

Is this the last Pandemic, or the beginning?

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“SARS-Co-2 virus has the potential to unlock receptors on the inner lining cells of the respiratory system of humans hosts, through its glycoprotein spike, enter the cells surreptitiously like a rogue and replicates within the human cells not alerting our immune system.”

We have transformed our lifestyles and the environment, for better comfort and wellbeing, paying less consideration to the animals, other living beings, including our forests, making them our targets for slaughtering and destruction, respectively.

Our intended future goals are living in better competitive modern houses, creating better comforting lifestyles, and thereby adding more carbon dioxide to our ozone layer in the troposphere, causing more greenhouse effects:

farming animals for our food, and increasing the methane gas emissions to the atmosphere, deforestation causing destruction to vast number of resources, products, services we take from it. Direct human causes of deforestation include logging, agriculture, cattle ranching, mining, oil extraction and dam -building.

All these human actions have brought in health issue, and our inbuilt solid immune system seem to have deteriorated and prone to infections.

A significant example is that people after being vaccinated against the COVID-19 a fair percentage of them have got re-infected with variants. Over 350 doctors and medical workers in Indonesia have



Pangolin seems to be intermediary animal that transferred the SARS-Co-2 virus from bats into humans.

tested positive after having the Chinese-made COVID vaccine having tested positive for the virus, Reuters reported. It is possible that the Sinovac was not effective against the Delta variant, or due to breakdown of the immune system.

We have so far hurdled over the previous epidemics such as SARS, MERS, Ebola, avian influenza, and swine flu, but the present COVID-19 and its variants gripping the world have brought catastrophe and misery to the whole world, killing 1.7 million people worldwide this year from Covid-19, and 81 million cases have been recorded and the spread of the coronavirus has been unrelenting in many countries.

The WHO officially say that this pandemic is “not necessarily the big one” said the head of the emergencies program, Michael Ryan, and his words may come as a shock.

The writer of the article, “Another pandemic may still be ahead of us. But what could it be?” Lucian Stein, written recently open our eyes to an unsettled situation for mankind.

The pandemics in future will be outbreaks of animal to human transmission as had occurred in COVID-19 infection in Wuhan.

Acquiring a vegetation form of eating habits may be the ultimate solution to avoid humans getting such viral or bacterial ‘jump over’ diseases from animals.

Leaders have spoken of COVID-19 being a “once in 100 -year event,” but the health experts are hesitant to believe and less complacent but believe that animal-to- human transmission cannot be stopped and we have come to live with it.

Not only there be animal to human jump diseases, but also the Nipah virus infection can also cause severe disease in animals such as the pigs, resulting in significant Human-to-human transmission, have been reported.

Nipah virus is a zoonotic illness, meaning an infectious disease that jumps from a non-human animal to humans.

Zoonotic illness may be bacterial, viral, or parasitic and may spread among humans through direct contact or through foods, water, or the environment, from animals.

Again, the solution would be to stop slaughtering animals like pigs for human consumption, and the solution is so simple.

In the ancient world when travelling was restricted due to the less necessity, spreading of any infectious was not an issue. Today, with globalization of trade and businesses, people are more travelling within their countries and overseas quite freely, the chances of spread and contaminating people is much higher and until people in all countries are treated with medications and vaccines, eradication is a problem. There is a more chance of contracting any illness through food by visiting food houses selling meat products. Fortunately, hot cooked foods seem to carry less chance of spreading disease, unlike cold foods like the salads and desserts. It is also documented that the consensus is that viruses are more resistant to heating, and the myth that drinking warm water kills the virus stand to no reason.

Due to deforestation and destruction of ecosystems, the animals lose their dwelling territories, and such disruptions will bring animals closer in contacts with the humans.

A good example is that in Sri Lanka due to the man destroying the forests belong to the elephants, there is many interactions between humans and the elephants, but fortunately the elephants do not carry germs that are transmissible to the humans. Nevertheless, elephants can carry human tuberculosis, a bacterial disease that can lead to infectious causes of human deaths worldwide and responsible for a global pandemic.

Fortunately, tuberculosis is eradicated through vaccinations in the past and not an issue in the developing countries, today.

Other diseases that can infect humans from elephants are hemorrhagic septicemia, trypanosomiasis, piroplasmosis, foot and mouth disease, among others.

If we anticipate future pandemics like the present one, what lessons have we learnt to take action to minimize future pandemics and their associated challenges.

Every animal species hosts unique viruses that have specifically adapted to infect them. Over time these viruses have jumped to humans-these are known as 'zoonotic' viruses.

As we clear the forests where animals dwell, with encroaching into their land by deforestation and destruction, man comes closer and have contact with such animals. Viruses can jump from animals to humans, just the same way that humans infect each other. Such contacts could be due to eating the meat of those infected animals, or through body fluids like mucus, blood, feces, or urine.

It is rare for a virus to jump to another species of animals.

It is strange that no researcher or virologists has so far found the origin of the source of the animal that originated the transmittable COVID-19.

The SARS-CoV-2 pandemic has opened our eyes to find out and understand how viruses jump from animals to people, a process as already mentioned as zoonotic spillover.

A wild-animal trader in Wuhan caught the strange new virus from a frozen pangolin, and a lab worker studying bat viruses slipped up and sniffed the air under her biosafety hood.

So, the outbreak has been tentatively associated with a seafood wet market in Wuhan, China, where the sale of wild animals may be the source. It is known that bats are probable reservoir hosts for SARS-Co-2, but the intermediary source that may have facilitated the transfer to humans is yet unknown. It is presumed that the multiple lineages of pangolin coronavirus and their similarities to SARS-Co-2 suggests that pangolins may be the transferring host.

Virus-receptor interactions

Viruses need to unlock receptors of the host's cell surfaces, in the respiratory tract of the humans in COVID-19 infection, and these viruses

have the potential to replicate in the host's cells without alerting the host's immune system.

The viral attachment protein called the spike protein is the leading mediator of viral entry, can be viewed as the "key" that unlocks host cells by interacting with the "lock" the receptor on the surface of the human host.

It is the problem now for the Scientists to work for better understanding the molecular steps how to prevent viruses unlocking human receptors and trespassing into human cells and further replicating.

Such viral interactions with human host cells in viral pathogenesis and finding new antiviral therapeutics may be the future hope of preventing and controlling new outbreaks.

This situation alone proves that the human's comfort-seeking lifestyles working against the ecosystem is a factor to reduce the functions of the host's immune system, which has been strong over the years.

How can we boost the immune system to stop virus-receptor interactions?

Currently, other than green veggies, along with adequate sleep, including supplements, exercise and juicing, vaccines are the only therapeutics that will specifically boost our immune system to fight any viral infection.

Professor Pellegrini an infectious diseases expert at the Walter and Eliza Hall institute puts it well. He says, "[Vaccines] boost the capacity of the immune system to fight an infection, because you're exposing it to a pathogen that it will recognise next time,"

You need to keep your immune system and the body-healthy to give it the best chance of fighting an infection.

Your immune system is composed of lymphatic cells producing antibodies.

The first line of defence is what is called the **'innate immune system.'**

Every cell in your body has signalling proteins called *interferons*. They are antiviral molecules waiting to attack intruders.

Interferon is a member of the class of protein molecules known as *cytokines*. Cytokines plays an important role by blocking viral replication. This triggers an inflammatory response producing an elevation on the body temperature, activates natural killer cells (NK cells) and macrophages.

These NK cells are a type of white blood cells-kill tumour cells, or cells infected with a virus, detecting, and controlling early signs of cancer. So, building a strong immune system is the key to minimise viral infections. A brisk walk for over an hour daily boosts your immune system and inspires healthy living.

Our future hopes, dreams are shattered with fears, and the feel ahead remain negative. People are more hunker down within their homes due to restrictions by the authorities, sitting and watching TV, and not knowing where the next viral cluster would occur.

Developing countries like Sri Lanka suffers more than the developed countries like Australia, where we live.

When a patient falls ill, the family would contact their doctor. The doctor will request the patient to be brought to his surgery, or direct to the hospital.

People without motor vehicles depend on three wheelers for their transport. The three-wheeler drivers refuse to visit homes on calls for patients to be taken to the doctor or the hospital.

The end story is that the patient dies, and such deaths are not recorded in the day-to-day statistics.

This is one of the sad stories from our country of birth, I hear.

I hope this article was useful. Stay safe.