

Serological study and risk factors analysis of canine toxoplasmosis in the border of Paraguay with Brazil and Argentina

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Toxoplasma gondii (*T. gondii*), is an intracellular protozoa that has a worldwide distribution and infects a wide range of warm-blooded vertebrates. The domestic cat, and other felids, are the only known definitive hosts of this parasite. Only they can excrete oocysts into the environment. The parasites are facultative and heteroxenous protozoa that developing several potential routes of transmission among different host species. The dogs can acquire *T. gondii* either from soil or foods contaminated with oocysts. eating a raw or incompletely cooked meat with bradyzoites as humans. This way, as a sentinel specie, could be used for intentional epidemiological vigilance and control for this parasite. Also, they can be used to demonstrate the infection pressure on other hosts, including humans. The aim of this study was to determine the seroprevalence of IgG anti *T. gondii* employing indirect enzyme-linked immunosorbent assay (ELISA) in 462 serum of dogs from four cities: Hernandarias, Ciudad del Este, Presidente Franco and Cedrales in the border of Paraguay, with Brazil, and Argentina. The obtained prevalence of IgG anti- *T. gondii* in dogs was 42.2% distributed in the city: Cedrales: 20%, Ciudad del Este: 44.5%, Presidente Franco: 33.5% and Hernandarias: 78.9%. The percentage of positive dogs was above average in all the studied cities. The chi-square statistical analysis as a risk factor, did not show a significance in age (young dogs: less than 1 year old, adults dogs: 1-7-year-old, and elderly dogs: more than seven-year-old), ($p= 0.42$); sex ($p= 0.84$) and breed ($p=0.84$). Also, the level of animal welfare (veterinary attention, presence of other animals, and access to the street and green areas) did not show a risk factor associated to a positive seroprevalence of *T. gondii*. It was the first serological study of canine *T. gondii* in this site of Paraguay. Dogs and humans are equally exposed to common infection sources. Regardless the difference in hygiene habits among cultures, canine toxoplasmosis can be an important epidemic indicator of the toxoplasmosis risk for humans. Dogs are utilized to accomplish serological surveys with the purpose of understanding the zoonoses dissemination in urban and rural environments.

Keywords: toxoplasmosis, dogs, serology, ELISA, Paraguay