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Transmission and preventive measures of "Covid -19"

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Abstract
Outbreaks of Coronavirus 2019 (COVID-19), caused by acute acute respiratory syndrome (SARS) coronavirus 2 (SARS-CoV-2), have so far killed more than 3,000 people and infected more than 80,000 in China and beyond places in the world, which leads to disaster for people. Like its virus, SARS-CoV, which created SARS in thousands of people in 2003, SARS-CoV-2 can also be transmitted to bats and cause similar symptoms in the same way. However, COVID-19 has a lower risk and mortality rate than SARS but is more contagious and affects older people than adolescents and more men than women. In response to the rapidly growing number of literature on this emerging disease, this article seeks to provide a timely and complete review of the rapidly evolving research topic. We will look at the basics about epidemiology, etiology, virology, diagnosis, treatment, prognosis, and prevention of this disease. Although many questions still need answers, we hope that this review will help to understand and eliminate the threatening disease.

Keywords: coronavirus, pneumonia, outbreak, sars-cov-2, Covid-19

Introduction
The World Health Organization (WHO) has declared coronavirus 2019 (COVID-19) a pandemic. A concerted effort is required to stem the spread of the virus. The epidemic has been described as "a widespread phenomenon and is affecting more and more people. The last reported global epidemic was the H1N1 flu in 2009. Coronaviruses are a large family of viruses known to cause infections ranging from the common cold to serious illnesses such as Middle East Respiratory Syndrome (MERS) and Server Acute Respiratory Syndrome (SARS). The novel coronavirus (COVID-19) was discovered in 2019 in Wuhan, China. This new coronavirus has never been identified in humans before. Coronaviruses are a family of viruses that cause infections such as respiratory infections or intestinal infections. Respiratory infections can range from the common cold to serious illnesses in, g. Middle East Respiratory Syndrome (MERS-CoV) Severe Acute Respiratory Syndrome (SARS-CoV). The novel Coronavirus (nCoV) is a new species that has never been identified in humans before. Once scientists determined who the coronavirus was, they named it (as in the case of COVID-19, the virus that causes SARS-CoV-2). The virus contains a total of genes surrounded by an envelope containing antagonistic proteins. This makes it look like a crown. The word Corona means "crown" in Latin. Coronaviruses are zoonotic, meaning that the virus is transmitted between animals and humans. It was determined that MERS-CoV was transmitted from camels to humans and SARS-CoV from civets to humans. The source of SARS-CoV-2 (COVID-19) is not yet known, but i4nvestigations continue to identify the source of the zoonotic outbreak.

Origin
The latest outbreak began in Wuhan, a city in the Hubei province of China. The first cases of COVID-19 cases began in December 2019. Coronaviruses are common in certain species of animals, such as cattle and camels. Although transmission of coronaviruses from animals to humans is rare, new strains may have originated with bats, although some studies indicate that parasites can be eliminated. Back to the seafood and livestock market in Wuhan. It is possible from here on out that SARS-CoV-2 has begun to spread to humans. The CDC recommends that people wear cloth masks in public places where it is difficult to maintain body distance. This will help reduce the spread of the virus to people who do not know they have it, including those with asymptomatic. People should wear face masks while continuing to exercise. Instructions for making masks at home are available here. It is important that the N95 surgical and respiratory mask is kept for health workers.

Epidemiology
Geographical distribution and counting of cases - Worldwide, more than 100 million COVID-19 cases have been reported. Statistics on updated cases in English are available on the World Health Organization's website and at the European Center for Disease Prevention and Control. An interactive map showing validated cases around the world can be found here. Since the first reports of cases from Wuhan, a city in China's Hubei Province, in late 2019, cases have been reported on every continent, except Antarctica. Reported cases undermine the heavy burden of COVID-19, as only a fraction of the serious illnesses are diagnosed and reported. Seroprevalence studies in the United States and Europe have suggested that after calculating the potential benefits or negatives, the level of pre-exposure to SARS-CoV-2, as shown by seropositivity, exceeds the incidence of reported cases by about 10 or more.

Characteristics of SARS CoV-2
SARS-CoV-2, a novel coronavirus, likely originating from a bat, with undefined intermediate animalhost, has recently been discovered in humans. Person to person transmission is

rapid causing largecommunity outbreaks across the globe. The virus infects and locally colonizes the human nasopharynxand upper respiratory tract, later affecting the lower respiratory tract leading to pneumonia, respiratory failure and sometimes death (variable case fatality rates reported 1-5%). It is an enveloped virus which makes it fragile and vulnerable to heat, chemicals and ultraviolet sunlight.

Routes of Transmission

- This is how an agent is transferred from a pool to a person who can easily be harmed.
- Social network - contact directly or indirectly through an inanimate object;
- Drops - large droplets released by sneezing, coughing or even talking;
- Airway - with very small particles that can travel from one room to another via an air wave;
- Ordinary vehicle - where a contaminated vehicle acts as a means of transmitting the infection to several people such as food in the form of salmonella or blood-borne pathogens (hepatitis B); and
- Importance of diseases associated with health care 7
- Inoculation - automatic injury with a contaminated needle or other sharp object
- Which leads to direct relaxation of the body in the blood.

Precautions

Transmission-based Precautions for COVID-198

Table 1

Type	Recommendations	Alternatives
Patient placement	See Sections 5.1 and 5.2	Shared toilet facilities to be cleaned regularly (2- 4 hr)
Hand Hygiene	Before and after each patient contact (5 Moments of Hand Hygiene) Before wearing PPE After removing PPE	Use ABHR between patients if hands not visibly soiled
Environmental cleaning	Frequent cleaning 2- 3 times/ day. Water, detergent. Wipe over with disinfectant such as 1:1000 ppm available chlorine or 70% alcohol	Use universal wipes which is a combination of detergent and disinfectant.
Terminal cleaning	Remove all linen, healthcare waste and medical equipment and send for disinfection or discard. Clean with water and detergent. Wipe with disinfectant	Use universal wipes which is a combination of detergent and disinfectant
Patient care equipment	-Dedicated equipment. -Disposable where possible -Shared equipment to be heat or chemical disinfected after cleaning.	None
Linen	Change linen regularly. Send to laundry marked as infectious Temp 65- 70o C cycle	Disposable linen not recommended
Healthcare waste	Healthcare risk waste for secretions (infectious) PPE for handlers (see appendix A)	
Catering	Wash in automated dish washer. No additional precautions required	Wash in hot water and allow to dry.
Patient transportation	Patient to wear face mask during transfer Advise EMS patient has COVID-19 Transfer as a single case	Guidance for EMS and others when transporting patient
Visitors	Ideally no visitors are allowed.	Mother of admitted child or close family members of extremely sick patients should be allowed in with a surgical face mask. They should be instructed on hand hygiene and social distancing
Duration of isolation	Patient should remain in COVID-19 isolation area until discharge; Once discharged, patient to self-isolate for 14 days after first symptoms began (mild diseases) and for 14 days after clinical stabilization (off oxygen, for moderate to severe disease.)	In some countries, resolution of symptoms plus two negative RT-PCR tests for SAR-CoV-2 is required for desolation. Given the shortage of test kits, South Africa has adopted clinical criteria for disease resolution and desolation

Table No.1 Transmission-based Precautions for COVID-19

Roles and responsibilities of managers and staff

The identification and management of suspected COVID-19 patients infected in health facilities depends on all staff and patients to understand and follow appropriate policies and procedures. All staff Hand washing and drinking regularly (ABHR) · Good cough and breathing habits · Community distance. Keep a distance of up to 1.5 to 2m when communicating with other people Laboratory staff Take the appropriate samples and send them to the laboratory for processing · Ensure that samples and other samples are processed and reported on time. Clinic staff Use effective patient management (isolation, isolation, immediate treatment, discharge) · Follow the IPC guidelines carefully · Use IPC equipment as indicated, to avoid unnecessary waste. IPC Team Service Train HCWs on the use of evidence and proper use of IPC Perform IPC ward rounds regularly to ensure compliance. Other relevant groups · Support clinical groups in implementing IPC practices · Ensure proper mechanical cleaning · Ensure that appropriate COVID-19 guidelines are available. Occupational health screening HVW COVID-19 Monitoring Risk Assessment · SARS-CoV-2 Monitoring and Reporting The exceptions include the adoptive caregiver, and family members close to critically ill patients. Any visitors should wear a surgical mask and be taught hand hygiene and coughing, as well as community distances

Types of hand hygiene

Washing hands with soap and water followed by drying · Use of hand sanitizer (ABHR) containing 70% propyl or isopropyl alcohol with · emollient.

Types of PPE

Table 2

Type PPE	Clinical Staff (nurses, doctors, EMS) Providing direct care to COVID-19 patients or patients with respiratory symptoms	Non-Clinical Staff (admin staff, catering staff) coming into distant contact with COVID-19 patients and contaminated surfaces	Non-Clinical Staff (cleaners) coming into distant contact with COVID-19 patients and contaminated surfaces	Patients with Respiratory symptoms	Patients without Respiratory symptoms
Gloves	Non-sterile gloves. Change between patients	Non-sterile gloves. Change when leaving COVID-19 area	Reusable long rubber utility cleaning gloves (ideally up to elbow) Change after completed cleaning contaminated area	None	None
Face cover	Surgical Mask for general care of COVID-19 patients N95 respirator for aerosol generating procedures on COVID-19 suspects/cases	Surgical mask when within <1m of patient with respiratory symptoms	Surgical mask when within<1m of a patient with respiratory symptoms	Surgical mask worn when in contact with others	None
Aprons	Change when visibly contaminated. Discard after aerosolgenerating procedure	Change when leaving COVID-19 area	After each work session (in absence of clinical contact)	None	None
Face shields, or visors, or goggles, or other eye covers	Wash clean, disinfect and reuse	None	Wash clean, disinfect and reuse	None	None

Table no.2 Types of PPE

Type of face Covers

Usually in health care only two types of face masks provide adequate protection for the health care worker, eg face mask and N95 respirators.

Face Masks

Facial masks (surgical, therapeutic) are made of several layers of paper and protect against scratches and drops. These are widely used in health care. Note the following guidelines:

- Whenever the touch area is touched by hands that have not been washed, soaked, soiled, or removed from the face, they will not be contaminated and will no longer be able to protect the active ingredient. They must then be discarded.
- Water masks, untouched and unwashed, can be worn for up to 8 hours.
- COVID-19 patients within the ward provided with COVID-19, where staff members wear PPE, are not required to wear masks.
- Patients with COVID-19 if they are outside a dedicated COVID-19 ward should always wear a surgical mask. The mask can be applied for up to 8 hours.

N95 breathing

N95 Respirators (FFP2, FFP3) are specially designed to filter out small particles and are recommended for use in airway monitoring such as TB, measles or chickenpox. Cheap N95 breathless is recommended to prevent the transmission of drops from the wearer. Note the following guidelines:

- Symptomatic tests should be performed regularly using the N95 respirator (ie when first inserted)
- N95 respirators should be used only once and should be discarded once they have been safely removed. However, as there is a global shortage of N95 respiration, reuse is strongly encouraged and it is best not to have a respirator.
- If HCWs perform aerosol-producing processes (e.g. sample collection) in several COVID-19 patients respectively, they can use the same N95 respiration and eye protection session; they must nevertheless change the pinafore and gloves between patients.
- Since the air outside the N95 respiratory system will be highly polluted by the virusü during the aerosol production process, HCWs must be very careful not to touch the outside surface and must perform careful hand hygiene after removing it.

Reuse

a. Without touching the respirator, lift the lower leg around your neck above and above your head.
b. Remove the top rope. Do not touch the respirator.
c. C) Keep a respirator in a paper bag with your name on it. Do not crush the respirator during installation.Do not try to kill germs with the N95 respirator as this destroys their integrity.Be aware that damaged and exposed respirators may not be reused

Treatment

The COVID-19 Medical Guide Panel (Panel) is committed to revising this document to ensure that health care providers, patients, and policy specialists have the most up-to-date information on good COVID-19 management (see Panel Roster for list of Panel Members) Categories and recommendations updates and updates in the existing guidelines sections are made by working groups of Panel members. All recommendations included in the guidelines are approved by the majority of Panel members (see Introduction for more details on the guidelines' development process).

March 5, 2021

Statement of COVID-19 Treatment Guidelines Panel on the Use of Tocilizumab for the Treatment of COVID-19February 3, 2021, the Panel issued a statement on the use of tocilizumab in the treatment of COVID-19. The statement included recommendations based on the first results report from Randomized, Embedded, Multi factorial Adaptive

Platform Trial for Community-Acquired Pneumonia (REMAP-CAP). Since the release of the statement, the Panel has reviewed the published results of REMAP-CAP and the first open label results, the pragmatic Randomized Evaluation of COVID-19 Therapy (RECOVERY), released on February 11, 2021. Based on this review, the Panel has reviewed its recommendations for use tocilizumab in selected individuals of patients with COVID-19, as described below.The panel recommends the use of tocilizumab (single dosage of 8 mg / kg of body weight, up to 800 mg) in combination with dexamethasone (6 mg daily up to 10 days) in some patients in hospitals showing rapid respiratory reduction due to COVID-19.

These patients are

Newly admitted patients in the intensive care unit (ICU) 24 hours earlier and in need of mechanical ventilation, nonivasive mechanical ventilation (NIV) or high-flow nasal canula (HFNC) oxygen (> 0.4 FiO2 / 30 L / min of oxygen flow) (BIIa); or

Newly hospitalized patients (non-ICU) with rapidly growing oxygen needs requiring NIV or HFNC and significantly increased symptoms of inflammation (BIIa). (Note: The dosage rate for the RECOVERY test for inflammation was the active protein C [CRP] ≥75 mg / L).

For hospitalized patients with hypoxemia requiring standard oxygen therapy, the Panel recommends using one of the following options: remdesivir (BIIa), dexamethasone and remdesivir (BIII), or dexamethasone alone (BI). (see Therapeutic Management of Adult With COVID-19).

There is not enough evidence to determine which of these patients would benefit from the addition of tocilizumab. Other Panel members will also prescribe tocilizumab to patients who show rapid oxygen demand while on dexamethasone and have CRP ≥75 mg / L, but who do not yet need NIV or HFNC, as described above.

Conclusion

The provision of echocardiographic services remains crucial in this critical time of the SARS-CoV-2 outbreak. Working together, we can continue to provide high quality care while minimizing risk to ourselves, patients and the community at large. Careful consideration of 'Who's taking the picture', 'Where's the picture' and 'How to take the picture' has the potential to reduce the risks of transmission.

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