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Opinion

COVID-19: Its Origins and More About the Pandemic

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Abstract

The struggle between humans and infectious diseases is undoubtedly linked to the very origin and evolution of civilization. The objective of this research was to outline the possible origin of the new coronavirus officially known as SARS-CoV-2, which causes COVID-19. A series of aspects are presented regarding the possible origin of this pandemic, probable theories about how this virus spread to humans, as well as elements about what we know and don't know about the new coronavirus. The conclusion is that it is a highly infectious entity with a high probability of zoonotic transmission, with bats and the mammal known as the pangolin standing out as potential reservoirs. However, the possibility of laboratory synthesis of this virus should not be entirely ruled out. Therefore, we do not know if the virus will become endemic, recurring year after year, or eventually be controlled.

Keywords: Coronavirus, COVID-19, Origin, Pandemic, Zoonotic

Infectious Entities: Their Origin and Evolution

The struggle between humans and infectious diseases dates back to the very beginning of civilization [1]. Throughout history, humanity has suffered the scourge of countless entities of varied etiological diversity (viral, bacterial, fungal and parasitic), which have sown death and disability among millions of inhabitants of the planet [1-4]. The increase in re-emerging and emerging diseases in recent decades has greatly complicated the epidemiological picture worldwide [3,5,6], where the occurrence of several epidemic and pandemic outbreaks has been evidenced, with marked repercussions on the health of humans and other animals [7-10]. It must be taken into account that this increase in infectious entities has not been, nor is it a coincidence, but the consequences of poor human management of ecosystems [4,10,11]. The current situation that the planet is experiencing due to the new coronavirus is one more effect, derived from the poor management of anthropogenic activity, accumulated over thousands of years [11-13].

The new coronavirus (2019-nCoV) identified on December 31, 2019 in Wuhan, China, currently officially known as SARS-CoV-2, causes COVID-19. Furthermore, this virus is the first of its family to be declared a pandemic by the World Health Organization (WHO) on March 11, 2020 [14] Global epidemiological studies on coronaviruses (CoV) carried out for 15 years have shown that bats in Asia, Europe, Africa, America and Australia are reservoirs for a wide variety of viruses, harboring and spreading these infectious agents quite easily, which increases their transmission capacity [15-17].

The truth is that we still don't know if the virus will become endemic, recurring year after year, or if it will eventually be brought under control [18-24]. Nor is it preventing both the disease and the infection. The pace of vaccination is slow, driven by economic interests and uneven distribution, which has led to the emergence of new waves and the development of mutations that could hinder the effectiveness of current vaccines [18,19,21,24].

Probable Theories as to How This Virus Spread to Humans

a) The COVID-19 virus has been transmitted directly from a bat to humans. However, the structure of the virus that is in question and that genetically matches 96% of the current "COVID-19" virus cannot bind to the "Angiotensin-Converting Enzyme" (ACE) type 2 in the lungs. However, the virus needs this enzyme in order to penetrate lung cells (and heart, kidney and intestinal cells) and destroy them.

b) A COVID-19 virus jumped to humans from the pangolin, a hairy mammal from Malaysia that was illegally imported to China and initially did not cause disease. As part of consecutive human-to-human transmissions, this virus has adapted to general human conditions through mutation or adaptation, and was eventually able to attach to the ACE2 receptor, and penetrate cells, which "started" the pandemic.

c) There is an original strain of these two viruses COVID-19, which unfortunately so far has not been detected. It is a synthetic laboratory virus, because this is exactly what was investigated and the biological mechanism of the excitation, and described in detail in 2016.

d) The virologists in question denied this possibility, of course, but they also cannot rule it out in the "Nature Medicine" just published: "The proximate origin of SARS-CoV-2" by Kristian Andersen [25].

What is special about these facts is that coronaviruses can live together with the Ebola virus in the same "bat" without the bat getting sick. On the one hand, this is scientifically interesting, because perhaps immune mechanisms can be found that explain why these bats do not get sick. These immune mechanisms against coronaviruses and Ebola virus could provide important information for *Homo sapiens*. On the other hand, these facts are worrisome, because one can imagine that due to high and active genetic recombination, a supervirus can form, which has a longer incubation period than the current COVID-19 virus, but with similar lethality to the Ebola virus [26,27].

We Know

That it is an aggressive virus;

a) That the average incubation period lasts five days; the maximum incubation period is not yet clear;

b) That asymptomatic carriers of COVID-19 can infect other people, and that this virus is "extremely contagious" and "extremely resistant" (A. Lanzavecchia);

c) We know the populations at risk;

d) That in the last 17 years it has not been possible to develop a vaccine or a monoclonal antibody against coronaviruses; 5. that it has never been possible to develop a vaccine or a monoclonal antibody against coronaviruses;

e) That it has never been possible to develop a vaccine against any coronavirus;

f) That the so-called "flu vaccine" has minimal effect, contrary to popular publicity.

What We Do Not Know

i. Whether or not immunity exists after passing an infection. Some data indicate that humans can develop class G immunoglobulins after day 15, which should prevent re-infection for the same virus. But this has not yet been definitively proven;

ii. How long a possible immunity could protect;

iii. Whether this COVID-19 virus remains stable or whether a slightly different COVID-19 spreads again worldwide in autumn, analogous to the usual flu wave, against which there is no immunity;

iv. If higher temperatures in summer help us because the COVID-19 casing is unstable at higher temperatures. It should be mentioned here that the MERS virus spread in the Middle East from May to July, when temperatures were higher than we have ever experienced;

v. How long it takes for a population to become so infected that the R-value is <1: If 1 million people in Zurich are tested at a given time, COVID-19 12% to 18% are said to be positive at this time. To deprive the pandemic of its pandemic character, the R-value must be <1, i.e., about 66% of the population must have had contact with the virus and developed immunity. No one knows how long, how many months it will take until the infection, currently assumed to be 12% to 18%, has reached 66%! But it can be assumed that the spread of the virus from 12% to 18% to 66% of the population will continue to generate seriously ill patients.

vi. So, we do not know how long we will be dealing with this virus. Two reports, which should not be publicly available (US Government COVID Response Plan and a report from Imperial College London) independently arrive at a "shutdown" phase of up to 18 months;

vii. And we do not know if this virus will occupy us epidemically / pandemically or perhaps even endemically;

viii. We still do not have a recognized and widely applicable defined therapy, and we have never been able to present one of these therapies in the case of influenza.

Perhaps the authorities and the media should put the facts on the table instead of presenting every other day reports of a seemingly successful vaccine, and that is still a long way off.

Conclusion

It is a highly infectious entity with a high probability of zoonotic transmission, where bats and pangolins stand out as potential reservoirs, but the possibility of synthesizing the virus at laboratory

level should not be ruled out, so we do not know if the virus will become endemic, recurrent year after year or finally be controlled; what we do know for sure is that we need the joint efforts of all human beings living on this planet to be able to win the battle against this new coronavirus.

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Declaration of Conflicting Interest

There is no conflict of interest involving the authors.

Ethical Approval and Informed Consent Statements

Not applicable.

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