

Prof. Francesco Piantelli, former professor of Biophysics at Siena University, Italy gives overview of his understanding of the Corona Virus

Analyzing the trend of the propagation of Covid-19, I would like to try to interpret the different situations that occur in the various districts, obviously starting from China which seems to be its origin. I first make a restricted analysis of the behavior of Covid-19 in the individual infected, from which at least three different possibilities seem to emerge after the infection, now certainly detectable through the screening of the swabs.

There are at least three differences between the infected:

1. **completely asymptomatic**
2. **sore throat and fever (around 3-4 days)**
3. **very consistent fever with various manifestations (I have found quite sporadic news about heavy and even serious consequences to the central nervous system with probable origin from the eye window) of which the most common and perhaps the most dangerous, seems to be a strong difficulty in breathing indicated as Bronco-pneumonia disease, after another 4/5 days. A similar behavior certainly linked to the virus suggests three different behavioral situations, by the infected, generated by their different conditions from case to case, even if the origin is the same: the virus.**

In particular:

The **-1-** exhausts in about 14 days with the appearance of specific antibodies (type IGm, IGg and perhaps others) without any detectable consequence.

The **-2-** remains active for about 3/4 days and runs out after the fateful 14 days.

The **-3-** after an incubation that lasts on average between 5 and 9 days, a reaction breaks out with serious consequences in particular with serious breathing difficulties (drowning effect). There is talk of Bronco-pneumonia disease in many cases lethal.

These really huge differences in behavior from a first analysis seem to be related to age.

The **-1-** In children (under 10 years) seems to prevail.

In young people up to about 30 years old always seems to preponderate **-1-** (asymptomaticity) but also **-2-** occurs quite often.

In people with older age there are all three possibilities and with increasing age there is a sharp increase in the **-3-** and consequent increase in lethal cases (for people who are around 60 years of age, from 10 % to 30% approximately).

This seems the picture we have before us and makes it possible for an attempt to analyze the various causes.

It seems clear that the virus acts, in addition to age, in a different way according to the different initial conditions of the patients. Analyzing the -3- it can be seen that the worst consequences, even if dependent on the infection, do not seem to be caused directly by the virus, but rather by an abnormal reaction of the immune system of the infected person. In fact, it has been found that there is an overproduction of IL6, a protein that triggers inflammation that causes thickening of the tissues and creates severe breathing difficulties in the lungs, which generally require hospitalization in intensive care units, with intubations and broncho-pulmonary mechanical ventilation systems. If these are the possibilities, it seems clear enough that an abnormal trigger of IL6 production must be attributable to activations, even in succession and therefore multiple, of immune responses in the life of the infected person, which can be connected to health causes but, I think, above all to pollution agents with which the infected person came into contact in life. If this is the picture through the trend of the relationship between the three reported possibilities, it could allow an assessment of the pollution existing in the various districts. A first suspect comes from the analysis of the trend in the various countries that are suffering from the infection.

If the analysis I made has any validity, we may have the possibility of establishing which are the best means to combat -3- also pharmacologically. It is clear that the greatest danger is represented by the abnormal increase in IL6 and here it is possible to intervene pharmacologically with known drugs. See reports from the most massive battleground field, namely China, which is managing after enormous efforts to dominate the spread of contagion on its territory.

Since there is no vaccine and specific drugs to fight the virus directly, I immediately think of Cortisone and some immune system suppressants. But I also have the information of some drugs (less drastic and dangerous than a simple immune system suppressor that can cause a dangerous explosion of dormant or hidden bacterial diseases) such as those that reduce the immunological response without canceling it. In this group we find several, especially those that act on rheumatoid arthritis or on exanthematic diseases.

One in particular (the ancient diphosphate chloroquine produced since 1947 and used to fight against malaria) seems to be the most effective because it has shown two types of action in China, an antiviral (it acts on some carbohydrate molecules present on human cells by inhibiting the replication of the virus) and one that controls the abnormal production of IL6 (it seems to act in a couple of days and if used at the beginning it can also prevent the hospitalization in intensive care of the infected). Of course, it is better to avoid the infection by using common sense and the means available, FFP3 type masks, gloves (do not touch eyes, nose and mouth before having washed your hands well) eliminate all possible contact with the infected (even suspect). The virus should stop with increasing temperature. Currently on surfaces, in particular metallic, it seems to survive a maximum of 12 hours. Simple detergents eliminate it.

The Spikes, which have been found above the virus, seem to exhibit many affinities with receptors present on the surface of a human cell and this partly explains the great contagious activity, which differentiates it from a normal influence.

cordiali saluti
Francesco Piantelli