

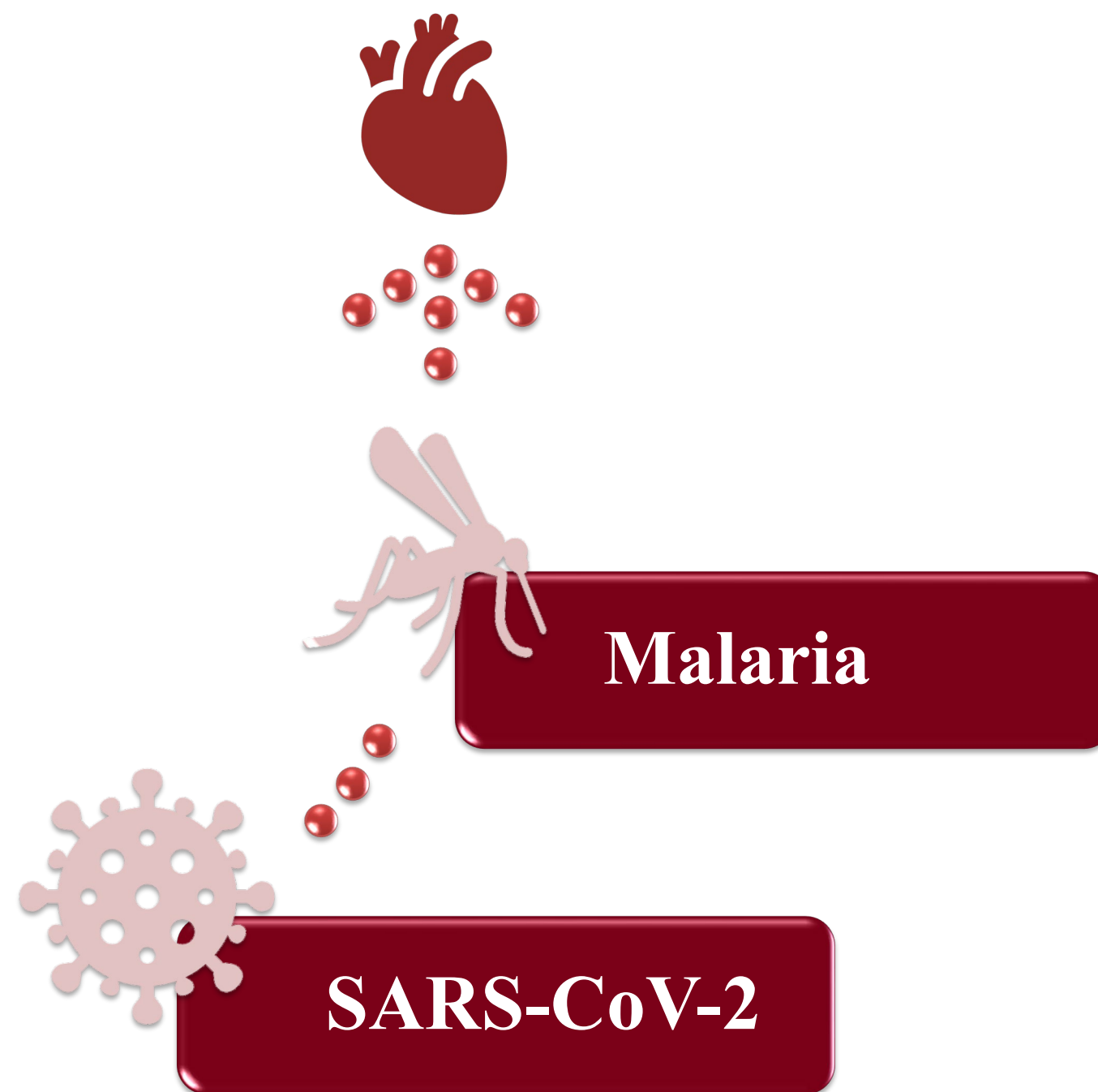
Malaria and COVID-19 a double challenge for the Heart

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Year 3
Year 2

Background

The COVID-19 pandemic caused by SARS-CoV-2 has had an unprecedented impact worldwide and in Latin America, co-infections with neglected tropical diseases like Malaria can occur and affect the heart.



Objective

To describe a unique case of Malaria and COVID-19 occurring concurrently, complicated with myocarditis, pericarditis, atrial fibrillation, and acute heart failure.

Case

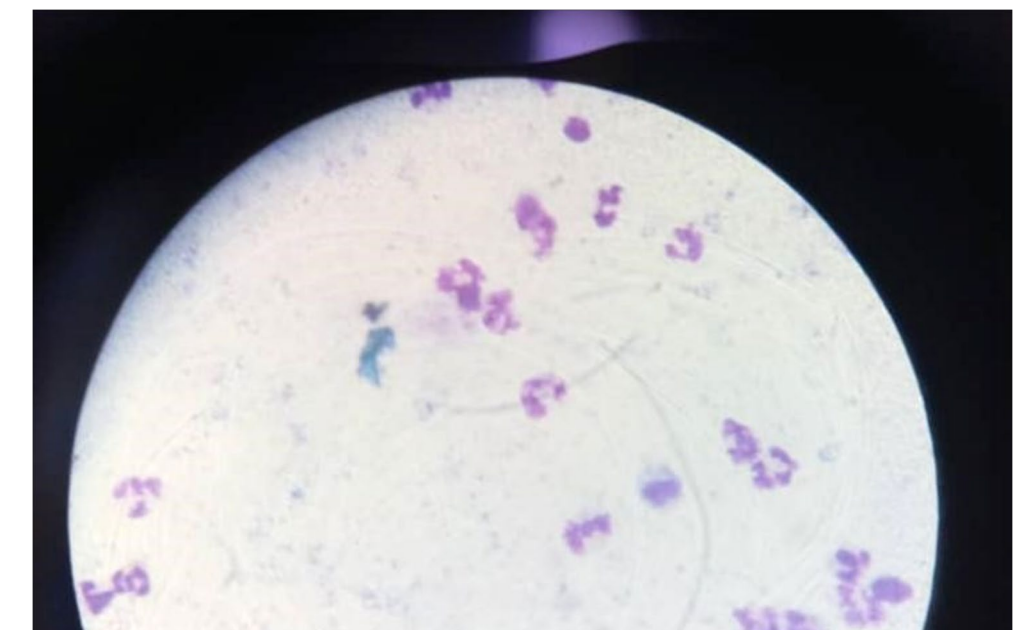
A 68-year-old male patient, a retired canoeing athlete, with a history of systemic arterial hypertension, with 1st dose of COVID-19 vaccine. Asymptomatic until March 2022, when he presented a runny nose,odynophagia, cough, and dyspnea on slight exertion, for which he went to the healthcare facility. On examination, oxygen saturation of 91%, blood pressure of 100/60 mmHg, regular heart rate of 110 bpm, positive PCR for SARS-CoV-2, elevated D-Dimer, ferritin, and C-Reactive Protein, chest X-rays with evidence of viral pneumonia. He received supplemental oxygen, steroids, and paracetamol. During his hospitalization, he presented choluric urine, afternoon episodes of high fever (39°C) preceded by chills and myalgia, thick blood smear that showed Plasmodium falciparum trophozoites. Antimalarial treatment was started with primaquine 15mg, 20 mg of artemether, and 120 mg of Lumefantrine with the disappearance of fever until day 14 of onset of symptoms when he presents with acute heart failure with reduced ejection fraction (45%) NYHA Class IV, arterial hypotension, diaphoresis, sudden onset palpitations, and afternoon febrile episode. The electrocardiogram shows atrial fibrillation with a rapid ventricular response of 120 bpm; The echocardiogram revealed a 7mm circumferential pericardial effusion. A new thick smear demonstrates the persistence of P. falciparum. A new antimalarial regimen was restarted, with the disappearance of the fever 48 hours after its onset, with reversion to sinus rhythm.

Figure1



Electrocardiogram: Atrial Fibrillation
Courtesy Dr. Rojas, Venezuela

Figure 2



Plasmodium falciparum trophozoites

Thick blood smear Plasmodium falciparum trophozoites.
Courtesy Dr. Rojas, Venezuela

Discussion

This is a unique case of concurrent presentation of COVID-19 and Malaria, which cause challenges to the health system and can lead to cardiovascular complications as in this case.

Conclusion

An exceptional case is presented, the coexistence of SARS-CoV-2 and Plasmodium falciparum infection-associated complications of myocarditis, pericarditis, atrial fibrillation, and acute heart failure.

References

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2. Hussein MIH, Albashir AAD, Elawad OAMA, Homeida A. Malaria and COVID-19: unmasking their ties. *Malaria Journal*. 2020;19(1):457.
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