

# From a professor of pharmacy at U of Toronto sent this clearly worded update to his family

For this pandemic there's a greater chance of survival for those getting infected 3 months later like June 2020 than those who got infected 3 months earlier say February 2020. The reason for this is that Doctors and scientists know more about Covid-19 now than 3 months ago and hence are able to treat patients better. I will list \*5 important things\* that we know now that we didn't know in February 2020 for your understanding.

1. COVID-19 was initially thought to cause deaths due to \*pneumonia- a lung infection\*- and so Ventilators were thought to be the best way to treat sick patients who couldn't breathe. \*Now we are realizing that the virus causes blood clots in the blood vessels of the lungs\* and other parts of the body and this causes the reduced oxygenation. Now we know that just providing oxygen by ventilators will not help but we have to prevent and dissolve the micro clots in the lungs. This is why we are using drugs like \*Aspirin and Heparin ( blood thinners that prevents clotting) as protocol in treatment regimens in June 2020. \*

2. Previously patients used to drop dead on the road or even before reaching a hospital due to reduced oxygen in their blood- OXYGEN SATURATION. This was because of \*HAPPY HYPOXIA\*- where even though the oxygen saturation was gradually reducing the COVID-19 patients did not have symptoms until it became critically less, like sometimes even 70%.  
\*\*Normally we become breathless if oxygen saturation reduces below 90%. \*\*This breathlessness is not triggered in Covid patients and so we were getting the sick patients very late to the hospitals in February 2020. Now since knowing about happy

hypoxia we are monitoring oxygen saturation of all Covid patients \*with a simple home use pulse oximeter and getting them to hospital if their oxygen saturation drops to 93% or less\*. This gives more time for doctors to correct the oxygen deficiency in the blood and a better survival chance in June 2020.

3. We did not have drugs to fight the corona virus in February 2020. We were only treating the complications caused by it... hypoxia. Hence most patients became severely infected. ``\*\*Now we have 2 important medicines FAVIPIRAVIR & REMDESIVIR\*\*``

These are ANTIVIRALS that can kill the corona virus. By using these two medicines we can prevent patients from becoming severely infected and therefore cure them BEFORE THEY GO TO HYPOXIA. This knowledge we have in JUNE 2020... not in February 2020.

4. Many Covid-19 patients die not just because of the virus but also due the patient's own immune system responding in an exaggerated manner called \*CYTOKINE STORM\*. This stormy strong immune response not only kills the virus but also kills the patients. In February 2020 we didn't know how to prevent it from happening. Now in June 2020, we know that \*easily available medicines called Steroids,\* that doctors around the world have been using for almost 80 years \*can be used to prevent the cytokine storm in some patients\*.

5. Now we also know that people with hypoxia became better just by making them lie down on their belly- known as prone position. Apart from this a few days ago Israeli scientists have discovered that a chemical known as Alpha Defensin produced by the patients White blood cells can cause the micro clots in blood vessels of the lungs and this could possibly be prevented by a

drug called Colchicine used over many decades in the treatment of Gout.

So now we know for sure that patients have a better chance at surviving the COVID-19 infection in June 2020 than in February 2020, for sure.

Going forward there's nothing to panic about Covid-19 if we remember that a person who gets infected later has a better chance at survival than one who got infected early.

Let's continue to follow precautions, wear masks and practice social distancing. Please distribute this message, as we all need some positive news...