Rickettsial infection in domestic mammals and their ectoparasites in El Valle de Antón, Coclé, Panamá

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ABSTRACT

The present research evaluated the presence of Rickettsia spp. on ectoparasites of horses and dogs (using PCR techniques), and their sera (using immunofluorescence assay) in El Valle de Antón town in Panama. A total of 20 horses and 20 dogs were sampled, finding four species of ectoparasites on dogs (the ticks Rhipicephalus sanguineus, Amblyomma ovari, Amblyoma oblongoguttatum, and the flea Ctenocephalides felis), and two tick species on horses (Amblyomma cajennense and Dermacentor nitens). DNA of Rickettsia amblyommii was found in pools of A. cajennense, D. nitens, and R. sanguineus, while Rickettsia felis was detected in C. felis pools. Overall, 70% (14/20) and 65% (13/20) of the horses and dogs, respectively, were seroreactive (titer ≥ 64) to spotted fever group rickettsiae. Sera from six dogs and five horses reacted to R. amblyommii antigens with titers at least four-fold higher than those for the other antigens tested (Rickettsia bellii, Rickettsia parkeri, Rickettsia rhipicephali, R. felis, and R. rickettsii). These serological results, coupled with our molecular findings, suggest that these dogs and horses were infected by Rickettsia amblyommii. More studies need to be realized afford to identify the Rickettsia species responsible for other serological and molecular positive results, and their ecological importance.