

INFECTION WITH A NOVEL CORONA VIRUS (2019-nCoV)

(The PRESENT RISK AND THE CHALLENGE)

(A Brief Review)

KAMAL M. ALSAAD

Department of internal and preventive medicine, College of Veterinary Medicine,
University of Basrah, Iraq.

(Received 7 March 2020, Accepted 17 March 2020)

Key words: Corona virus . Risk and challenge

Corresponding author :kamalsad58@yahoo.com

ABSTRACT

In late December, 2019, patients presenting with suspected of viral pneumonitis due to an non-identified microbial agent were reported in Wuhan, China. A novel coronavirus was subsequently identified as the causative pathogen, provisionally named 2019 novel coronavirus (2019-nCoV). As of Jan 26, 2020, more than 2000 cases or more of 2019-nCoV infection have been confirmed, most of which involved people living in or visiting Wuhan, and human-to-human transmission has been confirmed.

INTRODUCTION

Corona viruses are a group of viruses that can cause a range of symptoms including a runny nose, cough, sore throat and fever. Some are mild, such as the common cold, while others are more likely to lead to pneumonia. They're usually spread through direct contact with an infected person.

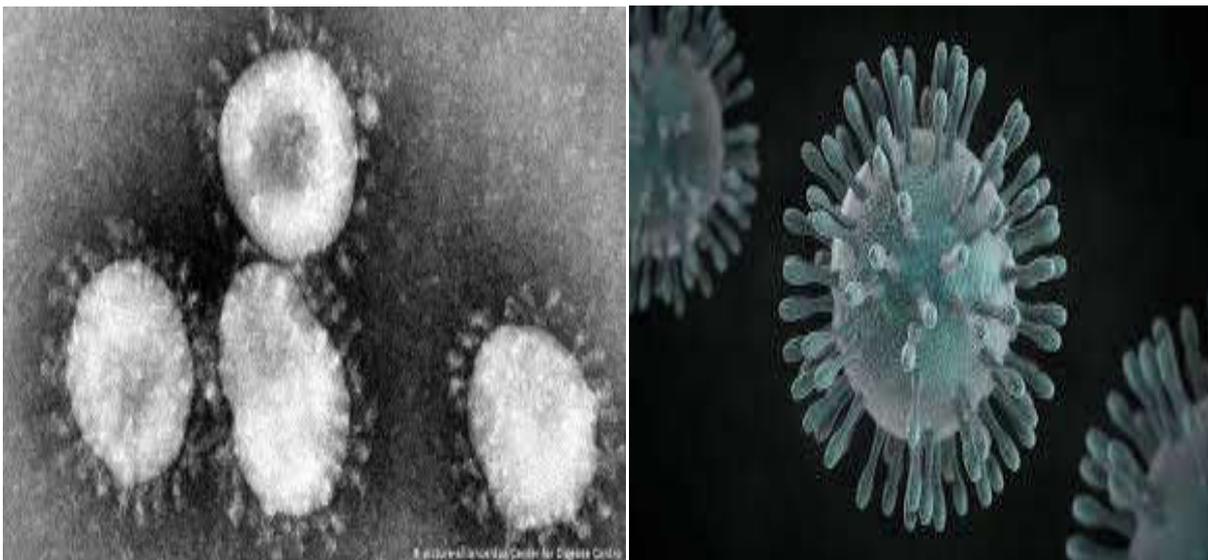
The corona virus gets its name from the crown-like spikes on its surface, according to the Center for Disease Control and prevention CDC.

(Corona is Latin for crown.) Including the newly identified form of the virus, there are a total of seven coronaviruses that can infect humans, the CDC says. Other well-known coronaviruses include SARS and MERS.

The new virus is called 2019-nCoV. It's unclear how easily it spreads from person to person, but the CDC recommends that anyone who may have been exposed to the illness monitor themselves for 14 days after close contact with an infected person.

2019 Novel Coronavirus (2019-nCoV) is a virus (more specifically, a coronavirus) identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China. Early on, many of the patients in the outbreak in Wuhan, China reportedly had some link to a large seafood and animal market, suggesting animal-to-person spread. However, a growing number of patients reportedly have not had exposure to animal markets, suggesting person-to-person spread is occurring. At this time, it's unclear how easily or sustainably this virus is spreading between people.

The virus



Viruses of the family Coronaviridae possess a singlestrand, positive-sense RNA genome ranging from 26 to 32 kilobases in length. Coronaviruses have been identified in several avian hosts as well as in various mammals, including camels, bats, masked palm civets, mice, dogs, and cats. Novel mammalian coronaviruses are now regularly identified. For example, an HKU2- related coronavirus of bat origin was responsible for a fatal acute diarrhea syndrome in pigs in 2018.

Among the several coronaviruses that are pathogenic to humans, most are associated with mild clinical symptoms with two notable exceptions: severe acute respiratory syndrome

(SARS) coronavirus (SARS-CoV), a novel betacoronavirus that emerged in Guangdong, southern China, in November, 2002 and resulted in more than 8000 human infections and 774 deaths in 37 countries during 2002 and Middle East respiratory syndrome (MERS) coronavirus (MERS-CoV), which was first detected in Saudi Arabia in 2012 and was responsible for 2494 laboratory-confirmed cases of infection and 858 fatalities since September, 2012, including 38 deaths following a single introduction into South Korea. Corona 2019-nCoV virus actually belongs to a family of coronaviruses (CoV), which include Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV).

A newly identified respiratory virus that causes pneumonia has been recently discovered in China city of Wuhan now a days. and Cases of the virus, a type of coronavirus, have spread in China, and have also been reported in nearby countries in Asia.

Epidemiology of the disease

Spreading of the virus :

At first sight, The researchers are still learning precisely how does the new virus spreads from person to person. More possibilities, are through Droplets and contaminated surfaces, Sneezing and Through contact with the virus particles on a surface outside of the body. While they do not know all of the mechanisms of spread of the epidemic so far, there is likely spread by droplets and contaminated surfaces, and possible airborne [spread], similar to SARS.

It has been suspected, that Coronaviruses in general are spread through close contact — a range of about 3 to 6 feet. The virus is primarily spread through a sick person coughing or sneezing on someone. Moreover, A person could also become infected through contact with the virus particles on a surface, though it's unknown how long the new coronavirus can survive on surfaces outside of the body.

It was documented, The SARS virus was also spread through feces. Thus researchers suggested the same spreading mechanism may be found in the new virus, but it's too early to know for sure.

Now a day's a Hundreds of patients have been infected with the virus across China, with central Hubei province . Furthermore, The World Health Organization (WHO) is warning

the number of cases is likely to rise further, and Chinese authorities have introduced a number of measures to try to stop the virus's spread.

For now, The WHO has classed the virus as an "international emergency", partly because of the high number of overseas cases, which it expected that before ?.

The role of animals in spreading the virus

CoV's are zoonotic viruses meaning that they can be transmitted between animals and humans. In fact, MERS-CoV and SARS-CoV both reached humans by way of dromedary camels and civets, respectively.

Many of the patients in the pneumonia outbreak caused by 2019-nCoV in Wuhan, China had some link to a large seafood and live animal market, suggesting animal-to-person spread. However, a growing number of patients reportedly have not had exposure to animal markets, indicating person-to-person spread is occurring.

It was though that eating of snakes and bats soup was help in transmission of the virus .

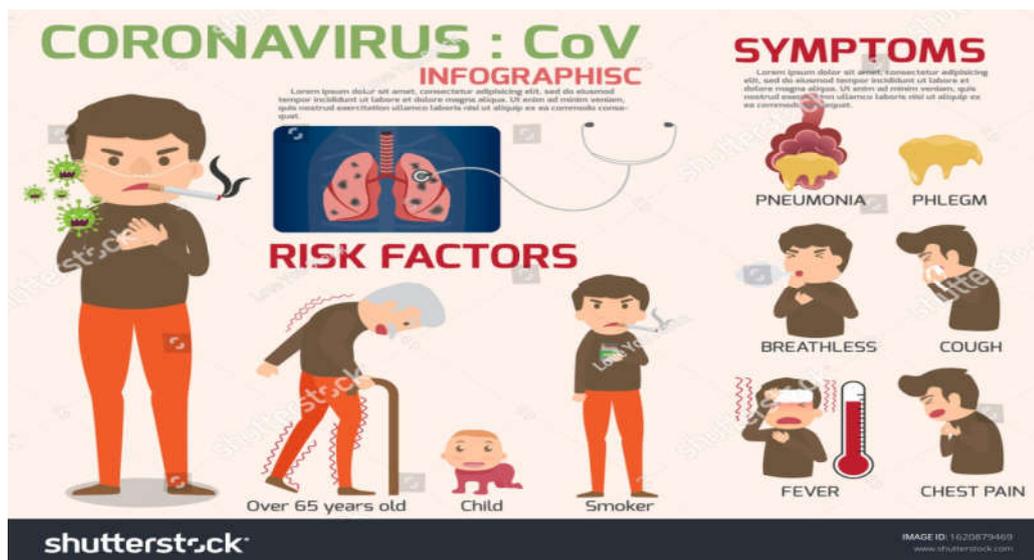


Clinical signs :

- 1- Incubation period still unknown which could be about 14 days.
((It's unclear whether a person is contagious during the incubation period.))
- 2-Symptoms of 2019-nCoV may appear in as few as 2 days or as long as 14 after exposure

3-The common symptoms are,, Headache, Fever, Cough, Shortness of breath& trouble breathing, Body aches ,Sore throat

- Vomiting and diarrhea could also be seen
- In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.



Control and Prevention

There is currently no treatment recommended for coronavirus infections except for supportive care as needed. Several antivirals and other agents were used during the severe acute respiratory syndrome coronavirus (SARS-CoV) outbreak, but the efficacy of these drugs has not been established.

Chloroquine, which has potent antiviral activity against the SARS-CoV, has been shown to have similar activity against HCoV-229E in cultured cells and against HCoV-OC43 both in cultured cells and in a mouse model. However, there have been no studies of efficacy in humans.

How to stay healthy

There are some common sense measures everyone can take to protect themselves and others from the spread of respiratory illnesses including coronavirus disease 2019 (COVID-19).

- Wash hands frequently with soap and water for at least 20 seconds at a time.
- Avoid touching your eyes, nose and mouth with unwashed hands.

- Avoid close contact with people who are ill.
- Cover your mouth and nose with a tissue when you cough or sneeze.
- Do not reuse tissue after coughing, sneezing or blowing your nose.
- Clean and disinfect surfaces that are frequently touched.

It is also good practice to start being more aware of the number of times a day your hands touch an object or hard surface and then touch your face without being washed. Limiting the exposure of your nose, mouth and eyes to unwashed hands can help to protect from the infection .



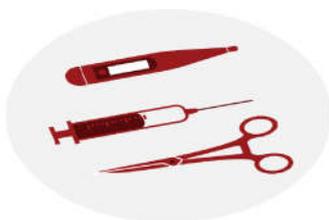
Recommended measures for hospital staff dealing with coronavirus



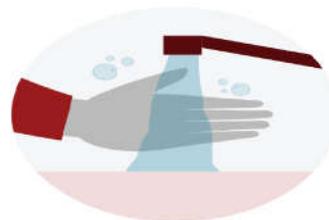
Isolate patients
and limit their movement



Wear protective clothing
such as medical mask,
eye protection, gloves and gown



Disinfect shared equipment
between patient use



Wash hands after patient contact

Source: World Health Organization

BBC

العدوى بفيروس كورونا الجديد (٢٠١٩-nCoV) (الخطر الحالي والتحدي) (استعراض موجز)

كمال الدين مهلهل السعد

فرع الطب الباطني والوقائي ، كلية الطب البيطري ، جامعة البصرة

الخلاصة

في أواخر شهر كانون الاول ٢٠١٩ ، تم الإبلاغ عن مرضى يشتبه في إصابتهم بالتهاب رئوي فيروسي بسبب عامل ميكروبي غير معروف في مدينة ووهان في الصين. تم تحديد نوع جديد من الفيروسات التاجية على أنه الممرض المسبب ، وأطلق تسميته لاحقاً بفيروسات تاجية جديدة (٢٠١٩-nCoV). واعتباراً من ٢٦ كانون الثاني ٢٠٢٠ ، تم تأكيد أكثر من ٢٠٠٠ حالة أو أكثر من عدوى nCoV لعام ٢٠١٩ ، ومعظمها شملت الأشخاص الذين يعيشون في مدينة ووهان أو يزورونها ، وتم تأكيد انتقال العدوى من شخص لآخر.

REFERENCES

- 1-World Health Organization. (2020).**Director-General's remarks at the media briefing on 2019-nCoV on 11 February. <https://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020>.
- 2-Chan, J.F., Lau, S.K., To, K.K.(2015).** Middle East respiratory syndrome coronavirus: another zoonotic betacoronavirus causing SARS-like disease. *Clin Microbiol Rev* 2015; 28:465.
- 3-International Committee on Taxonomy of Viruses.(2015).**
<http://ictvonline.org/virusTaxonomy.asp>, 21 .
- 4-Masters, P.S., Perlman, S.(2013)** Coronaviridae. In: *Fields Virology*, 6th ed, Knipe DM, Howley PM, Cohen JI, et al (Eds), Lippincott Williams & Wilkins, a Wolters Kluwer business, Philadelphia. 2, pp.825.
- 5-McIntosh, K., Peiris, J.S.M. (2019).**Coronaviruses. In: *Clinical Virology*, 3rd ed, Richman DD, Whitley RJ, Hayden FG (Eds), ASM Press, Washington, DC pp.1155.
- 6-Kuo, L., Masters, P.S. (2002).**Genetic evidence for a structural interaction between the carboxy termini of the membrane and nucleocapsid proteins of mouse hepatitis virus. *J Virol* .76:4987.
- 7-Anthony, S.J., Johnson, C.K, Greig, D.J.(2017).** Global patterns in coronavirus diversity. *Virus Evol.* 3:vex012.
- 8-Hofmann, H., Pyrc, K., van der Hoek, L.(2005).** Human coronavirus NL63 employs the severe acute respiratory syndrome coronavirus receptor for cellular entry. *Proc Natl Acad Sci.* 102:7988.

9-Zaki ,A.M, van Boheemen, S., Bestebroer, T.M.(2012). Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. N Engl J Med. 367:1814.

10-Centers for Disease Control and Prevention (CDC).(2012). Severe respiratory illness associated with a novel coronavirus--Saudi Arabia and Qatar, Morb Mortal Wkly Rep; 61:820.