

Know Corona to Defeat Corona

All You Need to Know About Coronavirus

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Introduction: What is Coronavirus?

Coronaviruses (CoV), are amongst the newly emerging virus, which affects zoonoses and transmitted between animals and human beings. In the past, It caused illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV)(2). The SARS was transmitted from civet cats to humans and MERS from dromedary camels to humans.

COVID-19 is a novel CoV strain that was first discovered in 2019, which was not previously reported in humans. This CoV was renamed several times after discovery, first of all, as a newly identified β -coronavirus in Wuhan in late months of 2019. On 12th January 2020, the World Health Organization (WHO) renamed it as the 2019-novel coronavirus (2019-nCoV), and on 11th February 2020 again officially rendered it as coronavirus disease 2019 (COVID-19). On the same day, the Coronavirus Study Group of the International Committee on Taxonomy of viruses of WHO proposed the name SARS-CoV-2 for this virus.

The WHO has declared this to be pandemic and the number of infected patients is increasing exponentially on a daily basis.

COVID-19 appears more contagious than SARS and MERS, spreads by human-to-human transmission via droplets infections or direct contact from person to person. The incubation period ranges from 2 days to 2 weeks (usually 3 to 7 days).

Virus: Little Known Facts:

- The virus is not a living organism, but a protein molecule (RNA) covered by a protective layer of lipid (fat), which, when absorbed by the cells of the ocular, nasal or buccal mucosa, changes their genetic code (mutation) and convert them into aggressor and multiplier cells.
- Since the virus is not a living organism but a protein molecule, it is not killed, but decays on its own. The disintegration time depends on the temperature, humidity and type of material where it lies.
- The virus is very fragile; the only thing that protects it is a thin outer layer of fat. That is why any soap or detergent is the best remedy, because the foam CUTS the FAT (that is why you have to rub so much: for 20 seconds or more, to make a lot of foam). By dissolving the fat layer, the protein molecule disperses and breaks down on its own.
- HEAT melts fat; this is why it is so good to use water above 25 degrees Celsius for washing hands, clothes and everything. In addition, hot water makes more foam and that makes it even more useful.
- Alcohol or any mixture with alcohol over 65% DISSOLVES ANY FAT, especially the external lipid layer of the virus.
- Any mix with 1 part bleach and 5 parts water directly dissolves the protein, breaks it down from the inside.
- Oxygenated water helps long after soap, alcohol and chlorine, because peroxide dissolves the virus protein, but you have to use it pure and it hurts your skin.
- NO BACTERICIDE SERVES. The virus is not a living organism like bacteria; they cannot kill what is not alive with antibiotics, but quickly disintegrate its structure with everything said.
- The virus molecules remain very stable in external cold, or artificial as air conditioners in houses and cars. They also need moisture to stay stable,

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and especially darkness. Therefore, dehumidified, dry, warm and bright environments will degrade it faster.

- UV LIGHT on any object that may contain it breaks down the virus protein. For example, to disinfect and reuse a mask is perfect. Be careful, it also breaks down collagen (which is protein) in the skin, eventually causing wrinkles and skin cancer.
- The virus CANNOT go through healthy skin.
- Vinegar is NOT useful because it does not break down the protective layer of fat.
- NO SPIRITS, NOR VODKA, serve. The strongest vodka is 40% alcohol, and you need 65%.
- Use hand sanitisers with at least 60% alcohol.
- The more confined the space, the more concentration of the virus there can be.
- The more open or naturally ventilated, the less.

Coronavirus and Kidney Damage:

Kidney involvement was a strong and independent predictor of mortality as during the SARS and MERS outbreak, that hints out for the special attention for the kidney involvement with COVID-19 infection as well.

Experience from China and South Korea has shown that it can cause protein leakage in urine in about 30-60% patients and AKI (Acute Kidney Injury) in 15-20% patients. AKI is to multiple factors like dehydration, sepsis and also concomitant use of pain killers especially ibuprofen being indiscriminately used for reducing fever. The kidney damage has been seen in advanced stage of the disease when the patient has multi-organ failure. At that stage treatment is usually supportive in the form of dialysis and if the general condition of the patient improves the kidney functions of these patients will get better. It remains to be seen as to how many of these patients will progress to develop chronic irreversible kidney damage called CKD.

Kidney Patients and Risk of Coronavirus Infections:

Kidney disease is a non-communicable disease (NCD) and currently affects around 850 million people worldwide. One in ten adults have Chronic Kidney Disease (CKD). A bigger concern however is that these patients with chronic kidney disease are more prone to contract Coronavirus infection and develop worsening of kidney damage. This is because they have poor immunity. This also applies to kidney transplant patients as well as those who are on immunosuppression which includes patients with Nephrotic syndrome and SLE. While there is no data as it is too early to speculate, experience from influenza epidemics suggests that these patients are likely to have more severe disease.

The following **10 Commandments** should be religiously adhered to by kidney patients to protect themselves and minimise the risk of contracting a COVID infection.

1. Wash your hands frequently or use an alcohol based sanitiser. This is the single most important step in protecting yourself as COVID is often transmitted by large droplets.
2. Stop Smoking and avoid alcohol intake as this weakens your immune systems further and increases the chances of a fulminant infection if you acquire a COVID infection
3. Control your blood sugars meticulously as poor blood sugar will increase your chances of developing infection because of a weak immunity.
4. Practice Social Distancing: Avoid meeting people and if necessary do meet them but keep the meeting short and maintain a safe distance of at least 3 feet.
5. Keep yourself physically active and do regular workouts at home or in an open park but away from crowds. Physical activity gives a boost to our immune systems. Do regular breathing exercises of the chest or yoga as this bolsters the immunity of the lung.

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6. Eat a healthy diet rich in antioxidants (in consultation with your nephrologist and nutritionist). We should use natural foods rich in probiotics and antioxidants like yoghurt, ginger, turmeric, cabbage.
7. Drink plenty of water preferable warm water. If you sip water you may swallow these viruses into your gut and prevent them from getting into your lungs. The human stomach has acidic pH which destroys bacteria and viruses.
8. Make sure you are vaccinated against Pneumococcal infections as this will help minimise the chances of secondary infection
9. Do not miss your dialysis treatments for fear of Coronavirus. If visiting hospitals for consultation or those visiting Dialysis units please wear masks along with protective eye glasses. Routine wearing of masks for everyone all the time is not advisable. Try asking your physician for a Teleconsultation to avoid/minimise hospital visits.
10. Maintain an extra reserve supply of your medications during this pandemic. If the same brand is not available it is better to go for any generic brand rather than stop the medication altogether. Hoping that all of you follow these precautions and stay safe and healthy.

What are the special precautions to be taken by the patient and his family?

We suggest that patient and his immediate family members take the following precautions to prevent or delay the spread of the coronavirus and limit his personal risk of exposure to it.

- **Wash your hands frequently.**
 - ✓ Regularly and thoroughly wash your hands with soap and water for at least 20 seconds, especially after using the washroom, blowing your nose, coughing, or sneezing, or having been in a public place.
 - ✓ If soap and water are not available, use a hand sanitizer that contains at least 60% alcohol.

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- ✓ Why? The virus can be transferred in bodily fluids, including saliva and stool. Washing your hands with soap and water or using alcohol-based hand sanitizer kills viruses that may be on your hands.
- **Avoid touching your eyes, nose and mouth.**
 - ✓ Why? Hands touch many surfaces and can pick up viruses. Once contaminated, hands can transfer the virus to your eyes, nose or mouth. From there, the virus can enter your body and can make you sick. If possible all right handed persons should use the left hand for such activities
- **Keep space between yourself and others.**
 - ✓ Maintain at least 3 feet of distance between yourself and anyone who is coughing or sneezing.
 - ✓ Why? When someone coughs or sneezes, they spray small liquid droplets from their nose or mouth which may contain virus. If you are too close, you can breathe in the droplets, including the COVID-19 virus if the person coughing has the disease.
 - ✓ NEVER shake used or unused clothing, sheets or cloth. While it is glued to a porous surface, it is very inert and disintegrates only between 3 hours (fabric and porous), 4 hours (copper, because it is naturally antiseptic; and wood, because it removes all the moisture and does not let it peel off and disintegrates), 24 hours (cardboard), 42 hours (metal) and 72 hours (plastic). But if you shake it or use a feather duster, the virus molecules float in the air for up to 3 hours, and can lodge in your nose.
- **Practice good respiratory hygiene.**
 - ✓ Make sure you, and the people around you, follow good respiratory hygiene. This means covering your mouth and nose with your bent elbow or tissue when you cough or sneeze. Then dispose of the used tissue immediately.

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- ✓ Why? Droplets spread virus. By following good respiratory hygiene, you protect the people around you from viruses such as cold, flu and COVID-19.
- **Clean and disinfect your home.**
 - ✓ Practice routine cleaning of frequently touched surfaces (for example: tables, doorknobs, light switches, handles, desks, toilets, faucets, sinks & cell phones) using a regular household cleaning spray or wipe.
 - ✓ Why? Current evidence suggests that novel coronavirus may remain viable for hours to days on surfaces made from a variety of materials. Cleaning and disinfection is a best practice measure for prevention of COVID-19 and other viral respiratory illnesses in households and community settings.
- **Avoid crowds as much as possible, cruise travel, and any non-essential air travel.**
 - ✓ Your risk of exposure to respiratory viruses like COVID-19 may increase in crowded, closed-in settings with little air circulation if there are people in the crowd who are sick.
- During a COVID-19 outbreak in your community, **stay home as much as possible** to further reduce your risk of being exposed.
- **Do not stop your medication.** Some drugs you have may even have beneficial effects on a virus infection.
- **Have an extra supply of medication** so that there is no discontinuation because of shortage

Should you continue your routine follow-ups?

Yes in view of the need to optimise immunosuppression you should continue to be in touch with your treating team. However we suggest that,

- **Avoid hospital visits and** instead use Teleconsults with your Nephrologist for triaging. If going to hospital you should minimize sitting in waiting rooms and time spent in hospitals as much as possible.

Are there any drugs to be avoided?

Yes there are some preliminary data that patients who are on NSAIDS may have a poorer outcome in case they develop COVID infection. Hence in case of flu like symptoms they are advised to take paracetamol.

We suggest patients should continue ACEI or ARBS. Although there has been a concern regarding the use of ACEI and ARBS, it is believed that there is insufficient data at present to suggest withholding these agents. The benefit of antiproteinuric effect and blood pressure control outweighs the theoretical risks that may appear. Various societies, including the European Society of Cardiology, have come out with position statements stating that there was no such evidence of ACE-2 activity and COVID 19 associated mortality.

Strategies for family member and caregivers of patients on Dialysis:

- i. All family members living with patients on dialysis must follow all the precautions and regulations given to patients to prevent person-to-person and within-family transmission of COVID-19, which include body temperature measurement, good personal hygiene, handwashing, and prompt reporting of potentially sick people.
- ii. Patients on dialysis who have a family member or caregiver subject to *basic quarantine* can have dialysis as usual in accordance during the 14-day period.
- iii. Once the family members or caregiver of a patient on dialysis have been converted to a confirmed case, the patient's identity should be upgraded and treated in accordance with the above-mentioned conditions.

Summary

So to sum up, kidney involvement seems to be frequent in this infection, and AKI is an independent predictor of mortality. The impact of this infection in those with chronic kidney disease has not been studied but these patients are at high risk of severe infections. The risk is proportional to the degree of immunosuppressive medications that they are taking. The management of patients on dialysis who have been suspected to have been in contact with COVID-19 should be carried out according to strict protocols to minimize risk to other patients and healthcare personnel taking care of these patients.

The best and only way to Save Your Kidney from the virus is to prevent from getting Infected in the first place.