research and experiences of using interferon-α in treating bronchiolitis, viral pneumonia, acute upper respiratory tract infection, hand foot mouth disease, SARS, and other viral infections in children.

Treatment [227-240]: Interferon-α nebulization: interferon-α 200,000–400,000 IU/kg or 2–4 μg/kg in 2 mL sterile water, nebulization two times per day for 5–7 days; 2. Interferon-α2b spray: applied for high-risk populations with a close contact with suspected 2019-nCoV infected patients or those in the early phase with only upper respiratory tract symptoms. Patients should use 1–2 sprays on each side of the nasal cavity, 8–10 sprays on the oropharynx, the dose of interferon-α2b per injection is 8000 IU, once every 1–2 hours, 8–10 sprays/day for a course of 5–7 days.

4.5 Lopinavir/Ritonavir

Lopinavir/ritonavir (Fig. 6-d) is sold under the brand name Kaletra among others, it combines lopinavir with a low dose of ritonavir. It is generally recommended for use with other antiretrovirals. It may be used for prevention after a needlestick injury or other potential exposure. It is taken by mouth as a tablet, capsule, or solution [241]. As of 2006, lopinavir/ritonavir forms part of the preferred combination for HIV first-line therapy recommended by the US United States Department of Health and Human Services in 2006 [242].

Treatment [227,243,244]: Lopinavir/ritonavir has been tried to apply to the treatment of adult patients for nCoV pneumonia, but its efficacy and safety remain to be determined.

4.6 Antiviral Western Medicine Treatment

At present, the treatments of patients with nCOVID or SARS-CoV-2 infection are mainly symptomatic treatments.

Treatment [245]: Remdesivir (Fig. 7) was recently reported as a promising antiviral drug against a wide array of RNA viruses. Holshue et al. for the first time reported that treatment of a patient with nCOVID-19 used remdesivir and achieved good results [245], remdesivir effectively in the control of nCoV-19 infection in vitro. In the meantime, also found that chloroquine has an immune-modulating activity and could effectively inhibit in this virus in vitro [246].
5. CONCLUSION

We systematically explained pandemic virus, in past before 100 years ago Flue Like Symptoms (FLS). Slowly the symptoms were changes MERS to CoV (CoV) and now strong symptoms appearing in virus is the novel corona virus. The FLS, MERS, CoV, SARS and SARS-2 (nCOVID-19) are the same family Virus. The SARS-2 or (nCOVID-19) is transmission by human to human (Chain Reaction Disease) via airborne droplets generating by coughing, kissing, sneezing and smooching by infected person.

So avoid these activities by isolate, keep social distance as per WHO and ECDC guideline. Explained some prevention and precautions of corona virus advised by ICMR, WHO. Specially in India, day by day the ratio of infected and deaths persons were increases due to nCOVID-19 virus. Upto the date, ratio of infected and death persons are going increases in Maharashtra state than other state. The infected (positive case) person also cured by using previously synthesized anti-malarial (hydroxychloroquine, Chloroquine, azithromycin, remdesivir etc), anti-biotic, anti-inflammatory as per medical expertise and using ICMR rules and guidelines. Still there are no anti-corona virus vaccine on nCOVID-19 or SARS-2. Future research needed to fight with corona virus disease.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

23. Jin YH, Cai L, Cheng ZS, et al.; Zhongnan Hospital of Wuhan University Novel Coronavirus Management and Research Team; Evidence-Based Medicine Chapter of China International Exchange and Promotive Association for Medical and Health Care (CPAM). A rapid advice guideline for the diagnosis and treatment


31. 12 coronavirus cases in Kerala, grandparents of family from Italy test positive. thenewminute.com. Archived from the original on 11 March 2020.


33. Coronavirus update: 3 more test positive for COVID-19 in Maharashtra, number rises to 5. Livemint.

34. Coronavirus patient, 64, dies in Mumbai; third death in India. Hindustan Times. Archived from the original on 17 March 2020.

35. Baby Doll singer Kanika Kapoor tests coronavirus positive. She hid travel history, threw party at 5-star. Indiatoday.

36. Coronavirus in Gujarat: Gujarat reports first coronavirus cases; two infected - The Economic Times.

37. Coronavirus cases spike in Telangana, 8 positive in one day - Times of India. The Times of India.


39. Coronavirus outbreak LIVE Updates: Ram Navami celebrations cancelled in Ayodhya; 4 test positive in Lucknow*. Firstpost.

40. Coronavirus positive case in Mohali, Total 3 in Punjab India TV.


42. Coronavirus in India live updates: All Delhi malls to be closed. Times of India.


44. 12 fresh COVID-19 cases in Kerala, total goes up to 37. Economic Times.

45. Curfew imposed in Rajasthan's Bhilwara district as nine test positive for coronavirus. Available:www.newindianexpress.com


47. India locks down over 100 million people amid coronavirus fears, Al Jazeera, 23 March 2020.


51. Himachal Pradesh reports first death due to coronavirus, national death toll now 9. India TV.
52. 8th coronavirus death in India: Philippines man dies in Mumbai after initial recovery*.
   India Today.
53. Kerala announces lockdown till March 31 as 28 fresh Covid-19 cases reported*.
   India Today.
   Livemint.
55. Maharashtra COVID-19 positive cases rise to 101. India Tv.
56. Two persons test positive for coronavirus in Kozhikode. Times of India.
57. Manipur Woman Who Returned From UK Has Coronavirus, 1st In North-East. NDTV India.
58. Telangana COVID-19 cases rise to 35; 3 new cases reported from Kokapet, Chand Nagar, Begumpet. India Tv.
60. Coronavirus update: Chennai gets 3 new cases, Tamil Nadu tally reaches 15. Livemint.
61. Coronavirus Outbreak LIVE Updates. Firstpost.
63. 11 coronavirus cases in Maharashtra; budget session to be curtailed. Deccan Herald. 12 March 2020. (Retrieved 12 March 2020)
64. 3 new coronavirus cases in Gujarat; total rises to 38. Economic Times.
65. Tamil Nadu reports five new coronavirus cases; tally goes up to 23. Economic Times.
68. 70-year-old coronavirus patient dies in Gujarat; state toll rises to 3. Economic Times.
70. Covid-19 patient dies in Mumbai, 5 deaths in Maharashtra so far. India Today.

Coronavirus: Three found positive in Goa, youngest is 25 years. Livemint.
Four new COVID-19 cases reported in Lucknow. ANI News.
Two more, including a 3-year-old, test positive for Covid-19 in Telangana. Livemint.
Telangana reports three more COVID-19 positive cases including a doctor couple. The Hindu.
5 more test positive for coronavirus in Indore; total cases rise to 10. Republic World.
Sinha, Snehil Sinha."Three more positive cases from Noida; total 14 | Delhi News - Times of India. The Times of India. (Retrieved 26 March 2020)
Coronavirus: 2 new cases in Mumbai, Thane; Maharashtra total rises to 124. Livemint.
Bihar reports two more Covid-19 cases, total count six. Economic Times.
Coronavirus in Bihar: 20-year old tests positive, total cases in the state increase to seven. Business Insider.
Coronavirus in Andhra Pradesh: Two more test positive, total case in state increase to 10. Business Insider.
Karnataka reports third COVID-19 death; total positive cases in state mounts to 62. Economic Times. 27 March 2020. (Retrieved 29 March 2020)
Coronavirus in Kerala: 39 new cases reported, total patients in state at 164. Economic Times.
COVID-19: With 14 new cases, Telangana records biggest jump in one day to 59. Deccan Herald.
Coronavirus cases in MP rises to 27 with ten new cases in Indore. Business Insider.

107. COVID-19 cases in AP rises to 12 as one more tests positive. The Economic Times. 27 March 2020. (Retrieved 27 March 2020)

108. Chandigarh reports a new case; the total number of cases now stands at 8. PTC News. 27 March 2020. (Retrieved 27 March 2020)

109. Punjab reports 5 new cases, count reaches 38. The Tribune.

110. Rajasthan reports 7 more COVID-19 positive cases, total count 50. Yahoo. 27 March 2020. (Retrieved 27 March 2020)

111. 60-year-old Yemeni national dies due to coronavirus in Delhi. Hindustan Times. 27 March 2020. (Retrieved 29 March 2020)


118. 4 fresh COVID-19 cases in Bihar, number rises to 15. Deccan Herald. 29 March 2020. (Retrieved 29 March 2020)

119. COVID-19 patient's family members test positive in Rajasthan. ANI.

120. Two more test positive for Covid-19, tally reaches 56 in Rajasthan. timesofindia. 29 March.

121. wikipedia.org/wiki/COVID19_pandemic_in_India

122. 45-year-old woman dies of Covid-19 in Gujarat's Bhavnagar, state toll reaches six. Times of India.


125. Coronavirus-positive woman from Ludhiana dies at hospital; Punjab's death toll rises to three. Pune Mirror.


131. Covid-19: Hotspots Noida and Meerut account for 60% cases in Uttar Pradesh. Times of India.

132. 20 fresh coronavirus cases, including 10 in Jaipur, reported in Rajasthan; total rises to 79: Officials. Devidiscourse.

133. 3 member Italy returned family& 2 of their family discharged. Business Standard. 31 March 2020. (Retrieved 31 March 2020)


136. Mumbai starts containing 'cluster infections' after reporting 64 new cases on Tuesday. Livemint. 31 March 2020. (Retrieved 31 March 2020)

137. Tamil Nadu reports 57 new Covid-19 cases in one day. 79% attended Tablighi Jamaat. State tally at 124. India Today.

138. COVID-19 cases in Delhi rise to 120. Outlook.

139. Among the 21 new patients, 18 are Delhi returnees and a 10-year-old boy from Anantapur. The Hindu.

140. 19 new coronavirus cases found in Madhya Pradesh, total 66. Outlook. 31 March 2020. (Retrieved 31 March 2020)

141. Gujarat: 3 more positive for covid-19, total 73. Outlook.

142. Seven new coronavirus cases reported in Karnataka, tally up to 98. Times of India.


144. COVID-19 cases in UP cross 100 mark. Outlook.


146. Malaysian woman found coronavirus positive, first in Jharkhand. outlookindia. 31 March 2020. (Retrieved 31 March 2020)

147. Maharashtra: 33 new COVID-19 cases reported, count rises to 335; death toll 16. India TV. 1 April 2020. (Retrieved 3 April 2020)

148. Number of coronavirus cases in Maharashtra rises to 335.

149. Coronavirus LIVE updates: 32 new cases in Delhi reported, total crosses 150. DNA.


151. Madhya Pradesh: Dead man's sample found coronavirus positive, state toll reaches 6 Indore. India Today. 1 April 2020. (Retrieved 2 April 2020)


153. Tamil Nadu reports 110 new coronavirus cases, all linked to Nizamuddin event. India Today.

154. 43 new coronavirus cases reported in Andhra Pradesh, tally rises to 87. Hindustan Times. 1 April 2020. (Retrieved 1 April 2020)

155. 24 more positive coronavirus cases take the toll to 265 in Kerala. Times of India.

156. Four people test positive for Coronavirus in Assam, total count reaches 5. India Today. 1 April 2020. (Retrieved 1 April 2020)

157. 13 Test Positive For Coronavirus In Jaipur; Total 106 Cases In Rajasthan. NDTV.

159. 2 new COVID-19 cases in Odisha take state tally to 50. Bignewsnetwork. 11 April 2020. (Retrieved 11 April 2020)
160. Maha: 92 new cases of COVID-19 take state tally to 1,666. outlookindia. 11 April 2020. (Retrieved 11 April 2020)
161. Seven new coronavirus cases reported in Karnataka, tally rises to 214. Economic Times. 11 April 2020. (Retrieved 11 April 2020)
162. Tally of COVID-19 patients in Gujarat rises to 432 with 54 new cases. Economic Times. 11 April 2020. (Retrieved 11 April 2020)
165. Patiala reports second cases of COVID-19 PTC NEWS. (Retrieved 11 April 2020)
166. 2 new cases in Jawaharpur, Mohali tally is 50The Tribune. (Retrieved 11 April 2020)
167. Punjab tally rises 158 after fresh cases confirmed from Jalandhar and Pathankot. PTC NEWS (Punjabi). (Retrieved 11 April 2020)
172. The experiment of coronavirus vaccine on animals started in India, hopefully desired results will come in 4-6 months. Inventia. 8 April 2020.
173. India's Tally of COVID-19 Cases Crosses 11,000 Mark; 38 New Deaths Reported. ABP news. 15 April 2020.
174. 1,118 new Covid-19 cases, 39 deaths in India in last 24 hrs: Ten things to know. livemint. 15 April 2020.
178. 29 fresh COVID-19 cases in Rajasthan; number rises to 1,034. Outlook India. 15 April 2020.
180. 183 new coronavirus cases reported in Mumbai; city's tally rises to 1,936. livemint. 15 April 2020.
182. 15 new coronavirus cases reported in Karnataka, total 247. Economics Times. 15 April 2020.
183. 38 new Covid-19 cases in Tamil Nadu, total tally 1,204. Times of India. 15 April 2020.
184. Coronavirus - 28 Deaths, 826 New COVID-19 Cases In Last 24 Hours In India. NDTV. 17 April 2020.
185. 19 more Covid-19 cases in Agra, district tally reaches 167. Times of India. 16 April 2020.
186. 22 new coronavirus cases reported in Andhra Pradesh as of 8:00 AM - Apr 16. Livemint. 16 April 2020.
188. Tamil Nadu reports 25 new coronavirus cases. The Hindu Business. 16 April 2020.
189. Coronavirus: 34 new cases, one death in Karnataka. The Hindu. 16 April 2020.
190. Maharashtra reports 185 more coronavirus cases; 107 more in Mumbai. Wionews. 16 April 2020.
192. COVID-19 Cases in Assam Reach 34 as 2 More Test Positive in Morigaon. Guwahatiplus. 16 April 2020.
193. Coronavirus new cases reported from Jalandhar, Patiala and Pathankot PTC NEWS.

194. Coronavirus - 32 Deaths, 1,076 New COVID-19 Cases In India In Last 24 Hours. NDTV. 17 April 2020.

195. Covid-19 cases see a spike in Tamil Nadu with 56 fresh cases reported, tally at 1,323. India Today. 17 April 2020.


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