

Case Report

Case Report: Entamoeba Histolytica and Candida Impair Artemisinin-Based Combination Therapy Effect in Malaria Patient

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Abstract: Malaria is an endemic disease in Sudan, and the emergence of antimalarial drugs resistance represent a serious problem affecting the Sudanese population. Acidity reduces absorption of antimalarial drugs and allows for malaria parasites to survive and multiply. Enteric pathogens such as *Entamoeba histolytica*, candida and *Helicobacter pylori* may support the growth of *Plasmodium falciparum*, through inhibition of the absorption of antimalarial agent, such as artemisinin-based combination therapy (ACT).

Keywords: Malaria, Entamoeba histolytica, Candida, Antimalarial resistance.

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INTRODUCTION

Malaria is a great danger to universal health, with over 95% of the cases reported in 2020 by the World Health Organization in African countries, including Sudan. Sudan is a low-income country with a limited healthcare system and a considerable burden of malaria. The epidemiology of malaria in Sudan is speedily shifting due to factors counting the fast-emerging resistance to drugs and insecticides between the parasites and vectors, respectively; the rising population living in humanitarian settings because of political instability; and the current emergence of *Anopheles stephensi* in the country [1].

Resistance has emerged to all classes of antimalarial drugs excluding the artemisinins and is accountable for a new rise in malaria-related mortality, chiefly in Africa. The de novo emergence of resistance can be prohibited by the use of antimalarial drug combinations. Artemisinin-derivative combinations are mostly effective, since they act quickly and are well tolerated and highly effective [2].

Acidity decreases the activity of antimalarial drugs (AD), through its influencing in AD absorption [3].

CASE PRESENTATION

A forty-six-year-old male attended to the clinic with slight headache, abdominal discomfort, fatigue, anxiety and gastric acidity.

Laboratory investigations:

Blood film for malaria: *Plasmodium falciparum* detected with double and single chromatin dots.

Blood urea: normal

Serum creatinine: normal

Stool analysis: *Entamoeba histolytica* trophozoite, many yeast cells, and indigestible materials seen.

hematological parameters: Hemoglobin, platelets, red blood cells and white blood cells are normal.

Treatment:

artemisinin-based combination therapy (ACT).

Response to ACT:

Symptoms still exist after completion of ACT, blood film for malaria is repeated and plasmodium falciparum still exists.

CONCLUSION

We conclude that gastric acidity induced by *Entamoeba histolytica* and intestinal candida impair absorption of ACT and then prevent clearance of *Plasmodium falciparum*.

RECOMMENDATION

Treatment of *Entamoeba histolytica* and candida is essential for clearance of *Plasmodium falciparum* by ACT. Tinidazole is effective for protozoal and fungal infection and can support the action of ACT to clear malaria parasite.

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