

Abstract

Background

Anopheles gambiae s.l. and *An. funestus* are important vectors of malaria and bancroftian filariasis, which occur as co-endemic infections along the Kenyan Coast. However, little is known about the occurrence and prevalence of concomitant infections of the two diseases in mosquito and human populations in these areas. This study reports the prevalence of concomitant infections of *Plasmodium falciparum* and *Wuchereria bancrofti* in mosquito and human populations in Jilore and Shakahola villages in Malindi, Kenya.

Methods

Mosquitoes were sampled inside houses by pyrethrum spray sheet collection (PSC) while blood samples were collected by finger prick technique at the end of entomological survey.

Results

A total of 1,979 female *Anopheles* mosquitoes comprising of 1,919 *Anopheles gambiae s.l.* and 60 *An. funestus* were collected. Concomitant infections of *P. falciparum* sporozoites and filarial worms occurred in 1.1% and 1.6% of *An. gambiae s.l.* collected in Jilore and Shakahola villages respectively. *Wuchereria*-infected mosquitoes had higher sporozoite rates compared to non-infected mosquitoes, but multiple infections appeared to reduce mosquito survivorship making transmission of such infections rare. None of the persons examined in Shakahola (n = 107) had coinfections of the two parasites, whereas in Jilore (n = 94), out of the 4.3% of individuals harbouring both parasites, 1.2% had *P. falciparum* gametocytes and microfilariae and could potentially infect the mosquito with both parasites simultaneously.

Conclusion

Concerted efforts should be made to integrate the control of malaria and bancroftian filariasis in areas where they co-exist.