Abstract

Background: Medicinal plants have traditionally been used as remedies against malaria. The present review attempted to compile data on scientific research evidence on antimalarial medicinal plants screened at Kenya Medical Research Institute (KEMRI), Center for Traditional Medicine and Drug (CTMDR) Research from January 2003 to December 2021. Methods: A systematic review was conducted using a predefined protocol based on PRISMA. Search was performed in Google Scholar and PubMed. One hundred and eight journal articles were identified 37 of which published on antimalarial/ antiplasmodial work. Thirty journal articles with at least one author from KEMRICTMDR and accessible in full were selected for analysis. Relevant data was captured in MS Excel format and descriptive statistics, percentages and tables used to summarize the findings. Results: Assessment of individual plant species was considered as an independent study resulting in 1170 antiplasmodial/antimalarial tests done from 197 plant species. One hundred and fifty plant species were screened in vitro, one in vivo and 46 were both in vivo and in vitro. Three hundred and forty-four of tests reported good activity (IC50 < 10 μg/mL or parasite suppression rate of ≥50%), 414 moderate activity (IC50 values of 10–49 μg/mL or parasite suppression rate of 30%–49%) and 412 were reports of inactivity (IC50 > 50 μg/mL or parasite suppression rate of < 1 μg/mL against Plasmodium falciparum D6 strain and chemosuppression in mice at an oral dose of 100 mg/kg, was reported as 61.9% and 65.3% respectively. Fifty five antimalarial/antiplasmodial active compounds isolated from eight plant species were reported with resinone (39) having the best activity (IC50 < 1 μg/mL). Conclusion: Though 344 of tests reported promising antimalarial activity, it was noted that there was limited evaluation of these plants in animal models, with only 9.0% (105/1170) studies and no clinical trials. This highlights an important research gap emphasizing the need for drug development studies that aim to progress