

## **Artemether/lumefantrine in the treatment of uncomplicated falciparum malaria**

**Gilbert Kokwaro, Leah Mwai & Alexis Nzila**

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### **Summary**

At present, artemether/lumefantrine (AL) is the only fixed-dose artemisinin-based combination therapy recommended and pre-qualified by WHO for the treatment of uncomplicated malaria caused by *Plasmodium falciparum*. It has been shown to be effective both in sub-Saharan Africa and in areas with multi-drug resistant *P. falciparum* in southeast Asia. It is currently recommended as first-line treatment for uncomplicated malaria in several countries. However, AL has a complex treatment regimen and the issues of adherence to treatment with AL by adult patients and real-life effectiveness in resource-poor settings will be critical in determining its useful therapeutic life, especially in Africa, where the major burden of malaria is felt. There are also issues of safety of the artemisinin derivatives, including AL, which will need to be monitored as their use in resource-poor settings becomes more widespread. There are limited pharmacokinetic studies of AL in African patients, and the relationship between plasma drug concentration and efficacy in these patients is unknown. Moreover, the effects of factors such as concurrently administered drugs, malnutrition and co-infections with HIV and helminths in malaria patients are not well understood. These will need to be addressed, although a few studies on possible drug–drug interactions with commonly used drugs, such as quinine, mefloquine and ketoconazole, have been reported. This review focuses on the status of clinical pharmacology, efficacy and real-life effectiveness of AL under a variety of settings, and highlights some of the challenges that face policy makers during the deployment of AL, especially in Africa, with regards to ensuring that those who most need this therapy will not be denied access due to official inefficiency in procurement and distribution processes.