

An Unusual Presentation of Malarial Infection: Acute Respiratory Distress Syndrome

Sir,

Malaria is a worldwide disease with large areas of endemicity in sub-Saharan Africa, Asia, and South America. Caused by infection with *Plasmodium* parasites, malaria affects around 200 million people, resulting in more than 400,000 deaths each.

A 31 year old gentleman, was presented with high-grade fever with chills and rigor of 2 weeks duration, nonproductive cough with acute onset of breathlessness for 10 days. Modified Medical Research Counseling (MMRC) Grade 2 which was progressed to MMRC, Grade 4 and required noninvasive ventilation. Blood investigations showed neutrophilic leukocytosis, thrombocytopenia (platelet: 54,000/ μ L), and arterial blood gas (ABG) suggestive of mild acute respiratory distress syndrome (ARDS). Chest X-ray showed features of ARDS [Figure 1].

Peripheral smear showed a normocytic normochromic blood picture with neutrophilic leukocytosis and mild eosinophilia. Trophozoite and schizont forms of *Plasmodium vivax* and few forms of *Plasmodium falciparum* were noted.

He was started on intravenous artesunate, oral primaquine, and other supportive measures. After 5 days of artesunate therapy, he symptomatically improved. Platelet count improved to 1 lakh/ μ L. Few days later, he got discharged from the hospital in a stable condition.

Malaria is important curable cause of ARDS.^[1] Malaria is transmitted through the bites of infected female *Anopheles* mosquitoes. The symptoms can range from nonlethal uncomplicated malaria with fever, headache, and vomiting, to life-threatening complications, such as cerebral malaria, and malaria-associated ARDS.^[2] Malaria-associated ARDS has been commonly found in patients infected with the *P. falciparum* or *P. vivax*. Malaria ARDS is also reported with other *Plasmodium* species such as *Plasmodium knowlesi*,

Plasmodium ovale, or *Plasmodium malariae*.^[3-5] The prevalence of ARDS in mixed infection (*P. falciparum* + *P. vivax*) ranges from 2.1% to 3%.^[6] Increased alveolar-capillary permeability, resulting in intravascular fluid loss into the lungs, appears to be the key pathophysiologic mechanism resulting in ARDS.^[7]

Initially, we were in a diagnostic dilemma, and investigations showed thrombocytopenia. ABG was suggestive of mild ARDS. Dengue Ns1, IgM, and leptospira IgM were negative, and we did not have a clue to the diagnosis and patient condition deteriorated and required noninvasive ventilation. Later on, his wife gave a travel history to Jizan Province of Saudi Arabia, so we suspected malarial ARDS since it is endemic area. Among travelers returning from endemic areas, malaria should be considered a possible etiology when they present with ARDS. ARDS in malaria is a disease with a high mortality. Early institution of antimalarial treatment can be lifesaving. ARDS



Figure 1: Bilateral infiltrates suggestive of acute respiratory distress syndrome

may be the only initial manifestation, so clinicians must have high suspicion about malaria when a patient presents with fever and ARDS.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Research quality and ethics statement

The authors followed applicable EQUATOR Network (<https://www.equator-network.org/>) guidelines, notably the CARE guideline, during the conduct of this report.

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Nil.

Conflicts of interest

There are no conflicts of interest.

Gladwin Jeemon

Department of General Medicine, MES Medical College Hospital,
Perinthalmanna, Kerala, India

Address for correspondence: Dr. Gladwin Jeemon,
Department of General Medicine, MES Medical College Hospital,
Perinthalmanna, Kerala, India.
E-mail: gladwin000@gmail.com

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