

## Editorial

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### Warning: Ebola arrived in Columbus land

A few years ago, only some students of geography knew that Ebola was the name of a small river in the Democratic Republic of Congo. In 1976, in the village of Yambuku, a man died of a rare hemorrhagic fever which alerted the scientific world. Rumor has it that this man bought a fruit bat and later cooked and ate it, along with his family; some days later, all of them died. The cause of these deaths was a virus that was later called the Ebola virus (1). After this event, the epidemic spread throughout the town and then to other places. Today, about 4 000 people worldwide have been killed by the virus, including one case in the United States, two in Spain and one in Brazil. Only 1 in 10 infected patients survive and poor calculations estimate 20 000 people infected, especially in the West African republics.

A virus is a DNA (deoxyribonucleic acid) or RNA (ribonucleic acid) particle, no longer than 300 nanometers, so it is only visible with electron microscopes. The virus cannot be classified as living or dead substances because they have no brain, gastrointestinal tract, nor organs; they are simple agents that replicate at an incredibly rapid speed and destroy the living cells that they touch (2,3). Viruses may date back to 4 500 million years, when the Earth was formed, and over time, they became infectious pathogens of plants and animals, including humans. Some are common and relatively benign, as in the case of the flu, herpes, warts, etc., but others are aggressive and deadly; for example, in 1919, the Spanish flu virus caused about 20 million deaths, while HIV/AIDS has caused more than 30 million so far.

The Ebola virus is a natural host of bats that eat fruits, since they do not develop the disease. When a sensitive animal eats fruit contaminated by bat saliva, the disease spreads (4); for example, gorillas are susceptible to this virus and about 8 000 have died because of it.

Ebola epidemic was described by the World Health Organization (WHO) as extremely serious and has only been compared to AIDS, which erupted in the eighties. Ebola propagation has been overwhelming despite medical efforts (5). Infection occurs only by direct contact, not by air. The virus is found in body fluids such as saliva, feces, urine, blood, vomit, semen, sweat, tears, etc., and is also transmitted by consumption of contaminated meat.

Its symptoms are clear and appear from 2 to 21 days after contamination; the first symptoms are a simple headache and lack of appetite, followed by fever, vomiting, stomach pain, diarrhea, muscle and joint pain, decay, generalized bleeding in gums, nose, rectum, and

finally, death. Only 15% of the population is immune to the disease because of natural defenses (6).

At the conference entitled “How and when will mankind disappear?”, presented at the XVIII Meeting of the Latin American Association of National Academies of Medicine, in Spain and Portugal (ALANAM, by its acronym in Spanish) (7), one of the possible answers to this question was the possible arrival of a terrestrial or extraterrestrial virus that cannot be cured.

What have health authorities done against the Ebola virus? The most affected African countries claim that the West has not done enough; however, the International Red Cross, Medecins Sans Frontieres and WHO have sent 3 000 experts to the most affected countries —Guinea, Sierra Leone, Senegal, Liberia, Zaire, Congo and Nigeria— to face the emergency. All passengers leaving these countries are examined at destination, go through follow-ups and are declared Ebola free if, after 21 days of stay in possible infection places, they show no symptoms. Although an army of brave doctors and virologists work tirelessly to find a cure and a vaccine against this disease, nothing really effective has been found so far (8).

In the United States, two promising drugs have been developed from monoclonal antibodies extracted from laboratory mice that have been contaminated with Ebola RNA: ZMpp and TKM.ebola. Also, a vaccine made from modified vesicular stomatitis virus is being studied, while tests are being made to remove the VP30 gene, responsible for virus replication (9,10). There are several institutions that contribute to this research: the World Bank allocated 400 million dollars and the International Monetary Fund provided 130 million dollars for emergency financial assistance. All countries of the world are on high alert against this scourge, which extends exponentially.

It is important to note that part of the text of this editorial has been published by its author, Dr. Felipe Coiffman, on the website of Academia Nacional de Medicina de Colombia (11) and its reproduction is authorized.

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