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Review Article

A Global Public Health Emergency: COVID-19

Shadab Ali[1], Anjali Sahu[1], Prerana Sahu[1], Harish Sharma[3], Manasi Gulati[4], Sindhu Anil Menon[5], Shailaja Anik[6] and Gyanesh Kumar Sahu*[2]

[1]Research Scholar, Shri Shankracharya Technical Campus Shri Shankaracharya group of Institutions, Faculty of Pharmaceutical Sciences, Junwani, Bhilai (C.G.) India
[2]Assistant Professor, Shri Shankracharya Technical Campus Shri Shankaracharya group of institutions, Faculty of Pharmaceutical Sciences, Junwani, Bhilai (C.G.) India
[3]Associate Professor, MJ College of Pharmacy, Junwani, Bhilai (C.G.) India
[4]Director, Shree Ramesh Chandra Foundation, Durg (C.G.) India
[5]Director Cum Principal, Shri Shankaracharya college of Nursing, Hudco, Bhilai (C.G.) India
[6]Principal, Shri Shankaracharya swami swaroopanand college of Nursing, Junwani, Bhilai (C.G.) India

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Abstract: A highly contagious disease COVID-19, caused by SARS-CoV-2. The World Health Organization has declared the continuing outbreak to be a global public health emergency. Coronaviruses (CoVs) are a major group of viruses known to be responsible for wide spectrum of diseases in numerous species. The CoVs affecting human population are referred to as human coronaviruses (HCoVs). They lead to multiple respiratory diseases, such as pneumonia, common cold, bronchitis and respiratory syndrome. This review systematically summarizes the epidemiology, clinical characteristics, diagnosis, myths and facts, globally scenario and treatment of COVID-19.

Keywords: COVID-19, SARS-CoV-2, Treatment

INTRODUCTION:

The global pandemic of novel corona virus disease 2019 (COVID-19) caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) began in Wuhan, China, in December 2019, and has since spread worldwide. As of April 5, 2020, there have been more than 1.2 million reported cases and 69 000 deaths in more than 200 countries (Kothai, R., & Arul, B. 2020). This novel Beta corona virus is similar to severe acute respiratory syndrome corona virus (SARS-CoV) and Middle East respiratory syndrome corona virus (MERS-CoV); based on its genetic proximity, it likely originated from bat-derived corona viruses with spread via an unknown intermediate mammal host to humans (D'Amico, F. *et al.*, 2020).

The viral genome of SARS-CoV-2 was rapidly sequenced to enable diagnostic testing, epidemiologic tracking, and development of preventive and therapeutic strategies. The name "corona virus" is derived from the Latin word Corona and the Greek word korṓnē, which means crown. When we look this virus through the microscope it shows wide fringe, reminiscent of either royal crown or a solar corona (Harapan, H. *et al.*, 2020).

***Corresponding Author:** Gyanesh Kumar Sahu

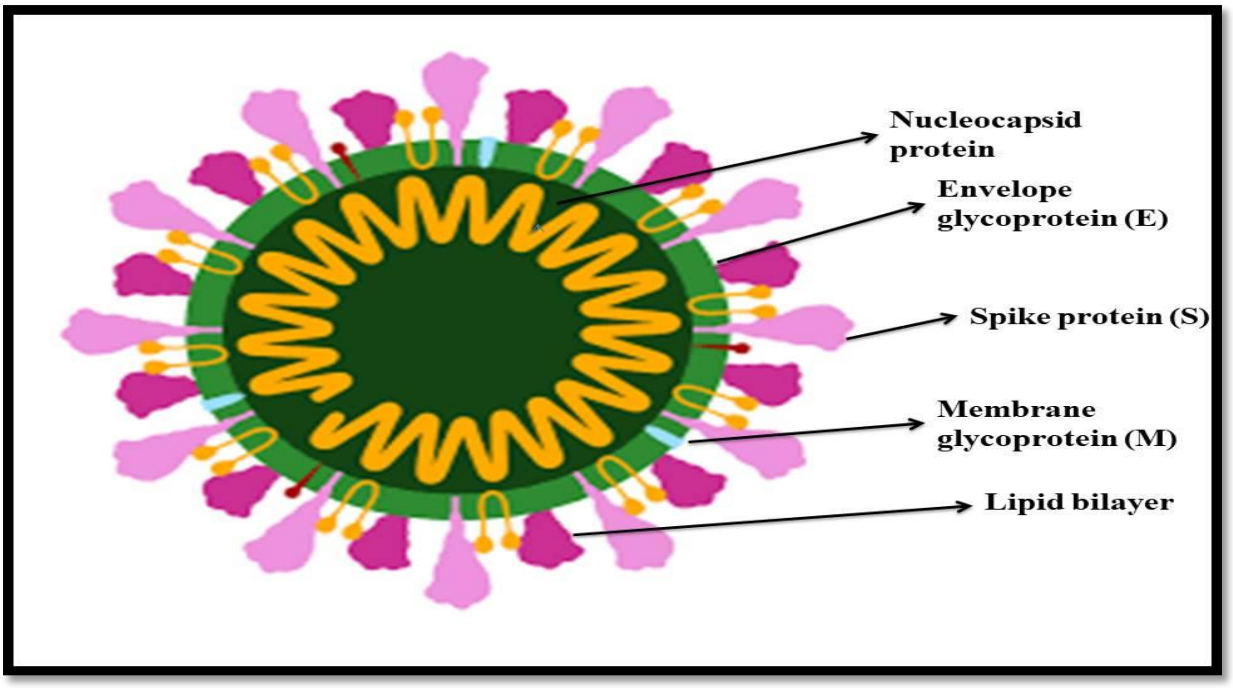


Figure 1: - Basics Structure of Corona Virus.

COVID-19 a name dedicated to Corona virus .a severe acute respiratory syndrome corona virus 2 (SARS-COV-2) the outbreak occurred in December 2019 in Wuhan city, Hubieprovinc China. This outbreak declares as public health emergency by WHO in January 30 2020 (Bains, V. K. 2020).

Corona viruses (CoV) are a huge family of viruses such as:

1. Middle East Respiratory Syndrome(MERS - CoV)
2. Severe Acute Respiratory Syndrome(SARS - CoV)
3. Novel corona virus(nCoV)

It is also known as zoonotic virus means it firstly spread in animals and then to human (Ahmad, T. 2020).

HUMAN CORONA VIRUS TYPES:

Corona viruses are classified into four types such as alpha, beta, gamma, and delta corona viruses. The first human corona virus was identified in 1960 and to date, there are seven human corona viruses were identified (Kachroo, V. 2020).

1. 229E (alpha corona virus)
2. NL63 (alpha corona virus)
3. OC43 (beta corona virus)
4. HKU1 (beta corona virus)
5. MERS – Co V (The beta corona virus that causes Middle East Respiratory Syndrome (MERS))
6. SARS – Co V (The beta corona virus that causes severe acute respiratory syndrome (SARS))
7. 2019 Novel Corona virus (2019-nCov)

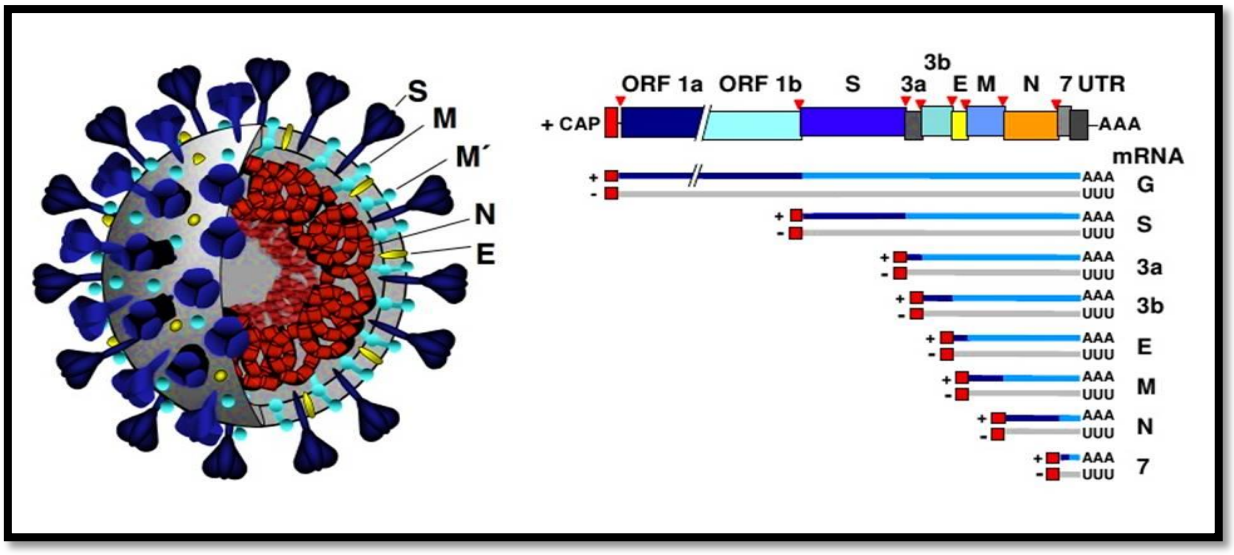


Figure 2: - Corona virus structure and comparison of CCoV and FCoV genome.

SYMPTOMS: It starts from normal cold, flu to mild or severe pneumonic conditions. Many symptoms include:

1. Sneezing
2. Runny nose
3. Cough
4. Watery Diarrhea
5. Fever in rare cases
6. Sore Throat
7. Exacerbated Asthma

Table 1: Comparison between SARS, MERS, COVID-19

Comparison Points	Virus			Reference
	SARS	MERS	COVID-19	
Year	2002-2003	2012-2013	2019-2020	(Guo, Y. R. *et al.*, 2020)
Country of origin	China	Middle East	China Wuhan	(Tobaiqy, M. *et al.*, 2020)
Animal Host Himalayan	Palm Dromedary	Camels Bat	Intermediate host	(Jiang, F. *et al.*, 2020)
Receptor reaction	ACE 2	DPP4	ACE 2	(Khot, W. Y., & Nadkar, M. Y. 2020)
Incubation Period	2 – 10 days	2 – 14 days	2 – 7 days	(Kumar, D. *et al.*, 2020)
Mortality	10%	35 %	2-3%	(Unhale, S. S. *et al.*, 2020)

Here: - ACE: Angiotensin converting enzyme
DDP4: Dipeptidyl peptidase-47,9

LIFE CYCLE OF CORONA VIRUS: Corona virus life cycle divide in several Steps, they are

1. Attachment and entry
2. Replicas protein expression
3. Replication and transcription
4. Assembly and release

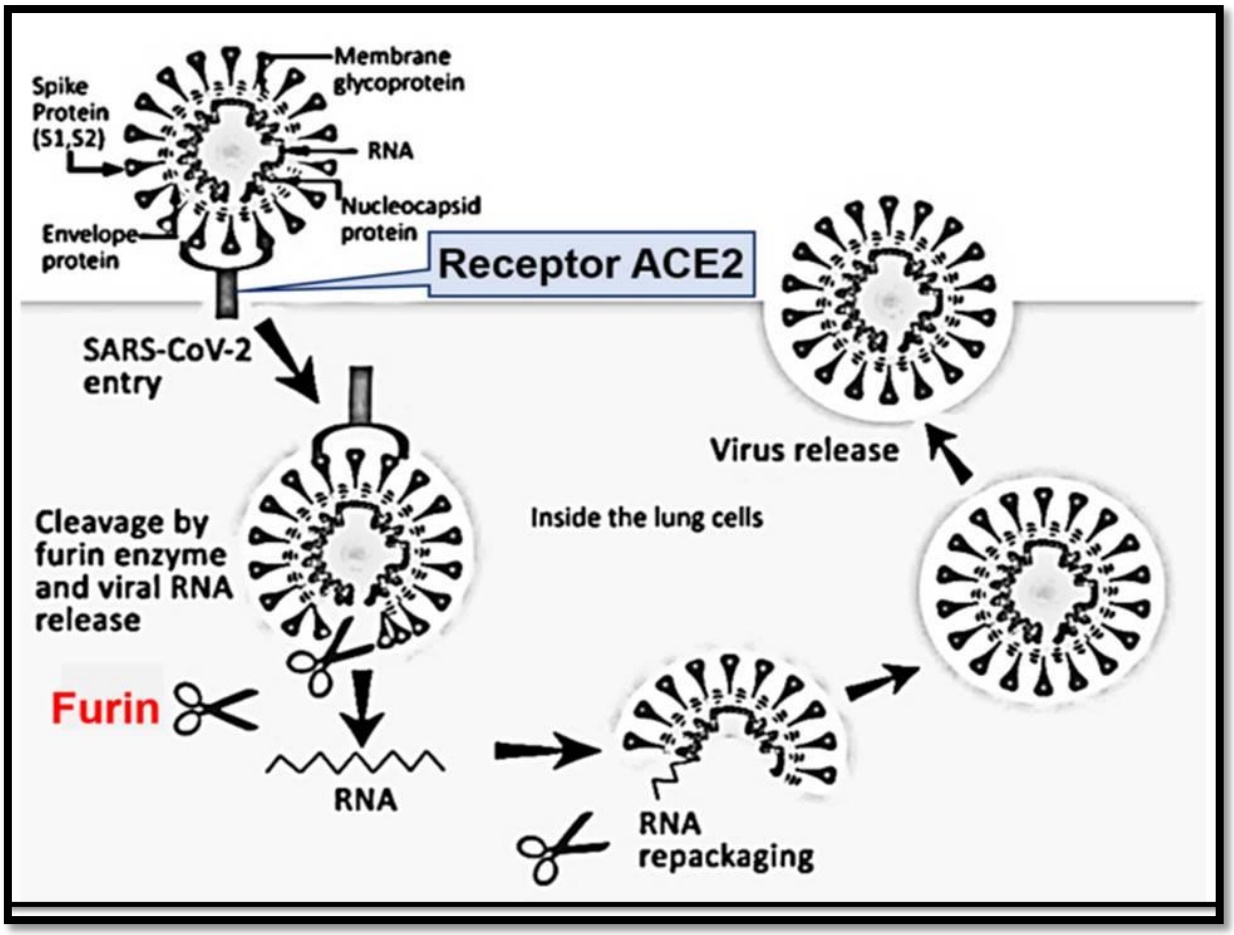


Figure 3: - Life cycle of Corona virus.

HISTORY:

Main basis of corona virus was notified in 1960. According to the Canadian review 2001, approximately 500 patients were identified as Flu-like system. 17-18 cases of them were infected with corona virus strain by polymerase shackle reaction. Corona was treated as clear cut non critical virus till 2002 (Di Lorenzo, G., & Di Trolio, R. 2020). In 2003, a choice of gossip available with the proofs of distribution the corona to a lot of countries such as United States America, Hong Kong, Singapore, Thailand, Vietnam and in Taiwan. Numerous casing of Simple acute respiratory syndrome caused by halo and their greatly new than 1000 uncomplaining was reported in 2003. This was the black day for microbiologist (Waris, A. *et al.*, 2020).

As microbiologist in progress focus to get it these problems. After a concentrated effect they conclude and recognize the pathos start of disease bare as corona virus. But till equal 8096 uncomplaining was established as infected with coronavirus. Subsequently in 2004, World Health Organisation and centres for disease management and prevention confirmed as "state emergency" (Lai, C. C. *et al.*, 2020). A different cases register of Hong Kong was long-established 50 tolerant of ruthless severe respiratory syndrome though 30 of them were complete as circle of light virus infected. In 2012, Saudi Arabian information was untaken numerous infected patient and deaths. COVID-19 was primary identified and isolated from pneumonia patent belongs to Wuhan, china (Singhal, T. 2020).

Huang *et al.*,. earliest reported clinical skin texture of 41 patients infected with COVID-19 on January 2, 2020, which involve 13 ICU and 28 non-ICU cases. More than partly of the cases(66%) had been exposed to the Huanan Seafood across-the-board Market. nearly altogether the patients had mutual lung pounded schooner cloudiness on computed tomography imaging. The opening symptoms built-in fever (98%), cough (76%), dyspnoea (55%), myalgia or low energy (44%), sputum assembly (28%), headache (8%), haemoptysis (5%), and diarrhoea (3%). simply one enduring did not current fever in the early podium of disease. Twelve (29%) personal belongings progressed to acute respiratory distress syndrome (ARDS), 5 (12%) had acute cardiac injury, 3 (7%) had acute kidney injury (AKI), and 3 (7%) had shock. At the figures bring to a halt date, 28 (68%) patients were discharged and 6 (15%) had died (Cascella, M *et al.*, 2020).

On January 20, 2020, Chen *et al.*,. reported 99 cases with SARS-CoV-2–infected pneumonia. This container string bare that elder males with

comorbidities as a consequence of weaker immune performance were on the whole susceptible to COVID-19 incidence. The symptoms, complications, and treatments in this cram were taken to the before available lessons by Huang and colleagues. At the records sever date, 31 (31%) were discharged and 11 (11%) died, and 57 (58%) of the patients were allay hospitalized. A revise of Li *et al.*,.reported on 425 COVID-19 cases in Wuhan inveterate between January 1 and 22, 2020. The miserable incubation phase was 5.2 days, with the 95th percentile of the spreading at 12.5 days, despite the fact that uncertainty ruins (Ahn, D. G. *et al.*, 2020).

ORIGIN:

The leading cases of coronaviruses in individual set up in 1965 by Tyrrell and Bynoe. They experimented that they may well passage a virus named B814. It was practical in individual emergent tracheal organ cultures obtained from the respiratory territory of an adult with a ordinary frozen symptom. The first case were seen in Wuhan metropolitan of Hubei realm China in December 2019, and encompass been associated to the Huanan Seafood Market (South China) and the infection has range to several countries around the world (Zu, Z. Y. *et al.*, 2020).

The novel coronavirus originated from the Hunan seafood market at Wuhan, South China everywhere raccoon dogs, bats, snakes, palm civets, and other animals are sold, and speedily distribution up to 109 countries. The zoonotic starting place of SARS-CoV-2 is not confirmed, however, the sequence-based analysis optional bats as the central reservoir. The recombination of gene was originate to be complex at spike glycoprotein which assorted SARS-CoV (CoVZXC21 or CoVZC45) with the RBD of any more Beta CoV, like this may possibly be the rationale for cross-species transmission and hasty infection (Boulos, M. N. K., & Geraghty, E. M. 2020).

The SARS-CoV-2 is a β-corona virus, which is enveloped non-segmented positive-sense DNA virus (subgenus sarbeco virus, Ortho corona virinae subfamily). Corona viruses (CoV) are at odds into four genera, plus α−/ β−/γ−/δ-CoV. α- and β-CoV are bright to infect mammals, while γ- and δ-CoV cultivate to infect birds. Previously, six CoVs tolerate been identified as human-susceptible virus, among which α-CoVs HCoV-229E and HCoV-NL63, and β-CoVs HCoV-HKU1 and HCoV-OC43 with gentle pathogenicity, foundation mild respiratory symptoms parallel to a customary cold, respectively (Li, R. *et al.*, 2020).

The other two recognized β-CoVs, SARS-CoV and MERS-CoVbe in front to rigorous and potentially deadly respiratory piece infections. It was found that the genome run of SARS-CoV-2 is 96.2% impossible to tell apart to a bat CoV RaTG13, where it shares 79.5% characteristics to SARS-CoV. Based on virus genome sequencing domino effect and evolutionary analysis, bat has been suspected as effortless multitude of virus origin and SARS- CoV-2 force be transmitted from bats by way of unfamiliar intermediate hosts to infect humans. It is clear in a jiffy that SARS-CoV-2 may perhaps manipulate angiotensin-converting enzyme 2 (ACE2), the equivalent receptor as SARS-CoV, to infect humans (Chinazzi, M. *et al.*, 2020).

In December 31, 2019, hospitals reported a cluster of cases with pneumonia of nameless cause in Wuhan, Hubei, China, attracting lofty interest nationally and worldwide. On January 1, 2020, Wuhan broadcast health powers that be shut up down the Huanan Seafood general Market, everywhere uncultivated and live animals were sold, correct to a assumed link up with the outbreak. On January 7, 2020, researchers in a hurry inaccessible a novel corona virus (SARS-CoV-2, moreover referred to as 2019-nCoV) from inveterate infected pneumonia patients. Real-time reverse dictation polymerase series rejoinder (RT-PCR) and next-generation sequencing were old to set apart it. On January 23, 2020, in the red to the overweight stream of natives during the Chinese pounce Festival, broadcast shipping was hovering in Wuhan and, eventually, in each and every one the cities in Hubei area to reduce the chance of virus transmission (Shereen, M. A. *et al.*, 2020).

In December 2019, an eruption of pneumonia of unknown cause in Wuhan, Hubei province, China led to the identification of a new beta corona virus, called severe acute respiratory syndrome corona virus 2 (SARS- CoV-2). SARS-CoV-2 is the seventh identified corona virus that is competent to infect humans. In calculation to inborn origin it shares up to 80% of the RNA succession with other members of corona virus family, such as difficult acute respiratory syndrome corona virus (SARS-CoV) and Middle East respiratory syndrome corona virus (MERS-CoV). The perception of SARS human-to- human transmission is at a halt evolving, but is at this time believed to happen through heavens droplets, though faecal oral apply and in the air transmission may be other sources of transmission (Zhu, N. *et al.*, 2020).

In a suddenly time, the kindly contagious virus has caused a pandemic, destabilizing health systems, economies, and governments around the world.SARS-CoV-2 infection be asymptomatic or be associated with the corona virus disease 2019 (COVID- 19), which has a spectrum of respiratory clinical manifestations ranging from fever, deadpan cough, and dyspnoea to pneumonia, pulmonary edema, acute respiratory distress syndrome, and numerous organ failures, requiring hospitalization in intensive think about detachment and chief to overthrow in ruthless cases.

Fewer communal symptoms consist of headache, haemoptysis, nausea, vomiting, and diarrhoea (Cascella, M. *et al.,* 2020). though at the start originate in a insignificant percentage of cases, an ever-increasing come to of patients show with diarrhea.9 Diarrhoea is a normal symptom in corona virus infections; it was detected in up to 30% of patients with MERS-CoV and 10.6% of patients with SARS-CoV. The objective of this reconsider is to investigate the journalism on the epidemiology, clinical symptoms, machinery of action, management, and prevention of COVID-19- associated diarrhea to enhance exemplify this symptom and to recognize any precautionary dealings for patients exposed to virus (Jin, Y. *et al.,* 2020).

Severe acute respiratory syndrome coronavirus-2 (SARS- CoV-2) is the causal agent of corona virus disease 2019 (COVID-19), which was acknowledged a macro endemic by the World Health Organisation (WHO) on 11th March 2020. SARS-CoV-2 December 2019 in Wuhan City, Hubei Province, China. The source of the virus is unknown, but initially, newly diagnosed bags were allied to the Huanan Seafood across-the-board promote someplace folks bottle believe blustery animals, such as bats. SARS-CoV-2, a novel enveloped gene beta corona virus, has phylogenetic similarity to severe acute respiratory syndrome corona virus and Middle East respiratory syndrome corona virus (Caly, L. *et al.,* 2020).

GLOBALLY SCENARIO:

The first basis of 2019-nCoV was reported outside China was from Thailand on 13th January 2020, followed by Japan on 16th January and South Korea on 19th January 2020. Completely these three cases were exported from Wuhan city, China. Up to January 20, 2020, simply four cases were creating outside of China, i.e. Thailand, Japan and the democracy of Korea and they were exported from Wuhan City, China. After that day one supplementary situation was initiate in the United States of America (Xu, J. *et al.,* 2020). On 24th January 2020, eleven cases were confirmed in six countries outside of China, which includes Singapore and Vietnam, and out of eleven cases, 10 had a history of Wuhan city. The left over occurrence is not travelled to China but he was the family constituent of an additional confirmed case, who had visited the Wuhan. It confirmed the human-human transmission of the virus. On 25th January 2020, an added twelve new belongings were reported from the unfilled six countries all along with a new 3 new countries Australia, Nepal, and France (Wang, P. *et al.,* 2020).

In a absolute of 23 confirmed cases, 21 cases had a history of pass through to Wuhan city. On the after that day, the confirmed cases greater than before to 29 with the inclusion of Malaysia. 27th January one justification from Canada and 28th January it augmented to 2 and each one from Cambodia, Sri Lanka, and Germany were reported. On 29.01.2020 the United Arab Emirates announced four cases were confirmed with 2019-nCoV, and each and every one are itinerant from Wuhan City. after that day Finland, India, and the Philippines were announced both one confirmed instance and every one 3 cases are having tour history of Wuhan. 31st January 2020, 2 new cases were reported by Italy and in cooperation the cases were travelled to Wuhan. Pronto the add up to no. of confirmed cases was increased to 106 from 19 countries. At that time China had 9720 confirmed cases with 213 deaths (Uddin, M. *et al.,* 2020).

All the figures are adopted from WHO site and data are till date of 03.07.2020.

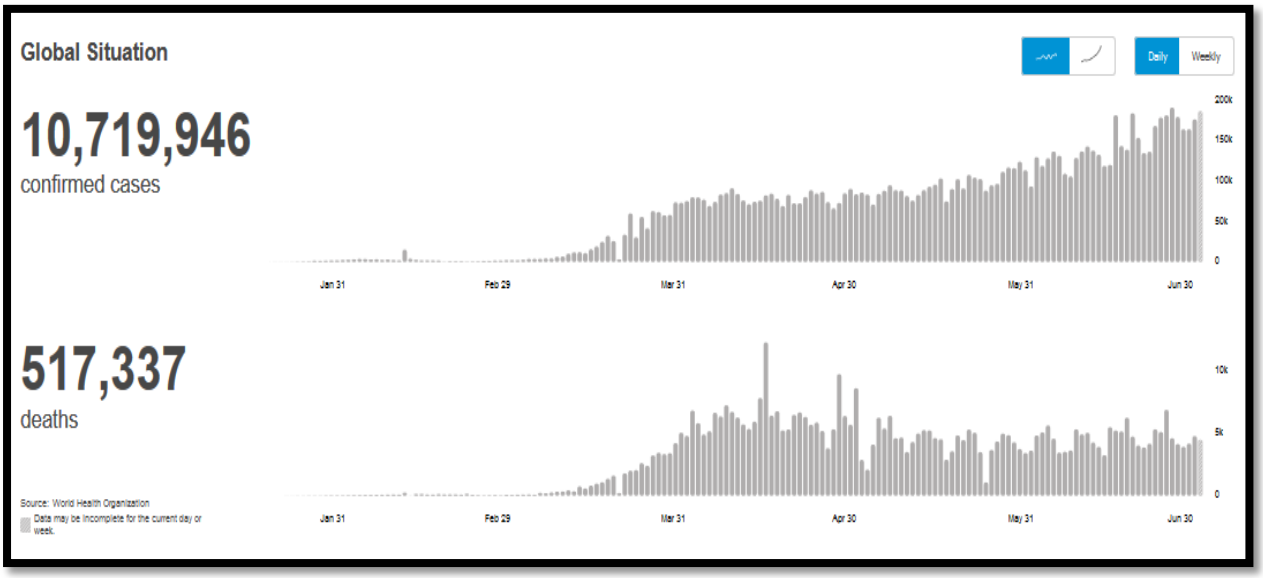


Figure 4: - Global Situation of Corona Virus *(Source- WHO)*

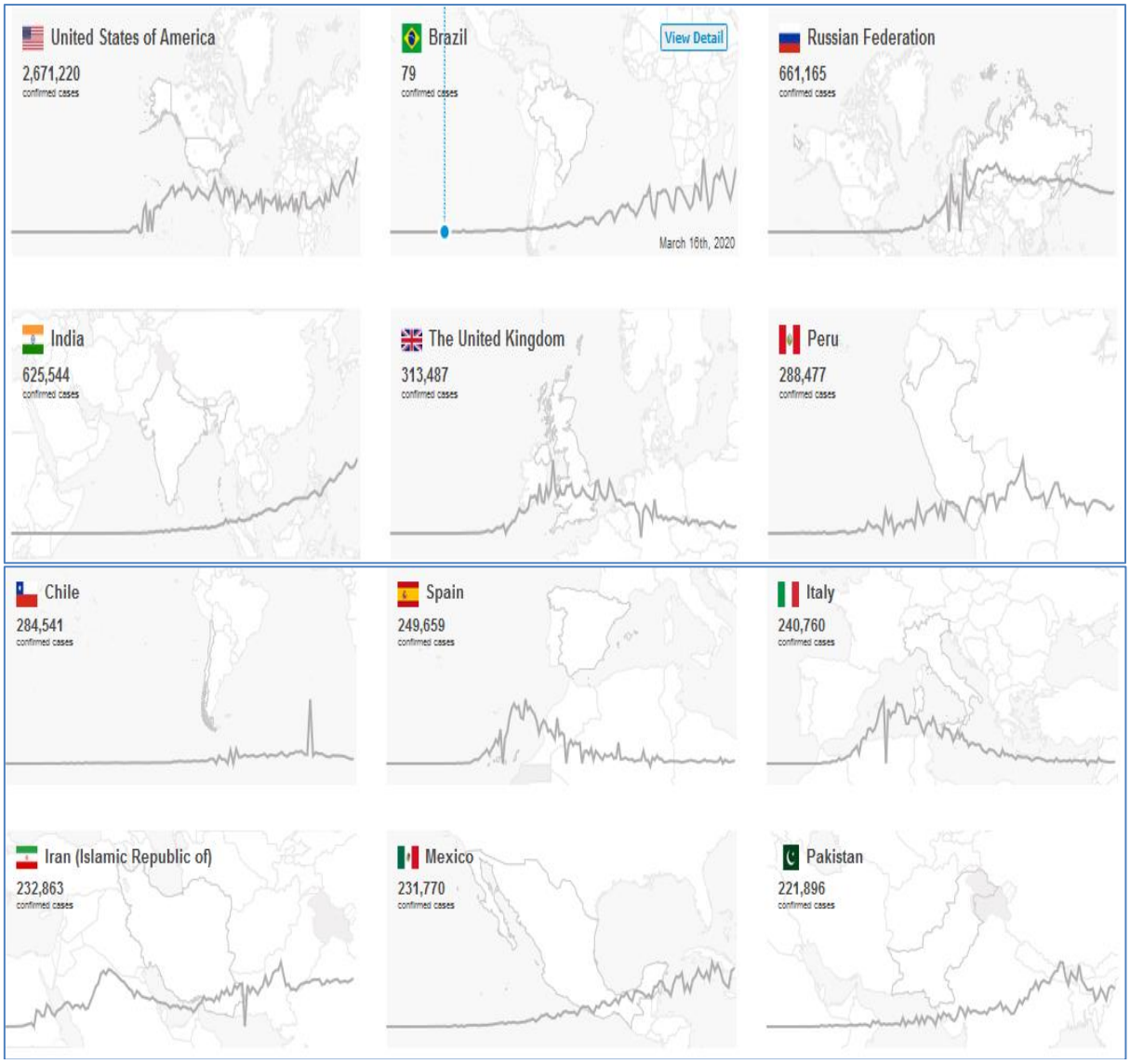
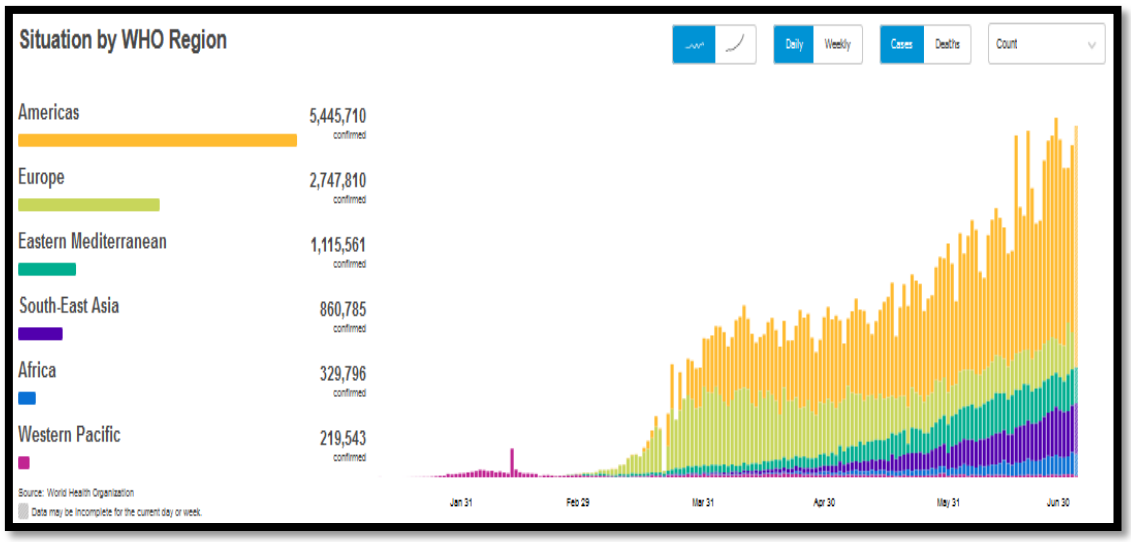


Figure 5: - No. of patient in different Countries affected by Corona virus *(Source- WHO)*



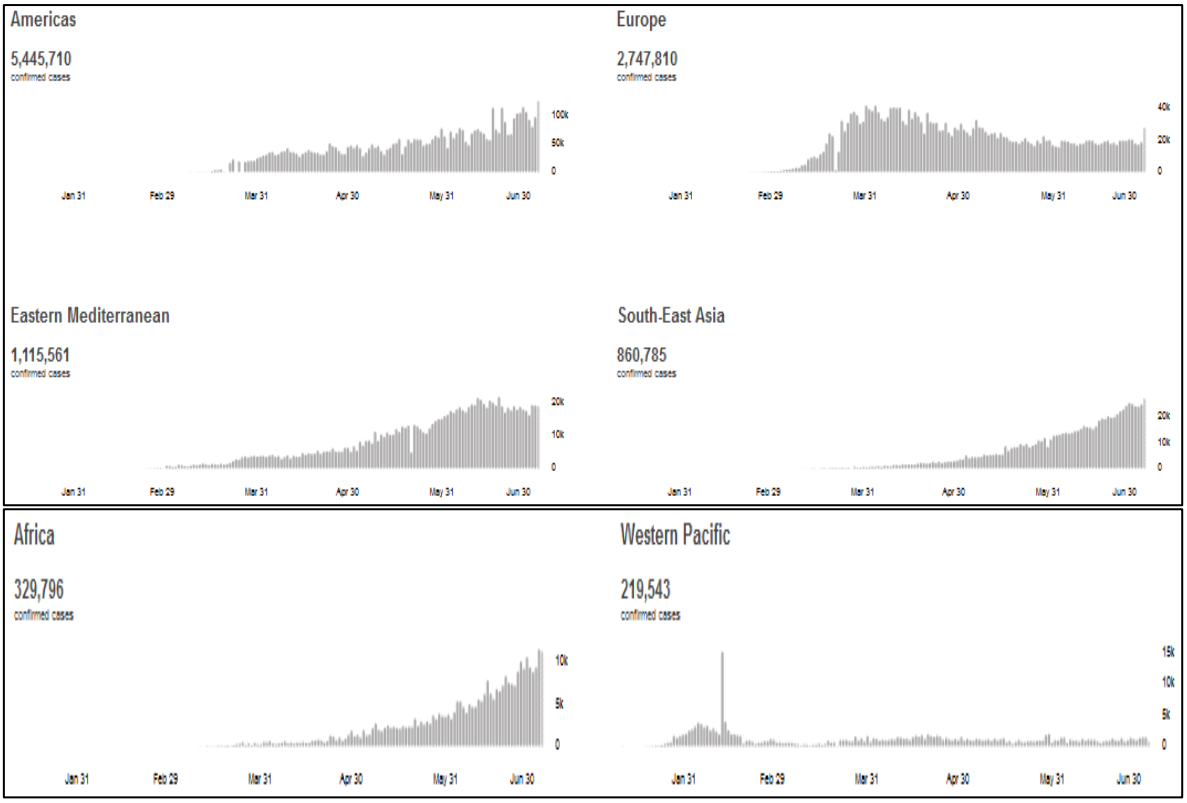


Figure 6: - Corona virus situation according to the WHO region *(Source- WHO)*

February 1st, 6 cases were reported from four new countries, Russian confederation, Sweden, Spain, and the United Kingdom. But for the first time outside China, the healthcare hand was infected with this virus and trip over are not well in France. He treated the two patients in previously stages and later, they befit probable cases. The third-generation transmission of human-human and experimental the first time outside China. A new assignment was identified in Germany who is exposed to a confirmed case. So therefore enduring identified in South Korea confirmed the export of the instance from a country other than China (Sanders, J. M. *et al.,* 2020). He had exposure to circumstances in Japan and so therefore he travelled to South Korea and befits confirmed cases there. In Japan, too a analogous key of an added country individual to creature transmissions were reported for a tourist guide, who guided the tourists of Wuhan and every these confirmed the presence of virus from human being to human being transmission in other countries (Sun, J. *et al.,* 2020).

A taxi driver from Thailand besides reported on that day but he was in no way travelled to any measurement of China. After that 3 days, at hand were no newer countries with confirmed cases, but the first bereavement of inveterate case outside China was reported on 2nd February 2020 in the Philippines, who had within walking distance connection with the first confirmed serene of the Philippines. On 5th February 2020, Belgium confirmed the first basis of 2019-nCoV. The subsequently four living no other countries were further to make an inventory but 106 new cases were reported in the unfilled 24 countries and Cruise distribute equilateral Princes (Chow, K. Y. C. *et al.,* 2003).

That cruise ship was instantly harboured at the Yokohama docks of Japan. It was initiate that the crew and passengers of rhombus princes transport and infected with 2019-nCoV on 6th February (20 Passengers). The after that day it was augmented to 61 and so therefore 64 passengers. Completely the infected passengers were admitted to the hospitals of the Yokohama corner and the lingering crew and passengers are advised for a quarantine point of 14 being in their cabins. Entirely the infected passengers were admitted to the hospitals of the Yokohama corner and the left behind crew and passengers are advised for a quarantine epoch of 14 existences in their cabins. Consequently as on 9th February, nearby are 307 confirmed cases with one overthrow in completely 24 pretentious countries and one cruise craft WHO. No of come to infected patients in every part of the 24 Countries (Singhal, T. 2020).

China scenario:

Three adult patients with worsened pneumonia were admitted to a Wuhan hospital, China, on27th Dec 2019. In this, two of them came at an earlier time on 20th and 23rd Dec for cough and fever. Subsequently on Dec 30th cluster of pneumonia patients in Wuhan City, Hubei region of China, was reported and it alerts WHO on 31st Dec. The causes of pneumonia were

strange and a large amount of them correlated to the Huanan seafood blanket market. The Gov. bunged the bazaar on New day and one week later, on 7 January 2020, Chinese powers that be confirmed that they had identified a novel (new) corona virus as the bring about of pneumonia (Sanders, J. M. *et al.,* 2020).

On January 20th, the No, of hand cases reported with 2019-nCoV was 278 with 6 deaths and health control staff who are intriguing worry of this 2019-nCoV patients besides precious with this virus and the first set of circumstances was reported. Day by day the no of cases was enlarged drastically. In the after that five days, the No. of personal belongings was bigger to 1297 and 41 deaths. On January month-end, the no. of confirmed bags was greater than before in 9720, with 213 deaths. 1stFebruary, it crossed 11820 and on the 4th of February, it crossed 20470 (Sohrabi, C. et al 2020).

At that time from the 1st February, onwards the No. of newly admitted cases was amplified to approximately 3000 for each day. As of 5thFebruary, the overall No. of cases crossed 24500 and 8th February. It crossed 34500. Contained by that a short time ago four times 10044 new cases were reported to the hospital. It seems the severity of the scattering of the virus. On 9th February, the full amount no. of hand cases reported in China was 37251 with 812 deaths (Zhang, L., & Liu, Y. 2020).

A good number of the patients from Hubei state (27100 confirmed cases 2019-nCoV) followed by Guangdong (1120), Zhejiang (1075) and Henan (1033). The far-reaching intensification fee of 2019-nCoV confirmed cases and killing was graphically (Yang, J. *et al.,* 2020).

Italy scenario:

Until March 28, 2020, in presence were~90,000 inveterate cases of corona virus disease (COVID-19) in Italy, with 26,000 in-patients, 3,800 patients in intensive care units (ICUs), 40,000 clear-cut in family isolation, and 10,000 deaths, according to the Italian Civil safety bulletin (Jiang, F. *et al.,* 2020).

Italy at this time has the peak COVID-19 mortality scale worldwide, unchanging compared to the People's nation of China somewhere the digit of COVID-19 deaths totalled over 3,000 cases, counting capability re-infections. Globally, in presence are ~570,000 bags and 26,000 deaths as it should be to COVID-19. According to the World Health Organisation (WHO) as of March 28, 2020, the amount of COVID-19 helpful hand cases in Spain is increasing, with 64,000 infected cases and 5,000 deaths (Salehi, S. *et al.,* 2020).

In the United States, in the span of a small number of days, in attendance were 85,000 cases and 1,200 deaths correct to COVID-19; Germany has 48,000 fixed cases, and France has 32,000 cases with 600 deaths. After a terse adjournment with 9,000 COVID-19 cases and just 140 deaths, the infection has resurged and the quantity of established cases are endlessly greater than ever in South Korea (Yao, T. T. *et al.,* 2020).

An examination of the numbers in the day after day updates communicated by the Civil Protection, showed that nearly every one of the COVID-19 cases and deaths are inadequate to Northern Italy especially Lombardy, Emilia Romagna, Veneto, and Piedmont with the facts happily decreasing toward focal and southern Italy, and extremely a small amount of case predictable in Basilicata. nearly everyone harshly pretentious regions and the regions everyplace healthcare air force exhibit at all times been careful excellent; the hospitals of Lombardy and Veneto are the Italian centres of quality with connect with to touchstone protocols and management for numerous diseases, principally neoplastic conditions, and nearby was a lofty charge of passive migration of patients from the South to northern hospitals (Ye, Z. *et al.,* 2020).

The Lombardy section has a senior come to of intensive nurture and recovery beds compared to southern Italy; unfortunately, these sitting room are immediately operation out of sanatorium beds and facing challenges in the provision of leading forethought for environment other than COVID-19, necessitating the removal of copious patients to other regions. The site would most likely cover been significantly inferior if the regions of Southern Italy had the record come to of COVID-19 cases. This information approves the reality that we are facing a pandemic, which was affirmed by the WHO a hardly any being ago (Badawi, A., & Ryoo, S. G. 2016).

Indian scenario:

Approximately fifty thousand Indians are livelihood in China and many of them are students studying medicine there. Some time ago the predicament aroused Govt of India considered to vacate the Indians having difficulties on the Wuhan. On January 30th, the first case of 2019-nCoV was reported from Kerala, India, who is the student at Wuhan and returned to India. He was admitted to Thrissur universal Hospital. Two favour India flights were approved to China to move out of the Indians and they brought around 650 populations from here on 31st January and 1st February 2020 (Wang, L. S. *et al.,* 2020). Every single one the passengers were screened and kept back as quarantine. The second case was reported on 2nd February, who is a scholar of the college of Wuhan, admitted at Alappuzha medicinal school hospital. The third problem was reported on the after that day who is additionally a health check learner and right now admitted Kanjangad neighbourhood infirmary in Kasaragod, Kerala.

Accordingly far, a c India reported its originator laboratory-confirmed legal action on January 30, 2020, from Kerala. Since, followed by dispersed information has been available indicating role of valproic acid Co-A and Vitamin B12 to handle COVID-19 patients by inhibiting nsP12 of SARS-CoV-2. India is a heavily populated country, as follows at a danger of high point super-spreading probability. The Indian Government's Empowered agency for COVID-19 reply directed focal and circumstances governments, as okay as classified and management sectors to cooperate with general laboratories to operate together, and urged to overcome any not have of collaboration to scrap against COVID-19.

(Adhikari, S. P. *et al.*, 2020). Complete of 3 cases was reported and altogether from Kerala state (Knight, M. *et al.*,2020)

STATE NAME:	TOTAL CONFIRMED:	CURED/ DISCHARGED/ MIGRATED:	DEATH:
Andaman and Nicobar	109	51	0
Andhra Pradesh	16097	7313	198
Arunachal Pradesh	195	66	1
Assam	9013	6106	12
Bihar	10471	8020	77
Chandigarh	450	389	6
Chhattisgarh	3013	2385	14
Dadra and Nagar Haveli	230	89	0
Dadra and Nagar Haveli	230	89	0
Delhi	92175	63007	2864
Goa	1482	734	4
Gujarat	33913	24593	1886
Haryana	15509	11019	251
Himachal Pradesh	1014	628	10
Jammu and Kashmir	7849	4974	115
Jharkhand	2584	1983	15
Karnataka	18016	8334	272
Kerala	4753	2640	25
Ladakh	990	730	1
Lakshadweep	0	0	0
Maharashtra	186626	101172	8178
Manipur	1279	617	0
Meghalaya	56	42	1
Mizoram	162	126	0
Madhya Pradesh	14106	10815	589
Nagaland	501	182	0
Punjab	5784	4144	152
Rajasthan	18662	14948	430
Sikkim	102	53	0
Tamil Nadu	98392	56021	1321
Telengana	18570	9069	275
Tripura	1435	1146	1
Uttar Pradesh	24825	17221	735
Uttarakhand	2984	2405	42
West Bengal	19819	13037	699

Figure 7: - Total no. of patient, discharge patient and death in different States affected by Corona virus *(Source- WHO)*

The Indian council of medical research (ICMR) revised (Version 3) its strategy on March 20, 2020, for COVID-19 hard in India. "Current testing strategy includes every indicative persons with global history for past 14 days; every single one indicative contacts of laboratory fixed cases all indicative healthcare workers; the entire hospitalized patients with Severe Acute Respiratory Illness (fever and cough and/or dumpiness of breath); and asymptomatic open and high ranking risk-contacts of a cases previously

between living 5 and 14 after approaching in dealings with an infected person. Recently reported the wear out of a non-invasive induced sputum" method for SARS-CoV-2 DNA detection as a substitute of throat swabs in recuperative patients. This logic may be utilized to assess COVID-19 patients to slash the attempt of disease divide in the near expectations (Viner, R. M. *et al.,* 2020).

The basic occurrence of COVID19 in India was reported on 30 January 2020 originating from China. As of 26th March, the Indian council of medical research and ministry of family have confirmed a complete of 649 cases (subjected to alteration in scheduled course), 42 recoveries, 1 migration and 13 deaths in the country. The infection rate of COVID-19 in India is reported to be 1.7, which is remarkably than in the most terrible affected countries. The occurrence has been confirmed as an epidemic in new than a dozen states and Union Territories, somewhere provision of the epidemic Diseases Act,1897 comprise been invoked, and educational institutions and lots of commercial establishments control has been lock down. India has suspended the entire tourist visas, as a widely held of cases were coupled in to other countries. The Govt. has as well issued lockdown of 75 districts across the country everyplace confirmed cases of COVID-19 have been reported till 31 March (Pang, J. *et al.*, 2020).

In the large amount expected (Medium) scenario with moderate to broad observance but no transform in virulence or temperature/humidity sensitivity, the figures of amount to belongings preserve enhance up to a small number of lakhs. The optimistic (low) scenario constitutes decreased virulence and temperature/humidity sensitivity (Sahin, A. R. *et al.,* 2020).

To attain these numbers, Johns Hopkins and CDDEP a in the public domain health seek organisation old India SIM, a well-validated agent-based model of the Indian population, which has been available commonly over lots of days and has been second-hand for authority decision making. According to the report, hospitalised gear preserve spread up to 25 lakh make somewhere your home in the excessive scenario, 17-18 lakh colonize in standard scenario and 13 lakh frequent in short scenario.

In I'm sorry? might time absolutely nuisance for the country in the subsequently three months, a new convey from esteemed Johns Hopkins university and the Centre for Disease Dynamics, Economics & Policy (CDDEP) has predicted that 21-day lockdown may be ineffective to finish the COVID-19 greatest incoming in April-May-June -- infecting not many lakhs Indians in an optimistic (low) scenario. Dr. Ramanan Laxminarayan, director of the US-based Centre for Disease Dynamics, Economics and Policy, and an advisor to the World Health Organisation (WHO) and world Bank, had until that time warned in India that In a worst-case scenario, India would expertise a novel corona virus infection rate, which would get the drift approximately margin of incorrigible cases of COVID-19 across the country, public health experts estimates (Cheng, M. P. *et al.,* 2020).

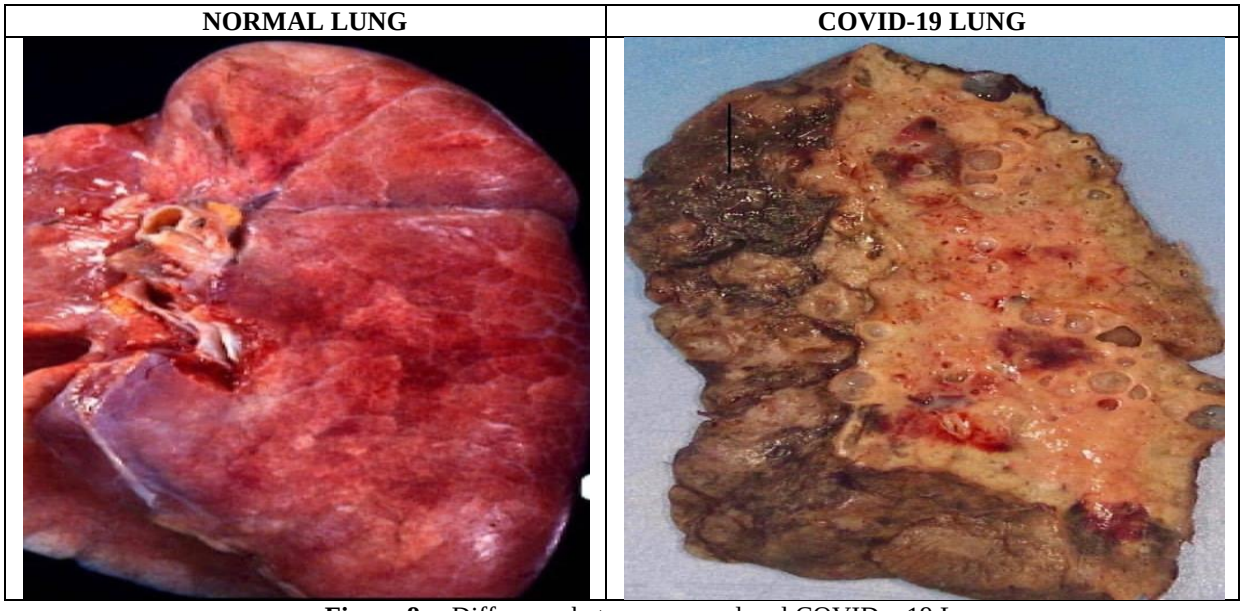


Figure 8: - Difference between normal and COVID – 19 Lungs.

India that In a worst-case scenario, India would be subjected to a novel corona virus high-pitched infection rate, which would guarantee approximately best part of definite personal belongings of COVID-19 across the country, important freely available health professional estimates. India's jam-packed cities and brutally

crowded shared convey besides throws a rare challenge to communal distancing, which is compulsory to reduce the extent of novel corona virus (Alfaraj, S. H. *et al.*, 2019). Now, in view of the operative enforcement of lockdown actions and countrywide curfews that were freshly enforced by the Indian government, that worst-case run to will not be self-same high. Furthermore, an overwhelming preponderance of these infections is expected to be awfully mild. In argument if a summit integer of persons becomes ill, with a small amount of lakes requiring intensive medicinal care would put an immense strain on India's healthcare system (Momattin, H. *et al.*, 2013).

In a worst-case scenario, estimation is based on how catching the novel corona virus would be in India. If citizens fail to follow the community distancing, the virus would be as catching as it has been in USA, Italy, Spain, UK, Germany, France, Iran and China which will in effect cart the worst-case records to elevated side. There is no necessity to scuttle for need of testing if you own a cold or cough or fever or respiratory distress and it persist after about four existence in that case you be supposed to catch manually tested. If anyone is quarantined at your house, next breather of the family members must have an effect common sensual precautions but this does not stand for that they cannot penetrate the premises to dish up eatables. They know how to really administer the tray over more willingly than have the result that it two feet away. You preserve apparatus by such a qualities or their clothes and there is no need to grind gloves but your duty tint your hand. There is no question no controlled centre for believing drinking gaumutra and delightful goober baths might stop the Corona virus infection (Shapiro, M. *et al.*, 2016).

Pakistan scenario:

The COVID-19 rash was treated as a legal action of pneumonia with nameless aetiology appeared in the Wuhan conurbation of China, at the conclusion of December 2019, which smooth out across the country to worldwide with a prohibitive ratio counting Pakistan. In Pakistan, the initially crate of COVID-19 has been fixed by the Ministry of Health, leadership of Pakistan on February 26, 2020 in Karachi, Sindh province (Cook, T. M. 2020).

On the identical day a further issue incorrigible by the Pakistan Federal Ministry of Health in Islamabad .in fifteen days, the amount of complete definite cases (COVID-19 Positive) reached to twenty(20) out of 471 so-called cases with record records in the Sindh state followed by the Gilgit Baltistan. Entire of the complete cases had topical take a trip history from Iran, Syria and London. And now these belongings soar by high ranking time and the condition is most evil .The geographical scene of Pakistan, with the incessant increases in the digit of CVOID-19 certain cases requisite a anticyclone even of action, planes and management (Seah, I., & Agrawal, R. 2020; Borges do Nascimento, I. J. *et al.*, 2020; Guy, J. S. 2000; & Ramadan, N., & Shaib, H. 2019).

On 12th of February, the ministry of nationalized Health Services, directive & Coordination Pakistan untaken a flat "National Action idea for vigilance & rejoinder to Corona Virus Disease (COVID-19) Pakistan", the aims to discipline the diffusion of virus and to strengthen country and kinship tragedy attentiveness is sort out to guarantee a timely, good at your job and effectual rejoinder to likely dealings suitable to COVID-19 including. The local, regional and nationalized outbreaks that container grasp a momentous impression on the health of Pakistani inhabitants and the population (Yang, Y., *et al.*, 2020).

To date, discrete steps maintain been full by the leadership of Pakistan against COVID-19 outbreak. In this review, we highlighted the a typical steps full by the authority of Pakistan against COVID-19, such as designated hospitals, quarantine centres, tough facilities, treatments, communal awareness and the reply of area the people against COVID-19 outbreak (Nicola, M. *et al.*, 2020).

According to the office of Health, management of Pakistan, there are 3277 inveterate certain personal cases in the country with 18 important and 50 mortalities on Monday, April 6, 2020. The record case appeared in the Punjab prefecture (1493) followed by Sindh (881), Khyber Pakhtunkhwa (405), Balochistan (191), Gilgitbaltistan (210), centralized (82) and Azad Jammu & Kashmir possess 15 fixed cases. To date, the main add up to of mortalities occurred in Khyber pakhtunkhwa with 16, followed by Punjab (15), Sindh (15), GilgitBaltistan (3), Balochistan (1). A overall of 85 infected individuals take been improved in Sindh province, followed by KP (30), Balochitsan (17), and Punjab (25) GB (9) and AJK partake of one recovery till meeting as summarized in record. The mortality appraise in Pakistan is 1.3% and recovery scale is 4.8% (Nicola, M. *et al.*, 2020).

The COVID-19 coursed by SARS-CoV-2 in the Wuhan metropolitan of China which speedily increase in 208 countries/regions plus USA, UK, Italy, Spain and Pakistan. The recent scenario of Pakistan is not satisfactory as Pakistan is a large amount populated country somewhere obligatory other facilitation. Pakistan is a emergent country someplace the economic place is not improve as compared to China, USA, UK, Russia to combat with COVID-19 outbreak. The numeral of hospitals and quarantine conveniences life form not fulfilled as required (Sharif, S. *et al.*, 2010).

If these medicinal amenities improved, after that it will not be tricky to direction the transmission of viruses and management of patients. at present the hard amenities are greatly reduce than the obligatory target.

The hard amenities may well encourage by five to ten (5to 10) folds. The redress steps are supposed to be full to power the spot additional most awful such as staying at homes, lockdown, party distancing, via sanitizers, look mask while necessary (Luo, H. *et al.,* 2020). Pakistan requirements additional program conveniences for the arrivals as clearly as for the departures. It is hoped that Pakistan will assail the COVID-19 (McCreary, E. K., & Pogue, J. M. 2020, April).

TREATMENTS:

To date, there is no anti-viral therapeutics that is specifically for corona virus; as a result treatments are merely supportive. In vitro, interferon's (IFNs) are lone partially operative against coronaviruses. IFNs in combination with ribavirin may be inflicted with greater than before activity in vitro while compared to IFNs by yourself against some coronaviruses; however, the effectiveness of this combination in vivo requires auxiliary evaluation [coronavirus] The SARS and MERS outbreaks declare stimulated inquiries on these viruses and this examination has identified a great digit of appropriate anti-viral targets, such as viral proteases, polymerases, and item proteins. Significant masterpiece remains, however, to fill in drugs that aim these processes and are gifted to inhibit viral replication (Lou, J. *et al.,* 2020).

A number of hard works to expand vaccines are underway, but the WHO estimates it will take 18 months for the COVID-19 vaccines to be available. At present, largely healing is symptomatic and supportive, despite the fact that anti-inflammatory and antiviral treatments obtain been employed. Accommodating care for complicated patients has built-in constant renal replacement therapy (CRRT), insidious mechanical ventilation, and even extracorporeal casing oxygenation (ECMO). No specific antiviral drugs obtain effective (Omrani, A. S. *et al.,* 2015).

The first reported enduring with 2019-nCoV infection in the USA was treated with remdesivir, 13 and others allow old antiretro virals like ritonavir, with trials of equally in progress. A fresh cram conducted by the "front-line" health trouble providers skirmishing COVID-19 in Wuhan indicated that systemic corticosteroid remedy did not reveal major benefit. Baricitinib has not been compulsory as a budding drug for the care in the expectation that it force slash the course of action of in cooperation virus invasion and irritation (Xie, M., & Chen, Q. 2020).

Treatments Similar to MERS-CoV and SARS-CoV, at hand is motionless no precise antiviral care for COVID-19. Isolation and loyal care together with oxygen therapy, fluid management, and antibiotics cure for lesser bacterial infections is optional. Some COVID-19 patients progressed fast to ARDS and gangrenous shock, which was in the end followed by several organ breakdowns. Therefore, the stab on early management of COVID-19 obligation be addressed to the experimental detection of the conjecture and have the disease smooth out by close isolation and infection command measures (Hassan, S. A. *et al.,* 2020).

Currently, no vaccine is available, but if one was available, uptake capacity is suboptimal. A lessons of plan to inoculate during the H1N1 deadly disease in the United States was around 50% at the get going of the deadly disease in May 2009 but had decreased to 16% by January 2010. Neither is a healing available. Therefore, the management of the disease has been customarily compassionate referring to the disease severity which has been introduced by WHO. If sepsis is identified, empiric antibiotic must be administered based on clinical diagnosis and neighbouring epidemiology and propensity information (Guo, Y. R. *et al.,* 2020).

Routine glucocorticoids management are not compulsory to avail yourself of if not nearby are an extra clue. Clinical support and does not foundation corticosteroid medicine. Utilization of intravenous immunoglobulin force is of assistance for harshly laid up patients. Drugs are heart evaluated in reinforce with historical investigations into therapeutic treatments for SARS and MERS (Rawson, T. M. *et al.,* 2020).

Overall, there is not robust indication that these antiviral bottle notably build up clinical outcomes. Antiviral drugs such as oseltamivir joint with empirical antibiotic handling allow as well been old to deal with COVID- 19 patients. Remdesivir which was urban for Ebola virus, has been old to nurse imported COVID-19 personal belongings in US. A short report of care pattern of Lopinavir/ Ritonavir, Arbidol, and Shufeng Jiedu pod (SFJDC), an accepted Chinese medicine, showed a clinical promote to three of four COVID-19 patients (Karimi-Zarchi, M. *et al.,* 2020).

There is an ongoing clinical tribulation evaluating the security and value of lopinavir-ritonavir and interferon- 2b in patients with COVID- 19. Ramsedivir, a broad spectrum antivirus has demonstrated in vitro and in vivo efficiency against SARS-CoV-2 and has too initiated its clinical hardship. In addition, other possible drugs from existing antiviral agent maintain furthermore been anti cipated medication currently, nearby are no specific treatments open for the 2019-nCoV infection (Hasan, A. *et al.,* 2020).

Some Of the Ongoing Treatments:

Management of hypoxemic respiratory failure and ARDS recognize severe hypoxemic respiratory failure when a patient with respiratory distress is failing standard oxygen therapy. Patients may continue to have increased work of breathing or hypoxemia even when oxygen is delivered via a face mask with reservoir bag

(flow rates of 10-15 L/min, which is typically the minimum flow required to maintain bag inflation; FiO2 0.60-0.95). Hypoxemic respiratory failure in ARDS commonly results from intrapulmonary ventilation-perfusion mismatch or shunt and usually requires mechanical ventilation (Di Mascio, D. *et al.,* 2020).

Prophylaxis:

The National Task Force for COVID-19 constituted by Indian Council of Medical Research recommends the use of hydroxyl chloro quine for prophylaxis of SARS-CoV-2 infection for high risk population. The Advisory provides for placing the following high risk population under chemoprophylaxis with hydroxyl chloro quine (Nicola, M. *et al.,* 2020);

- Asymptomatic healthcare workers involved in the care of suspected or confirmed cases of COVID – 19.
- Asymptomatic household contacts of laboratory confirmed cases.

Role of anti-viral: -

In presence there is no evidence of specific treatment for suspected or confirmed patients with COVID - 19. No antivirals are recommended for remedy of COVID – 19 due to prerequisite of all right rally from literature. The help of Lopinavir/ Ritonavir in PEP regimens for HIV (4 weeks) is and associated with extensive adverse actions which plentiful a phase leads to discontinuation of therapy. In delicate of the above, Lopinavir/Ritonavir duty merely is with neat informed oral consent on a container to casing foundation for brutal cases (Sikkema, R. S. *et al.,* 2019).

Administration of Lopinavir/ Ritonavir to be considered in Laboratory confirmed cases of COVID – 19 when the following criteria are met: Symptomatic patients with any of the following:
i. Hypoxia
ii. Hypotension
iii. New onset organ dysfunction (one or more)

Dosage: -
Lopinavir/ Ritonavir (200 mg/ 50 mg) – 2 tablets twice daily. For patients unable to take medications by mouth: Lopinavir 400mg/ Ritonavir 100 mg – 5ml suspension twice daily for 14 days or for 7 days after becoming asymptomatic

Possible role of remdesivir: - Remdesivir is a novel antiviral drug in the class of nucleotide analogs. It was developed for use against Ebola virus disease and Marburg viral infections.

MYTHS AND FACTS:

Table 2: - Myths and facts related to corona virus

S. No.	Myths	Facts	Reference
1.	Are there any specific medicines to treat or prevent the new corona virus?	To date, there is no specific medicine recommended to treat or prevent the new corona virus (2019-ncov). (However, those infected with the virus should receive appropriate to relieve and treat symptoms, and those with severe illness should receive optimized supportive care. Some specific treatments are under investigation, and will be tested through clinical trials. WHO is helping to accelerate research and development efforts with a range of partners)	(Raptis, C. A. *et al.,* 2020)
2.	Do vaccines against pneumonia protect you against the new corona virus?	No vaccines against pneumonia, such as pneumococcal vaccine and homophiles influenza type B (Hib) vaccine, do not provide protection against the new corona virus (The virus is so new and different that it needs its own new vaccine Researches are trying to develop a new vaccine against 2019-nov, and WHO is supporting their efforts).	(Panahi, L. *et al.,* 2020)
3.	UV radiation can cause skin irritation and damage your eyes	UV lamps should not be used to disinfect hands or other areas of your skin (Cleaning your hands with alcohol based hand rub or washing your hands with soap and water are the most effective ways to remove the virus)	(Chatterjee, P. *et al.,* 2020)
4.	Are hand dryers effective in killing the new corona virus?	No Hand dryers are not effective in killing the 2019 nCoV. (To protect against the new corona virus you should	(Al-Tawfiq, J. A., & Gautret, P. 2019)

		frequently clean your hands with an alcohol based hand rub or wash them with soap and water. Once your hands are cleaned you should dry them thoroughly by using paper towels or a warm air dryer).	
5.	The new corona virus can't be transmitted through mosquito bites	To date there has been no information or evidence to suggest that the new corona virus could be transmitted by mosquito. (The new corona virus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose. To protect yourself, clean your hands frequently with an alcohol based hand rub or wash them with soap and water. Also, avoid close contact with anyone who is coughing and sneezing).	(Luo, H. *et al.*, 2020)
6.	Taking a hot water bath will not prevent you from catching COVID-19.	Taking a hot water bath does not prevent you from the new corona virus disease (Your normal body temperature remains around 36.5°c to 37°c regardless of the temperature of your bath or shower. Actually taking a hot bath with extreme hot water can be harmful As it can burn you.) The best way to protect yourself against COVID-19 is by frequently cleaning your hands. By doing this you eliminate viruses that may be on your hands and avoid infection that could occur by then touching your eyes, mouth, and nose.	(Al-Tawfiq, J. A., & Auwaerter, P. G. 2019)
7.	COVID-19 can be transmitted in areas with hot and humid climates	The COVID-19 Virus can be transmitted in any climate, including areas with hot hot and humid weather. (The best way to protect yourself against COVID-19 is by maintaining physical distance of at least 1 metre from others and frequently cleaning your hands. By doing this you eliminate viruses that may be on your hands and avoid infection that could occur by then touching your eyes, mouth, and nose).	(Wang, H. J. *et al.*, 2020)
8.	Exposing yourself to the sun or two temperatures higher than 25 C degrees does not prevent for cure COVID-19.	You can catch COVID-19, no matter how sunny or hot the weather is. (Countries with hot weather have reported cases of COVID-19. To protect yourself make sure you clean your hands frequently and thoroughly and avoid touching your eyes, mouth, and nose.)	(Wilson, N. M. *et al.*, 2020)
9.	Drinking methanol, ethanol or bleach does not prevent or cure COVID-19 and can be extremely dangerous.	Methanol, ethanol, and bleach are poisonous. Drinking them can lead to disability and death. (Methanol, ethanol and bleach are sometimes used in cleaning products to kill the virus on surfaces. - However, you should never drink them. They will not kill the virus in your body and they will harm your internal organs.)	(Montalvan, V. *et al.*, 2020)

ROLE OF WHO:

1. They are providing advice, supplies and leadership to combat the spread of COVID-19.
2. They are distributing millions of tests to rapidly identify cases.
3. They are sharing science based information to help diagnose and manage cases.
4. They are supplying personal protective equipments to keep health care workers safe and prevent infection.
5. They are informing and educating with our guidance and online courses.
6. They are working with world leaders to keep their citizens and everyone, everywhere safe.
7. They are going on several clinical trials of both western and traditional medicines for prevention or treatment of COVID-19.

8. They are coordinating efforts to develop vaccines and medicines to prevent and treat COVID-19 and will continue to provide updated information as soon as research results become available (Pfeifer, M. *et al.,* 2020).

CONCLUSION:

In this review, we summarize all the potential interventions for COVID-19 infection according to previous treatments of SARS and MERS. We have found that the general treatments are very important to enhance host immune response against RNA viral infection. This new virus outbreak has challenged the economic, medical and public health infrastructure of China and to some extent, of other countries especially, its neighbours. Time alone will tell how the virus will impact our lives here in India. More so, future outbreaks of viruses and pathogens of zoonotic origin are likely to continue. Therefore, apart from curbing this outbreak, efforts should be made to devise comprehensive measures to prevent future outbreaks of zoonotic origin.

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