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Perspective

Malarial Pathogoenosis and Raise in the Risk of Infectious Diseases

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ABOUT THE STUDY

Malaria is still a major public health concern worldwide with an estimated 229 million infections and 409,000 fatalities from the disease in 87 countries with endemic malaria in 2019. Malaria cases decreased by 40% in the Region of the Americas, but recent progress in the region has been hampered by the significant rise in malaria cases in Venezuela, which went from having about 35,500 cases in 2000 to over 4,67,000 with 403 deaths by 2019, accounting for more than half of the reported cases and more than 70% of malaria deaths in the region. According to data from Venezuela for 2019, *Plasmodium vivax* caused the majority (77.3%) of malaria cases there, followed by *Plasmodium falciparum* (16.2%) and mixed (*P. vivax/P. falciparum*) malaria (6,5%).

Malaria is frequently linked to outdoor occupations, such as mining and agriculture, where people are also exposed to other vector-borne diseases. Although fever is frequently considered to be caused solely to malaria in malaria-endemic countries, there is evidence of widespread over diagnosis in persons presenting with severe febrile illness, particularly in those living in low-to-moderate transmission areas and in adults. Dengue (DENV) and Chikungunya (CHKV) virus cases have increased and spread unexpectedly in several tropical nations in recent years. Several of these studies show that malaria and these arboviruses, as well as other febrile icteric disorders such leptospirosis (LEP) and viral hepatitis, are all present at the same time.

Coinfections with many pathogens complicate diagnosis and alter the clinical course of disease and care; also, the clinical presentation of malaria, when combined with superimposed endemicity, can lead to coinfection underdiagnoses. Although there is little information on the clinical result and precise interactions of these pathogens in coinfections, it is presumed that several infections exacerbate the malaria course. Any delay in diagnosing or initiating treatment for any of these infections could be fatal.

The epidemiological surveillance and malaria control programs in Venezuela have deteriorated due to a recent fall in the health system's capabilities. Furthermore, Venezuela's tropical climate encourages the coexistence of several zoonoses, including arboviruses, and, as a result, the presence of multiple coinfections in malaria patients. We conducted a cross-sectional study in Ciudad Bolvar, Bolvar state, to identify the clinical-epidemiological characteristics of patients diagnosed with malaria who presented to the top diagnostic institutions.

Coinfections with many pathogens complicate diagnosis and alter illness course and management; also, the clinical presentation of malaria, when combined with superimposed endemicity, can lead to under diagnosis of coinfections. Although there is little information on the clinical result and precise interactions of these pathogens in coinfections, it is presumed that several infections exacerbate the malaria course. Any delay in diagnosing or initiating treatment for any of these infections could be fatal. In this region, we discovered a high prevalence of coinfections in malaria patients, which was linked to a poorer result. More prospective studies using samples taken at various stages of infection, as well as the use of molecular techniques, are required.

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