Cuban science making things difficult for Covid-19

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As of Wednesday, Cuba had not reported any death due to coronavirus. And there have been eleven death-free days already. Irrefutably, this is the result of the efficiency of an action protocol followed by the country as well as the general measures taken by the island.

Such action protocol foresees the monitoring, control and better handling of positive-tested patients as well as the safety of health professionals and citizens in general.

The best scientific experiences lead Cuban experts in the combat against SARS-CoV-2. These actions are permanently updated with the latest scientific breakthroughs and the expertise of our scientists and health personnel in particular.

Even though there is no cure or vaccine for the treatment of Covid-19 just yet — a propos of the decrease in the case fatality rate in Cuba due to coronavirus — is worth mentioning some of the drugs with proven effectiveness in this combat.

Cuba is engaged in the development of twenty clinical trials, with special focus on drugs meant to regulate or fostering the body´s immune response.

Biomodulina T is one of them. This is a biologic immunomodulatory in use for more than two decades now in the Cuban medical practice. At present, it is being used to treat infected individuals and to carry out precautionary protection of high risk groups.



Totally natural and made of specific sections of the bovine thymus, its action stimulates the production of T lymphocytes and strengthens the differentiation of the thymus´ lymphoblastoid cells, one of the main glands of the immune system.

This injectable compound — produced by the Bioproducts National Center (BioCen) — was introduced in the combat against Covid-19 from April 3 on and its application today covers more than 5,000 senior citizens in isolation centers for travelers and nursing homes.

Another drug is ***Heberón*** (Recombinant Human Interferon Alpha-2B).

Its use, especially in aerosol form, has prevented several patients from being in serious condition. Such drug is made by the Center for Genetic Engineering and Biotechnology along with BioCen.



Interferón, as it is known worldwide, is used preventively in vulnerable groups and Covid-19 patients, acting as an antiviral especially in the early stages of infection. Interferons are molecules produced by the body itself against virus attacks and are the first response of the immune system to fight the disease.

Cuba also uses the new drug ***CIGB 2020 Immunopotentiator***, which is intended to boost the immune system, for nasal and sublingual delivery. The goal is to stimulate the innate immune system locally, where the virus enters the body.

This vaccine candidate is still under consideration with promising results from the CIGB, and they plan to conclude the investigation by mid next month.

On the other hand, the ***CIGB-258 peptide*** is another drug used in this battle whose goal is to regulate hyperinflammation that occurs in advanced stages of the disease.

For about two years, they have been working in its use to treat chronic autoimmune inflammatory diseases. It is already in phase II of the clinical trial.

To control systemic inflammation, Cuba is also using the anti-CD6 monoclonal antibody or ***Itolizumab***, immunomodulator applied in advanced stages of the disease, contributing to a high survival rate in patients by stopping in time the consequences of the cytokine storm.

This humanized monoclonal antibody, created at the Center for Molecular Immunology (MIC), was developed for the treatment of lymphomas and leukemia. It is capable of blocking the spreading and activation of T lymphocytes, behaving as an immunomodulator by reducing the secretion of a group of mediators of inflammation, known as proinflammatory cytokines.

The aforementioned drugs shall be approved by the Ministry of Public Health and the *BioCubaFarma* business group to treat this pandemic, and their positive impact has been highlighted many times by the Cuban President Miguel Díaz-Canel Bermúdez.

Despite the nation´s hardship as a result of the economic blockade and the Helms Burton Act — both imposed on Cuba by the US government — “the scientific result achieved has given the country tremendous visibility and prestige, as a paramount element in this battle,” pointed out the Cuban head of state.

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