33.3 ARE PREVENTION AND CONTROL STRATEGIES WORKING?

Filipe Dantas-Torres

Florcruz Recife Brazil

Full text
Canine leishmaniasis is an important disease in veterinary medicine and in public health. From the veterinary standpoint, dogs with leishmaniasis, especially when infected by *Leishmania infantum*, can present mild clinical signs at early stages of the infection, but can also evolve to life-threatening disease. From a public health perspective, dogs may serve as reservoirs of *L. infantum*, which is the causative agent of zoonotic visceral leishmaniasis in many countries around the world. Indeed, zoonotic visceral leishmaniasis is a neglected tropical disease that is still causing considerable morbidity and mortality in affected human populations, especially in rural and suburban areas in Central and South America. Strategies for the control and prevention of leishmaniasis in dogs include: culling of infected dogs, treatment of infected dogs, use of repellents, and vaccination. Culling of infected dogs has been proven ineffective, for several reasons: lack of infrastructure and human resources of in endemic areas, rapid replacement of infected dogs by susceptible ones (infected or not), delay between diagnosis and removal of infected animals, presence of large numbers of stray dogs, low sensitivity and specificity of serological tests used to detect infected dogs, among others. Treatment of infected, sick dogs may reduce parasite load and the infectiousness to phlebotomine sand fly vectors, but should be considered as an individual measure, not as a control strategy from a population perspective. Synthetic pyrethroids (e.g., deltamethrin, permethrin, and flumethrin) have been proven effective in reducing the risk of infection in dogs under field conditions. The repellent products are available mostly as collars and spot-on formulations, and, in some instances, the community-wide application of repellent-impregnated collars have been demonstrated to reduce the risk of infection, not only in dogs, but also in humans. Vaccination has been proposed as strategy for preventing visceral leishmaniasis in dogs, but the available vaccines have limited efficacy and are claimed to reduce the risk of disease development, not infection. Finally, the preventive use domperidone, a dopamine D2 receptor antagonist, was effective in reducing the risk of visceral leishmaniasis development in dogs. It is evident that nowadays veterinarians and dog owners have a large repertoire of products against canine leishmaniasis. Evidence-based medicine supports the use of repellents as the first-line strategy against *L. infantum* infection in dogs. Other strategies such as vaccination may also be used concomitantly, but they should not replace the use of repellents, as they do not prevent dogs from being bitten by an infected phlebotomine sand fly vector.