

## The Novel Coronavirus (COVID-19) history, pathogenesis, diagnosis and treatment (A. Review)

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### Abstract

Corona Virus is one of the dangerous viruses that invaded the world and caused many deaths. Covid 19 have many various of symptoms and this virus infects animals previously, but now it has begun to develop itself through the occurrence of genetic mutations that have caused humans to develop severe respiratory problems, Which led to the destruction of the health system in more than one country around the world, the transmission of the disease from animals to humans by bats and seafood appeared in Wuhan, Hubei Province in December 2019, which was called (Covid 19). The disease may spread through the movement of air in the atmosphere and for short distances or through flying mist when sneezing among people. The incubation period for the virus varies from one person to another approximately (2-14) days. As for the symptoms of those infected with the virus, it may include fever, cough, pain in the throat, and tightness in Breathing, fatigue and discomfort, sometimes there are no symptoms in infected people and the infection may be mild or severe causing pneumonia or acute respiratory syndrome. Viral infection is detected by examining chest x-rays and Collecting a liquid sample using swab from nasal, but these tests do not give a sure and accurate result. Therefore, orientation was carried out using the spiral mare and the polymerase chain reaction.

### Introduction

Coronavirus is a disease may be infected and the individuals noteworthy pathogens that vital centering the mankind's respiratory systemic. Secret word outbreaks to coronaviruses (CoVs) fuse the individuals amazing heightening respiratory syndrome and the focus east respiratory syndrome which bring been for a short time concerning illustration operators that are an incredible general population wellbeing risk. This spoiling could bring been recognized for marine animals Previously, Wuhan, china [1-5]. Until February 2020, it may need been also delineated Previously, America [6]. (WHO) in 11, March, 2020, announced the novel coronavirus (covid19) scene around the world pandemic [7-9]. Because of this continuous general wellbeing crisis, American focuses and colleges have created (Science and Engineering), (Johns Hopkins University) in USA to envision and track detailed instances of coronavirus illness 2019 (covid19) in Appropriate period nations and territories [10-12]. Covid's ailment 19 is obscure, dubious and conceivable yet likely that the malady will deliver

enough extreme sickness to overpower social insurance infrastructure. Emerging viral pandemics, it could work an issue on general wellbeing and wellbeing frameworks and on suppliers of basic network administrations [13]. The Lancet by Huang detailed the epidemiological, clinical, research centre, and radiological attributes, just as treatment and clinical results, of patients with lab affirmed covid19 pneumonia [14].

Corona virus is wrapped, positive single-stranded huge RNA, infections that taints humans and creatures we report the viral RNA shedding designs saw in patients with mellow and serious covid19 [15, 16]. The middle age for patients Approximately be 59 in ages, at Top dismalness while death-rate through that older while among that to existing together Circumstances 56 percentage of the many patients from men. Of note, there are no cases at youngsters more youthful than 15 years old. Either youngsters are more averse to get contaminated, which would have significant epidemiologic ramifications, or their manifestations were mellow to the point that their disease got away from identification [17]. The illness can be constrained by controlling an individual's way of life control gauges that are started by indication beginning, for example, segregation, contact following and improved cleanliness or utilization of face veils for suggestive people [18-22]. All patients experienced chest CT imaging. Ongoing opposite transcriptase polymerase chain response tests for covid19 nucleic corrosive were performed utilizing nasopharyngeal swabs [23]. Covid19 may incline to both venous and blood vessel thromboembolic illness because of over the top irritation, hypoxia, and immobilization diffuse intravascular coagulation [24, 25].

## **History**

In Wuhan, China, ago December 2019 have encountered episode of (covid19) ailment coronavirus19, brought about by the serious intense respiratory disorder (SARS-CoV-2) [26]. Coronaviruses possess many positive possibilities, especially in the RNA of different shapes in terms of width and height in addition to the shape of their distinctive surface, which is in the shape of the crown when observed under the microscope, hence the name of the virus in thus name [27]. Four types of virus infection were used (NL63, 229E, OC43 and HKU1), and thus they are controlled when used on the walker and with a limited number; most of them were causing severe respiratory diseases. In the past period, there was an infection resulting from the beta type hybridization process, which causes symptoms and serious infections, especially in the (2002-2003) period a type transmission appeared the second of the virus is a  $\beta$  genus from animals to humans through bats or seafood, which are good intermediaries for the virus. This was observed in the Chinese zone of Guangdong, where it was considered one of the viruses that infect the respiratory system and cause strong infections, which contributed to high infection rates in China and Hong Kong, but control was achieved later [28].

## **Clinical features**

Clinical results of this covid19 are different. These symptoms often or there may be problems in the respiratory system of the affected person causing pain in all the body parts. the human infection by this virus maybe lead to appear symptoms infection Fever, cough, fatigue, sore throat, migraine, muscle pain, shortness of breath, loss of taste or smell, headache, aches and pains, diarrhoea, a rash on the skin, loss of speech, chest pain. Therefore, infection with this virus is not clear-cut, and the infection that affects the respiratory system may develop into a chronic disease such as pneumonia. That movement had related for outrageous

ascent in incendiary cytokines inclusive (GCSF, MCP1, IP10, MIP1A, TNF $\alpha$ , IL2, IL7 and IL10) [29]. Reports recommend that the Middle East respiratory disorder related coronavirus can cause intense myocarditis and cardiovascular breakdown [30, 31], (MERS-CoV, SARS-CoV-2) have comparative Pathogenic of Myocardial infarction harm brought about through contamination for that infections without a doubt builds the trouble and multifaceted nature of patient treatment [32]. Laboratory outcomes are not needy since they are not exact in determined lymphopenia and raised LDH. There is no information so far about skin appearances in covid19 Cutaneous signs were erythematous rash, Itching was low or missing and as a rule injuries recuperated in scarcely any days. We underline that contamination counteraction and control are important to restrict the spread of the infection during the hatching period [33]. covid19 is also likely to show its symptoms immediately and quickly, causing problems in parts of the human body such as respiratory disorder, critical heart injuries and severe kidney injuries. This condition begins to deteriorate to the highest level over time [34, 35]. In some cases of this virus, an increase in white blood cells, a decrease in blood levels, an increase in the speed of blood sedimentation, an increase in the time of catalytic thromboplastin, and an increase in the receptor are observed [36-38].

### **Pathogenesis**

Virus Covid 19 has been associated with high indicators in terms of infection preparation and mortality preparation, especially in the affected areas in China, the National Health Committee of China explained the precise details about this virus was in January 2020, but cases began to increase day after day [39]. After examining Covid 19 patients, it was found that the number of white blood cells is high and the work of the respiratory system was in an irregular way and different proportions of cytokines in the plasma. 39 ° C, when a sputum was taken and examined through the positive polymerase chain, it was found to contain viral Covid [40]. Through the rapid spread of the virus and the methods of infection, Covid was considered 19 diseases that are difficult to understand strong and unstable, which can be fatal due to the damage that it causes in the epithelial tissues of the respiratory system, causing suffocation, shortness of breath, and destruction of the pulmonary vesicles. [41- 43].

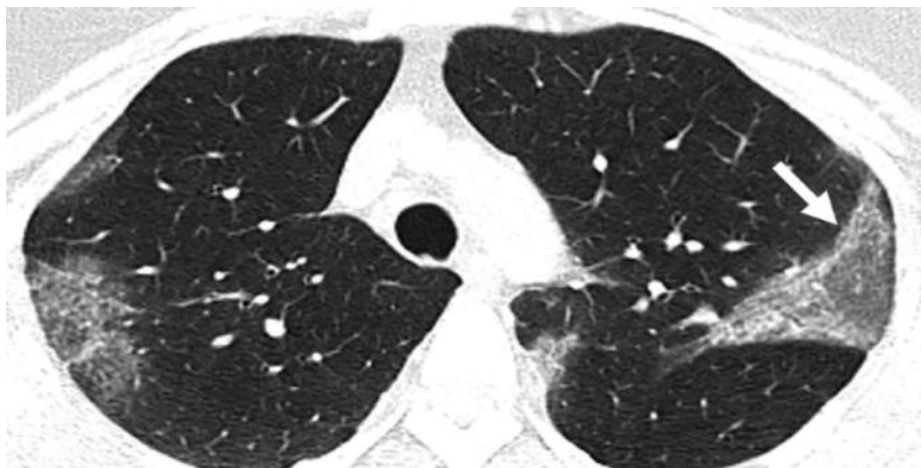
The neurotic highlights of covid19 significantly take after Is present in Middle Eastern respiratory trouble contamination and SARS [44,45]. Human pathogenic coronaviruses (SARS-CoV and SARSCoV-2) tie to their objective cells through angiotensin-changing over compound 2, which is communicated by epithelial cells of the lung, digestive system, kidney, and veins [46-49] The most infected numbers in China and America were about 60% of the countries of the world, and the remaining percentage was distributed to all countries of the world, and when he discovered the appropriate vaccines, it helped reduce infection rates through vaccination. As for the death rate, it was present in simple proportions, approximately 3% of the total population of China and America, compared to the number cured cases, Among the countries most affected by the virus are USA, UK, China, Italy, Iran, India .. etc [50, 51].

### **Diagnosis**

The primary assignment for the clinical analytic work process is to affirm Wuhan and different countries affirmed patients during the past period. The chest CT discoveries of viral pneumonia are viewed as proof of clinical determination of covid19 disease. Nonetheless, the On February 17, 2020, the World Health Organization decided not to rely solely on X-rays, but

rather to conduct a more accurate test to ensure that the samples are analysed through a device PCR [52]. as such Some early specialists have watched imaging designs on chest radiographs and CT filters [53, 54]. These territories utilized for the assessment incorporated the mind stem, cerebral white issue, and cerebellum where Lesions show up hypo attenuating on CT pictures and MRI exhibits T2 FLAIR hyper intense signal with inside discharge [55-58].

A gathering of individuals was concentrated through based on the span between manifestation beginning and the principal CT examine, In bunches checks done .When performing a computerized CT imaging of the chest for Covid 19 patients, acute pulmonary infections appear (figuer 1) and this condition may be even for patients who have no symptoms and where the condition begins to deteriorate during a short period, so knowledge of the disease through clinical symptoms and performing laboratory tests is very necessary to know the pneumonias present in The body, In addition, there is an antigen test that detects this virus through the presence of Immunoglobulin G and Immunoglobulin M proteins. Samples are collected from the nose and the analysis is done within minutes or sent to the laboratory, but this examination is not accurate. It is likely that the doctor will be sent the sample to conduct a polymerase chain reaction analysis to know and confirm the result. Addition to chest x-rays [59].



**Figure 1:** showed CT scan of a lung infected with Corona virus19

### **Prevention**

It is difficult to tackle covid19 disease due to the lack of appropriate medicines for him at the present time because the characteristics and shape of this virus make it difficult to diagnose it due to the different periods of infection because it is possible to infect people before symptoms appear or through flying mist or touching contaminated surfaces or through the movement of air, but for prevention From illness in homes, the confirmed or suspected cases can be separated at home, as well as ventilating the house and allowing sunlight to enter the home, in addition to wearing non-infected home paws and gags with continuous sterilization of the hands for 20 minutes. As for health workers, they should wear several protective equipment from masks, paws suit and glasses because they are more likely to get sick [60, 61]. For the purpose of obtaining good health care, transmission of the disease between people has passed. Doctors, nurses and laboratory personnel must be secured. Examine the rooms of the infected persons far from the affected ones, then disinfect the rooms and sterilize the surfaces and devices using sodium hypochlorite. Receive type breathing apparatus n95 and protective suits [62].

## **Treatment**

There is a pressing need to treat suggestive patients yet additionally to diminish the length of infection carriage so as to restrict to transport in the network. through competitor medications into pleasure covid19, medications older to using for anti-virus therapy has an intriguing system since information on security profile, reactions, posology and medication communications are notable [63, 64]. SARS-CoV-2 in vitro treated through developmental an inhibitor impact of remdesivir and chloroquine [65]. It indicated early clinical preliminary led in Chinese people covid19, Chloroquine has had a good effect through clinical outcomes [66]. Hydroxychloroquine has been exhibited to have SARS-CoV movement in vitro [67]. Convalescent plasma has been utilized if all else fails to improve the endurance pace of patients with SARS whose condition kept on weakening in spite of treatment with beat methylprednisolone, the immunotherapy that is a wide killing counter acting agent to HIV-1 [68-70]. Additionally critical difference in the level of lymphocytes and CRP levels was seen after tocilizumab treatment [71-72]. Oseltamivir, lopinavir, ritonavir and the intravenous organization of ganciclovir [73]. Some studies have revealed that some drugs have stopped the virus Covid 19 during a certain period of these drugs is darunavir, which is considered a protein enzyme HIV-1 while some medical companies have succeeded in developing and producing different vaccines to treat Corona virus infections, including Pfizer, Astraznica, Moderna, Gambia, Sinopharma and others, which contributed to reducing infection with this virus [74,75].

## **Conflict of interest statement**

The authors declare that there are no conflicts of interest.

Author Contributors

## **Conclusions**

The COVID-19 caused by SARS-CoV-2 that emerged in December 2019 remained a controversial subject of intense speculations regarding its origin. The covid19 pandemic mirrors this current age's biggest, and conceivably, worldwide general medical problem. The pace and volume of clinical preliminaries led to assess conceivable covid-19 treatments underscore both the need and ability to convey top notch proof even amidst a pandemic. So far no fruitful treatments have been appeared. The most recent infection plague has undermined China's and somewhat other nations' social, clinical and general wellbeing framework. Time alone can't state how the infection can't affect our lives so endeavours ought to be made to figure efficient measures to maintain a strategic distance from potential zoonotic starting point episodes.

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## فيروس كورونا المستجد (COVID-19) تاريخه ومسبباته وتشخيصه وعلاجه (مقال مراجعة)

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### الخلاصة:

يعتبر فيروس كورونا من الفيروسات الخطيرة التي اجتاحت العالم وتسببت في العديد من الوفيات، ولم تُعرف بعد خصائص وأشكال الفيروس النهائي وهذا الفيروس يصيب الحيوانات سابقاً، لكنه الآن بدأ في تطوير نفسه من خلال حدوث جيني الطفرات التي تسببت في إصابة الإنسان بمشاكل تنفسية حادة، مما أدى إلى تدمير النظام الصحي في أكثر من دولة حول العالم، وظهر انتقال المرض من الحيوانات إلى الإنسان عن طريق الخفافيش والمأكولات البحرية في ووهان بمقاطعة هوبي في ديسمبر 2019 والذي كان يسمى (كوفيد 19) وقد ينتشر المرض من خلال حركة الهواء في الغلاف الجوي ولمسافات قصيرة أو من خلال رذاذ الطيران عند العطس بين الناس. وتختلف فترة حضانة الفيروس من شخص لآخر بحوالي (2-14) يوم. أما عن أعراض المصابين بالفيروس فقد تشمل الحمى والسعال والام الحلق وضيق التنفس والتعب وعدم الراحة وأحياناً لا تظهر أعراض لدى المصابين وقد تكون العدوى خفيفة أو شديدة مسببة التهاب رئوي. أو متلازمة الجهاز التنفسي الحادة، حيث يتم الكشف عن العدوى الفيروسية عن طريق فحص الصدر بالأشعة السينية أو اخذ مسحة من الانف بواسطة السواب، ولكن هذه الاختبارات لا تعطي نتيجة مؤكدة ودقيقة. لذلك، تم التوجيه باستخدام المفراس الحلزوني وتفاعل البلمرة المتسلسل.

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