

# SEROEPIDEMIOLOGICAL SCREENING OF LEISHMANIA INFECTION IN DOGS AND CATS: THE ROLE OF THE VETERINARIAN IN A HIGHLY ENDEMIC AREA IN SICILY

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## BACKGROUND

Leishmaniosis is a zoonotic disease caused by *Leishmania* spp. with a wide spectrum of clinical signs, lymphadenomegaly, skin-ocular lesions, weight loss, signs of renal failure [1,2]. Many subclinical cases of leishmaniasis without illness could play an important role in the maintenance of *Leishmania* infection in endemic areas. Veterinary surveillance of dogs/cats owners could help to update the seroprevalence status of *Leishmania infantum* infection in a random court of sick and apparently healthy dogs and cats from western Sicily (Bagheria and neighboring areas) using indirect fluorescent antibody test (IFAT).

## MATERIAL AND METHODS

A total of 268 dogs and 9 cats living in western Sicily were randomly sampled during the 2020 year. Specific antibodies to *L. infantum* were detected using the IFAT against in-house cultured promastigotes. *Leishmania* strain was used as an antigen fixed on multispot microscope slides. The feline and canine sera were both prepared by serial 2-fold dilutions (1:40 to 1:5120) in phosphate buffered saline and added to the antigen-coated wells. Fluorescent anti-cat/anti-dog immunoglobulin G antibody was used for detection.

## RESULTS

49/268 (18.3%) sampled dogs tested positive to IFAT with a titer  $\geq 1:160$  and 40/268 (15%) tested suspected (titers 1:40-1:80), for *L. infantum* infection (Table 1). An additional 2/9 (22.2%) cats were seropositive with a titer of 1:160 and 2/9 (22.2%) cats were seropositive with a titer of 1:80 (Table 1). Figure 1 shows geographical distribution of *L. infantum* seroprevalence in dogs/cats sampled from western Sicily.

	DOGS			CATS		
	Positive $\geq 1:160$	Suspected 1:40-1:80	Negative $< 1:40$	Positive $\geq 1:160$	Suspected 1:80	Negative $< 1:40$
Sick	44	0	0	1	0	0
Apparently healthy	5	40	179	1	2	5
Total	49	40	179	2	2	5

Table 1. IFAT results for *L. infantum* in dogs/cats living in western Sicily

● Positive dogs ● Negative dogs ★ Positive cats ★ Negative cats

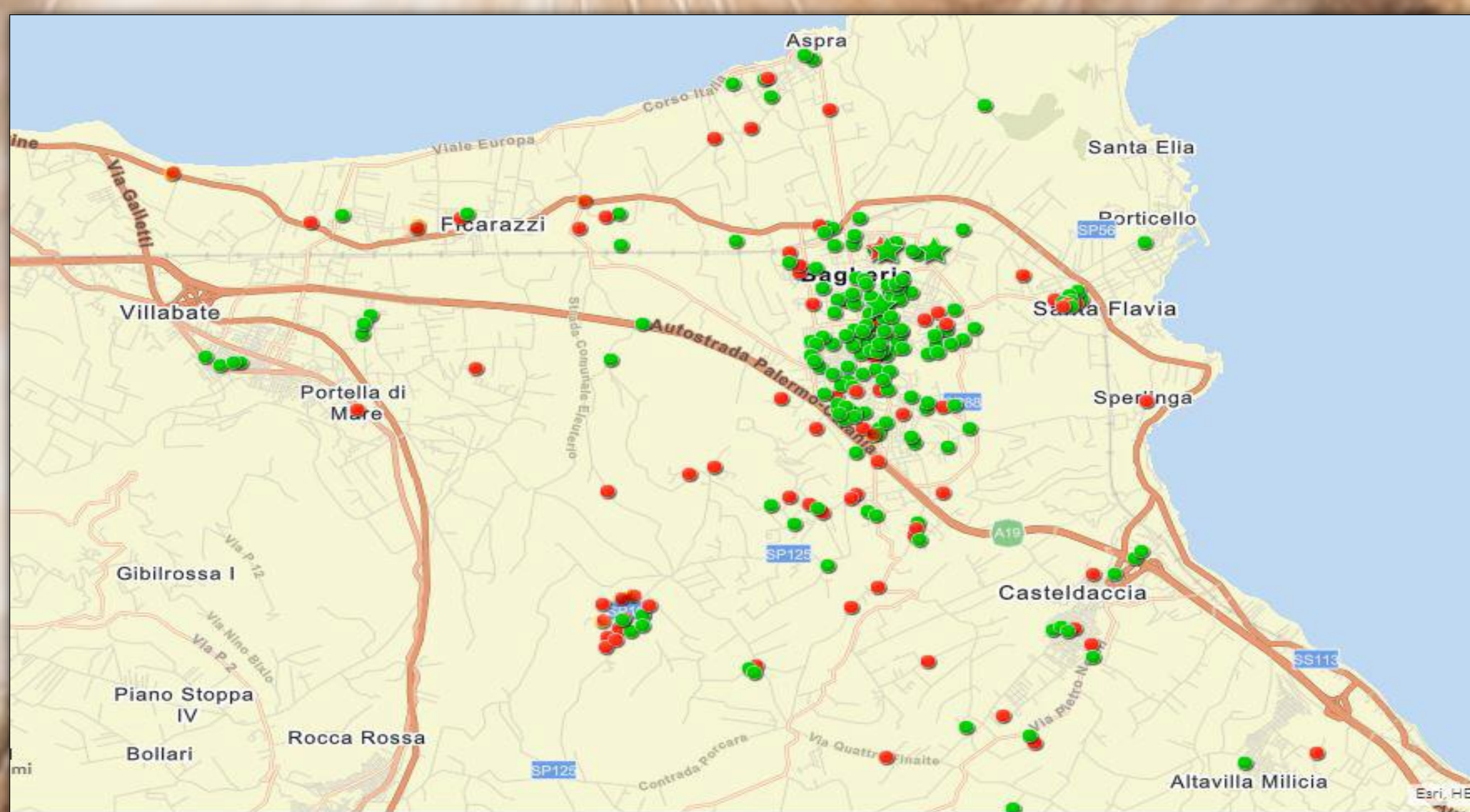


Figure 1. Geographical distribution of *L. infantum* seroprevalence in dogs/cats from western Sicily

## CONCLUSION

Western Sicily is an active focus for canine and feline leishmaniosis in the Mediterranean area. The results of the present study indicate a high exposure rate to *Leishmania* (about 33% dogs and 44% cats result positive or suspected) in a random population, suggesting that they are infected with *L. infantum*. Moreover, 5 dogs and 1 cat previously classified as apparently healthy were seropositive with a titer  $\geq 1:160$ . In conclusion, veterinary surveillance of dogs/cats could help to control the increase of *L. infantum* infections, especially in areas of high endemicity.

## REFERENCES

- [1] Ribeiro, R.R., Michalick, M.S.M., da Silva, M.E., dos Santos, C.C.P., Frézard, F.J.G., da Silva, S.M., 2018. Canine Leishmaniasis: An Overview of the Current Status and Strategies for Control. *BioMed Res. Int.* 2018, e3296893. <https://doi.org/10.1155/2018/3296893>
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