ABSTRACT

In Rwanda, dogs receive annual rabies vaccination but it is not known whether vaccinated dogs respond well to rabies vaccines. A cross-sectional study was conducted to assess the effectiveness of anti-rabies vaccination of dogs in Kigali city, Rwanda to determine whether vaccinated dogs attain protective antibody levels. A face to face interview was conducted with dog owners regarding rabies disease and its control in Kigali city and blood samples for serum were taken to quantify levels of protective rabies sera titres in vaccinated and unvaccinated pet dogs. Factors influencing the response to rabies vaccination in dogs were also investigated through a questionnaire and analysing blood smears for parasites as well as faecal and whole blood samples. Based on dog distribution and vaccination history, 3 administrative sectors were chosen per district that is 9 study sectors were chosen across Kigali city; hence 137 dog owners were interviewed. Only 93 dogs were accessible for blood and faecal sampling, including vaccinated (80) and non-vaccinated (13). Although 95.5 % of the respondents were aware of rabies, only 43.7% knew of human and canine rabies. Nearly 74% knew that people can have rabies through dog-bites. Only 43% and 26% of respondents knew that clinical rabies is always deadly both in humans and dogs respectively while 20% reported they would wash dog-bite wounds wisely with water and soap before taking a dog-bite victim to a hospital. Of the study dogs (n=93), 39.8% and 100% tested positive for intestinal worms and negative for haemoparasites respectively. Of the vaccinated dogs (n=80), 35% did not have protective antibody levels. Age of dogs, deworming status, number of vaccinations against rabies influenced rabies antibody titres. Gaps in rabies knowledge and attitudes were revealed, i.e., awareness of the Rwandans about rabies needs to be strengthened. Vaccination programme needs to be monitored through regular serosurvey and take appropriate actions.