

## Case Report

# Case Report: Intestinal Candidiasis Impair Artemether/Lumefantrine (Coartem) Effect in Malaria Patient

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**Abstract:** Malaria is an endemic disease in Sudan as well as in many developing countries. The emergence of antimalarial drugs resistance represents a serious problem disturbing the health community throughout the world. Acidity reduces absorption of antimalarial drugs and allows for malaria parasites to survive and multiply. Gastrointestinal pathogens such as *Entamoeba histolytica*, candida and *Helicobacter pylori* may support the growth of *Plasmodium falciparum*, through inhibition of the absorption of Artemether/lumefantrine and offer resistance of interest to malaria parasites. Antimicrobial agents such as tinidazole in case of acidity of microbial origin and antiacids in case of anxiety the resulting acidity may support the action of Artemether/lumefantrine in addition to other antimalarial agent to overcome their absorption defe.

**Keywords:** Malaria, intestinal Candidiasis, Artemether/lumefantrine (Coartem), Antimalarial resistance.

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## INTRODUCTION

Malaria is a great threat to universal health, with over 95% of the cases reported in 2020 by the World Health Organization in African countries, counting Sudan. Sudan is a low-income country with an inadequate healthcare system and a significant burden of malaria. The epidemiology of malaria in Sudan is quickly 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 inhibited 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 reduces the activity of antimalarial drugs (AD), through its influencing on AD absorption [3].

## CASE PRESENTATION

A forty-seven-year-old male attended to the clinic with a 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

Yeast cells over growth observed, and indigestible materials seen. Hematological parameters: Hemoglobin, platelets, red blood cells and white blood cells are normal.

**Treatment:** Artemether/lumefantrine (Coartem)

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### **Patient Response:**

Symptoms still exist after completion of Artemether/lumefantrine (Coartem), blood film for malaria is repeated and plasmodium falciparum still exists.

### **Another Treatment Choice and Patient Response to it**

Changing the route of antimalarial administration to artemether injection leads to clearance of plasmodium falciparum.

### **CONCLUSION**

We conclude that gastric acidity induced by intestinal candida impair absorption of Artemether/lumefantrine (Coartem) and then prevents clearance of *Plasmodium falciparum*.

### **Recommendations**

Treatment of candida over growth is essential for clearance of *Plasmodium falciparum* by

Artemether/lumefantrine (Coartem). Tinidazole is effective for intestinal candidiasis and can support the action of Artemether/lumefantrine (Coartem) to clear malaria parasite or changing the route of antimalarial administration by using artemether injection can clear malaria parasite from patients' blood.

### **REFERENCES**

1. Elagali, A., Ahmed, A., Makki, N., Ismail, H., Ajak, M., Alene, K. A., Weiss, D. J., Mohammed, A. A., Abubakr, M., Cameron, E., & Gething, P. (2022). Spatiotemporal mapping of malaria incidence in Sudan using routine surveillance data. *Scientific Reports*, *12*(1), 14114.
2. White, N. J. (2004). Antimalarial drug resistance. *The Journal of clinical investigation*, *113*(8), 1084-92.
3. Kitagawa, T., Mastumoto, A., Terashima, I., & Uesono, Y. (2020). Antimalarial drugs lose their activity with a slight drop in pH. *BioRxiv*, 2020-08.