https://doi.org/10.35839/repis.5.2.1033

Cocirculation and Coinfection of COVID-19 and Tropical Pathogens Endemic to Latin America: Chagas Disease

Cocirculación y Coinfección de COVID-19 y Patógenos Tropicales Endémicos de América Latina: Enfermedad de Chagas

Chagas disease, a neglected parasitic infection, caused by the kinetoplastid protozoan Trypanosoma cruzi. This regional pathology endemic to Latin America is of particular concern due to its potential to cause cardiac and gastrointestinal complications, among others, in different clinical and epidemiological scenarios, which could potentially increase susceptibility to Coronavirus disease 2019 (COVID-19). There are estimates that there are more than one million people worldwide with chronic chagasic cardiomyopathy. These need special considerations in the current co-circulation of SARS-CoV-2 virus, which causes COVID-19, and T. cruzi, because of the potential impact of COVID-19 on the heart, but the pandemic also affects access to treatment for people with acute and chronic indeterminate Chagas disease (1-2).

Immunosuppressed patients are at increased risk of becoming severely ill with COVID-19, especially those with aggressive underlying diseases, active immunosuppressive therapy, or lymphopenia, among other conditions studied. Excessive production of cytokines, such as interleukin-6 (IL-6), during acute COVID-19 infection causes significant tissue damage, particularly in the lungs, but also in other organs. This intense inflammatory process of COVID-19 in immunocompromised Chagas disease patients could potentially influence disease progression and latently trigger reactivation of Chagas disease due to both viral interference of the infection (3-4).

It is therefore still advisable, especially in the context of the pandemic, to screen pregnant women, babies born to HIV-positive mothers and anyone about to receive immunosuppressive drugs. Screening of blood donations also remains essential. Patients presenting with clinical syndromes suggestive of Chagas disease should also be screened to guide evaluation and possible anti-Chagas treatment. Pregnant women from countries in which Chagas disease is endemic, as it would be from any Latin American country, should also be screened to assess the possibility of maternal-fetal transmission. Depending on the circulation of SARS-CoV-2 in the community and local guidelines, widespread control of Chagas disease in symptom-free individuals from endemic countries may be postponed until it can be safely performed; it is understood that, even if deworming is indicated, it can generally wait until the patient can go for laboratory testing and follow-up visits without significant risk of exposure (1).

If you have recently contracted Chagas infection, you should seek deworming treatment for Chagas disease as soon as possible so that it will be more effective in eliminating the infection (5). Chagas disease may be an important uninvestigated cause of death in regions with a higher incidence of Chagas disease and should be considered. Chagas disease can manifest as a severe and potentially fatal disease. In turn, it can act as an opportunistic infection in patients with immunodeficiencies, such as HIV/AIDS infection.

The COVID-19 may cause lymphopenia, which could blunt the anti-T. cruzi immune response, similar to what is seen in HIV patients and this should be studied further (1). Elderly patients with Chagas disease are also prone to develop dyslipidemia, hypertension, diabetes, and other comorbidities, so they have a higher group risk for the development of severe forms of COVID-19 (5).

We believe that Chagas disease may be an important and underestimated risk for developing severe COVID-19. Especially in those with chronic Chagas disease with cardiomyopathy that may be prone to worse outcomes, especially in endemic areas with still insufficient studies on Chagas disease and SARS-CoV-2 coinfection, which has been reported (2).

Thus, Chagas disease is one of the many endemic regional pathologies, causing febrile syndrome, when presented acutely, that must be considered in the differential diagnosis with COVID-19. However, the impact of this co-circulation of COVI-19 and co-infections with malaria, dengue and other regional tropical conditions is already being evaluated (6,7), which should be considered not only in the differential diagnosis, but also in the possibility of co-infections, with their potential implications, yet to be better defined.

Finally, being COVID-19 an emerging disease (8), even after one year (9), there is still much to be understood not only at the epidemiological and clinical level, but also in its pathophysiology and immune response, which includes the interaction with other viruses and other pathogens, with which coinfections may exist (7,10).

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Conflicts of Interest: None.

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