In the last decade, Plasmodium falciparum resistance to a number of commonly used anti-malarials especially chloroquine, has increased considerably. Newer anti-malarial drugs are therefore being aggressively evaluated as alternatives. A randomized double-blind controlled trial was therefore undertaken, to compare the efficacy of halofantrine to that of metakelfin, in the treatment of moderately severe infections of Plasmodium falciparum in an endemic malaria area in Kenya. Three hundred and thirty five subjects with laboratory confirmed malaria were recruited and randomized to receive treatment with either halofantrine (171 subjects) or metakelfin (164 subjects). Two thirds (66%) of the study subjects were under the age of five years, and were therefore considered to have minimal immunity. All study subjects were initially admitted to hospital for three days and then followed up as out-patients on days 7, 14, 21, and 28. The level of parasitaemia, the presence of fever and the occurrence of adverse effects were evaluated. Halofantrine was found to be comparable to metakelfin in terms of resolution of fever (mean time 45 and 51 hours respectively). No major adverse side effects were observed. Halofantrine is a viable drug in the treatment of uncomplicated P. falciparum malaria.