ABSTRACT

The present research work was carried out keeping in view the increased incidences of resistance against conventionally/traditionally used insecticides (adulticides) for mosquito control and their toxicity to human health through the food chain and other sources. *Aedes aegypti* and *Aedes albopictus* are the main vectors of dengue throughout the world. Innovative approaches are needed for their control as well. The use of endectocide, i.e. ivermectin, could be a new addition to anti-dengue measures due to its effectiveness against other species of mosquitoes. During the present study, the insecticidal activity of ivermectin was evaluated against *Aedes aegypti* and *Aedes albopictus*. Different concentrations of ivermectin i.e., low dose (0.1 mg/kg), standard dose (0.2 mg/kg), high dose (0.4 mg/kg), and very high dose (0.8 mg/kg) were checked against both species of *Aedes* mosquitoes. We used adult female mosquitoes of both species in our experiments. Mosquitoes were starved for 24 hours and fed on the ivermectin-injected mice. The number of dead adults was recorded after one hour of feeding up to 48 hours. Both species tested were found susceptible to all concentrations of ivermectin and mortality was significant at all doses of ivermectin. Ivermectin also proved to be dose-dependent in insecticidal efficacy against *Aedes aegypti* and *Aedes albopictus*. We also checked the *in vivo* residual period of ivermectin in mice at the standard dose of ivermectin against *Aedes aegypti* mosquitoes, which showed that the persistence of ivermectin till day 10 and the mortality of mosquitoes gradually decreased from day one to day 10 after feeding on mice. Our data suggests that ivermectin is a potential candidate to control both the dengue vector and may be used as part of integrated vector management of the dengue vector.

Keywords: Ivermectin, *Aedes aegypti*, *Aedes albopictus*, susceptibility, and residual period.