



Science

## A SHORT REVIEW ON CORONAVIRUS DISEASE (COVID19)



**Dr. Dnyaneshwar Kantaram Jadhav** \*<sup>1</sup>

<sup>1</sup> M.D (Kaychikitsa) (Ayu), Assistance Professor, Kaychikitsa Department, Shri Dhanwantri Ayurvedic Medical College & Research Centre, 281401, India

### Abstract

A pandemic is an epidemic of diseases which spread across a large number and instance multiple continents in world. In December 2019, whole world suffering from such pandemic disease called as covid19. Coronavirus disease i.e COVID-19 is caused by novel coronavirus. It is also known as SARS-CoV-2. This coronavirus has resulted in the outbreak of a respiratory illness known as COVID-19.

Fever, dry cough, fatigue, respiratory sputum production (phlegm), shortness of breath, muscle and joint pain, sore throat, headache, are signs and symptoms of covid19. Incubation period of covid19 is 5-6 days, its range 1-14 days.

In this Research paper to just attempt to provided short information regarding Corona disease.

**Keywords:** Corona Virus; Covid19; SARS-Cov-2; Pandemic; Short Review.

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### 1. Introduction

Coronavirus disease i.e covid19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It is an infectious disease caused by a novel corona virus. It is zoonotic disease which comes from civet cats, camels, bats.

#### Corona virus<sup>(1)</sup>

Coronaviruses are a large family of viruses. This virus cause illness in animals and humans. Animal who get infected with these viruses, spread this infection into living organism. For example, SARS-CoV was associated with civet cats and MERS-CoV is transmitted by dromedary camels. Animal sources of COVID-19 yet not confirmed.

In humans, several coronaviruses can cause respiratory infections. These respiratory infections can be simple illness like common cold as well as severe illness like Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS). Latest discovered coronavirus from coronavirus family causes coronavirus disease COVID-19.

## History

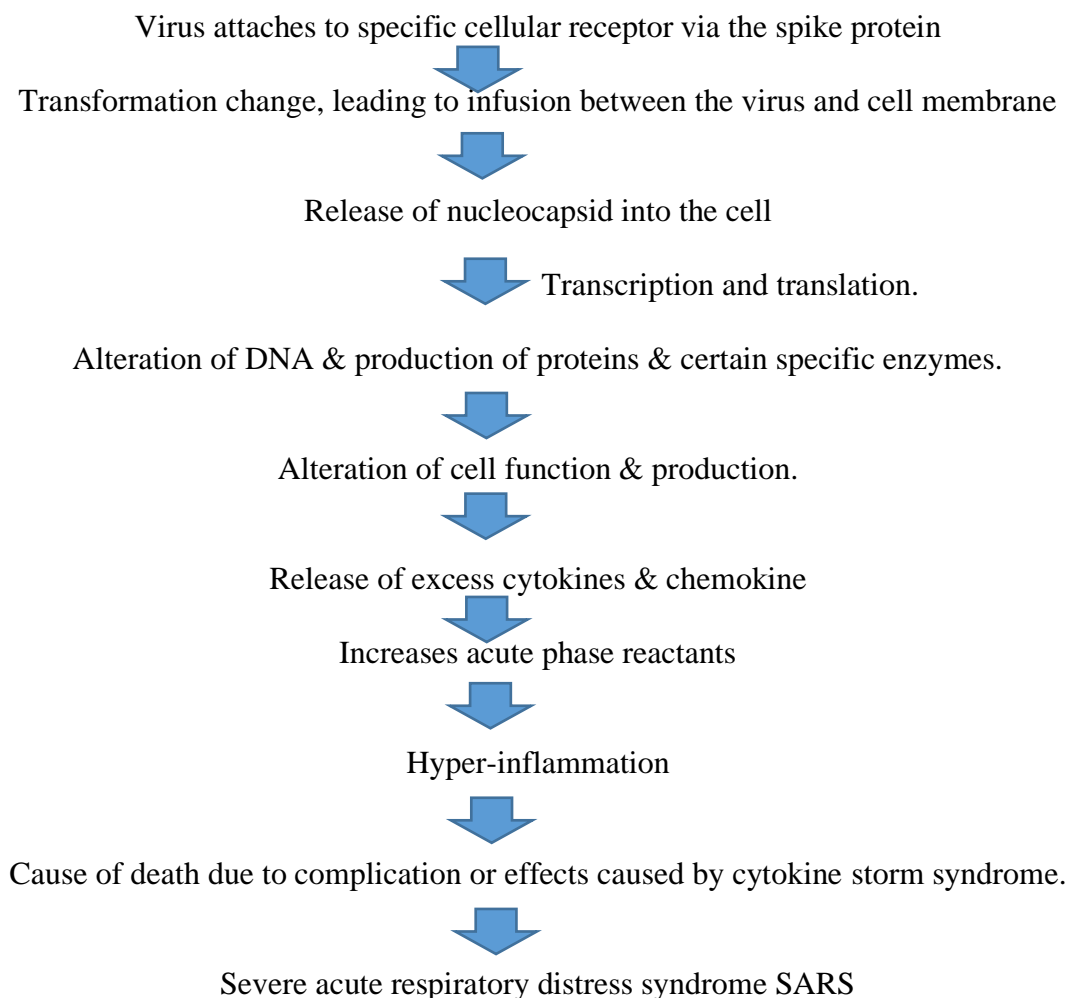
Report of China National Health Commission give information which mention the 17 death on 22<sup>th</sup> January 2020, 56 death on 25<sup>th</sup> January 2020. <sup>(2)</sup>

First case of covid19 found in Wuhan, China, in December 2019. On 30 January 2020 this situation accepted as Public Health Emergency at International level. On 11 March 2020 this disease declared as a pandemic. During this time china case fatality rate only 4 percent <sup>(3)</sup>.

## Pathogenesis <sup>(4)</sup>

Respiratory system is first targeting spot of virus. Cold, cough, is some of first symptoms related with respiratory system which convert into severe pneumonia, and later acute cardiac injury may occur. In covid19 both upper and lower respiratory tract seen to infection.

Its pathology as-



## Virology

SARS-CoV-2 is look same as old SARS-CoV. It is zoonotic in origin. DNA testing show that the genus of coronavirus clusters with the genus *Betacoronavirus*. Samples of bat coronavirus

(BatCov RaTG13) is 96% identical to this new virus. Viruses from pangolins and viruses from humans has difference of only one amino acid in genome sequence.

### **Genomic Data**

Various scientist is working on study of genome of SARS-CoV-2. It is an RNA molecule of about 30,000 bases containing 15 genes, including the S gene which codes for a protein located on the surface of the viral envelope. Study shown that SARS-CoV-2 belongs to the Beta coronaviruses group. Its genome is nearly same as SARS-CoV. Beta coronaviruses found in bats also. RaTG13, isolated from a bat of the species *Rhinolophus affinis* very similar to SARS-CoV-2. This both genomes are 96% identical.

### **Covid19 <sup>(5)</sup>**

It is the infectious disease which is caused by novel coronavirus. In December 2019, this new virus first time found in Wuhan, China. Scientists assumed that this virus may have developed in bats, and later it spread into pangolins. However, genomic comparisons suggest that the SARS-Cov-2 virus is the result of a recombination between two different viruses. Conclusion is that its exact origin of this virus is still unclear.

### **Symptoms <sup>(6)</sup>**

Symptoms of COVID-19 are still non-specific. Patients of covid19 can be symptomatic as well as asymptomatic. Most common symptoms which is found in covid19 are fever (88%) and dry cough (68%). Cold, sore throat, fatigue, shortness of breath, diarrhoea, loss of the sense of smell, joint pain, headache, chills, vomiting, haemoptysis, or cyanosis are other few symptoms of covid19. Severe symptoms of covid19 can cause severe pneumonia, acute respiratory distress syndrome, sepsis, septic shock and death.

Symptoms of covid19 are usually mild and begin gradually. Some people become infected but don't develop any symptoms, they called as carrier. About 80% carrier patients recover from this disease without any special treatment. Out of every 6 persons only 1 person who gets COVID-19 becomes serious i.e develops symptoms like difficulty breathing. Older people, patients of high blood pressure, heart problems, diabetes, are more prone to such serious illness. Patients with serious illness need more medical attention.

### **Spread of covid19**

The novel corona virus mainly spreads via droplets of saliva or nasal discharge when an infected person coughs or sneezes. **These droplets are too heavy to hang in the air. They quickly fall on floors or surfaces. If any person touch to this surfaces than they spread via touch.** Covid19 can be spread from the faces of an infected person but its probability is less.

### **High risk patients**

- Immune compromised individuals.
- Chronic disorders like asthma, diabetes, cardiac disorders.
- Old age persons or children.

### **Incubation Period**

The incubation period for novel corona virus disease range from 1-14 days, most commonly around five days.

### **Types of covid19 patients**

According to express of symptoms, there are two types of covid19 patients respectively - Symptomatic and asymptomatic (carrier)

Types of covid19 cases: Suspected, probable and confirmed are three types of cases found in covid19

- 1) **Suspected case** – a person with all sign and symptoms of covid19, person who care covid19 patients, person who attend any function with covid19 infected person.
- 2) **Probable case**-any person who meeting with suspected case of covid19 and had contact with confirmed case.
- 3) **Confirmed case** –a probable or suspected case whose laboratory test is positive for covid19.

### **Diagnosis**

- At early stage we assume diagnosis infection of covid19 on the basis of symptoms. we confirmed this with different tests.
- Virus is confirmed by rRT-PCR
- CT Imaging show the ground glass opacity, consolidation, B/L peripheral involvement especially lower lobe.

### **Laboratory Analysis**

- WBC count many vary (leukopenia -  $< 4000/\text{mm}^3$  or leucocytosis)
- Decreased lymphocyte count (lymphopenia – most common finding)
- Increased LDH levels (due to affinity of cytokines for cardiac & hepatic tissue )
- Increased ferritin level (early finding)
- Increased ST, ALT (aminotransferases)
- Increased ESR, Increased D-Dimer.

### **Differential diagnosis of covid19 <sup>(7)</sup>**

The differential diagnosis is very broad given the non-specific signs and symptoms. A rapid respiratory viral pathogen panel via nasopharyngeal swab may help detect the presence of a respiratory virus. Some potential respiratory pathogens may include (those tested on a respiratory pathogen panel noted with an-

- Adenovirus
- Coronavirus (Coronavirus detected on RPP is NOT COVID-19)
- Chlamydia pneumonia.
- Influenza.
- Human metapneumovirus (HmPV).
- Human rhinovirus/enterovirus.
- Legionella pneumophila.
- Mycoplasma pneumonia.

- Parainfluenza.
- Pneumocystis jirovecii (in immune-compromised hosts).
- Respiratory syncytial virus (RSV).
- Rhinovirus (common cold).
- Streptococcus pneumonia.
- Infectious mononucleosis.
- Acute HIV.
- Primary viral or bacterial pneumonia

Additional non-infectious diagnoses that can be considered include:

- Pulmonary: Pulmonary oedema, Pulmonary embolism, COPD exacerbation, Asthma, Pulmonary hypertension/Cor pulmonale, ARDS, pneumonitis
- Cardiac: Acute Coronary syndrome, CHF, valvular disease
- Other: Tumor, Acute Chest Syndrome (from Sickle Cell Disease)

### **Treatment** <sup>(8)</sup>

There are no specific antiviral allopathic medicine available on covid19. The WHO stated that some traditional medicine and remedies provide relief of the symptoms caused by SARS-CoV-19. On this bases china using traditional medicine on covid19 and doing research on same.

Supportive treatment

- Maintain airway, breathing, and circulation.
- Ventilation if required (if  $po_2 < 50\%$ )
- Isolation (to prevent spread)
- Correction of electrolyte imbalance)
- Correct temperature
- Some supportive drugs as per need – tocilizumab, anakinra, remdesivir, lopinavir, hydroxychloroquine, azithromycin.

**Way to reduce covid19 –**

- **Social distancing** –its mean deliberately increases the physical space between people to avoiding spared the illness. Here we need to maintain approximately 6 feet or 2 meter distance from each other.
- **Hand washing**- washing hands frequently (once in hours) with soap and water (at least 20 seconds). If soap and water not available than use alcohol based hand-sanitizer with at least 60% alcohol.
- **Surface cleaning** - clean and disinfected frequently touched surface and objects. Surface of tables, chairs, doorbells, switches of light, mobiles, computer keyboards, toilets. Wear gloves before cleaning and disinfecting surface. Discard gloves after each cleaning. Wash hand immediate after gloves are removes. If a surface is dirty, clean it first with detergent or soap and water than disinfect it.
- **Face masks and PPE** - use N95 mask or three folded cloths which covers nose, mouth and chin. At high risk area healthwoker should use PPE.

- **Self-isolation** - it's for those who have been exposed to the new coronavirus and who are at risk for coming down with covid19. Minimum 14 days self-isolation advised by health expert.

## 2. Conclusion

Recently, whole world is suffering from corona disease. Even Corona virus are old and much known to us, but this novel corona virus is new and dangerous. Its death rate are low but its symptoms sudden occurs and may become serious. covid19 create its own phobia. Modern science doing research on its vaccine and drugs while AYUSH correlated its according to pathophysiology of own science. it's one attempt to collect short review of covid19 according to modern science. Very soon I shall present covid19 according to Ayurveda.

## References

- [1] <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>. (14 April 2020: 12.30 pm)
- [2] Wang W., Tang J., Wei F. Updated understanding of the outbreak of 2019 novel coronavirus (2019-nCoV) in Wuhan, China. *J. Med. Virol.* 2020;92(4):441–447.
- [3] [https://en.wikipedia.org/wiki/2019%E2%80%932020\\_coronavirus\\_pandemic](https://en.wikipedia.org/wiki/2019%E2%80%932020_coronavirus_pandemic). (14 April 2020: 12.30 pm)
- [4] Huang C., Wang Y., Li X., Ren L., Zhao J., Hu Y. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020;395(10223):497–506.
- [5] <https://www.weforum.org/agenda/2020/03/coronavirus-origins-genome-analysis-covid19-data-science-bats-pangolins/>
- [6] [https://en.wikipedia.org/wiki/2019%E2%80%932020\\_coronavirus\\_pandemic#Signs\\_and\\_symptoms](https://en.wikipedia.org/wiki/2019%E2%80%932020_coronavirus_pandemic#Signs_and_symptoms). (14 April 2020: 1.45 pm)
- [7] <https://www.accessmedicinenetwork.com/users/83836-julie-grishaw-acnp/posts/62124-covid-19-differential-diagnosis>. (15 april 2020 :4 pm)
- [8] [https://www.who.int/health-topics/coronavirus#tab=tab\\_1](https://www.who.int/health-topics/coronavirus#tab=tab_1)

\*Corresponding author.

E-mail address: [dj85015@gmail.com](mailto:dj85015@gmail.com)