

Retrospective study on the parasites frequency of dogs referred to the Veterinary Teaching Hospital (VTH)-University of Bologna, combined to haematological results.

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INTRODUCTION: Although many studies on the frequency of endoparasites in dogs, in Italy, have been reported, no correlation with haematological results has been recently made. Parasitic infections are endemic worldwide and have been described as constituting the greatest single worldwide cause of illness and disease in animals and humans (Steketee, 2003 J Nutr. 133: 1661S–1667S). Frequency and putative risk factors of endoparasite infections diagnosed through fecal examination of dogs submitted to the Veterinary Teaching Hospital (VTH) of the Department of Veterinary Medical Sciences of the University of Bologna were determined, combined to haematological profiles.

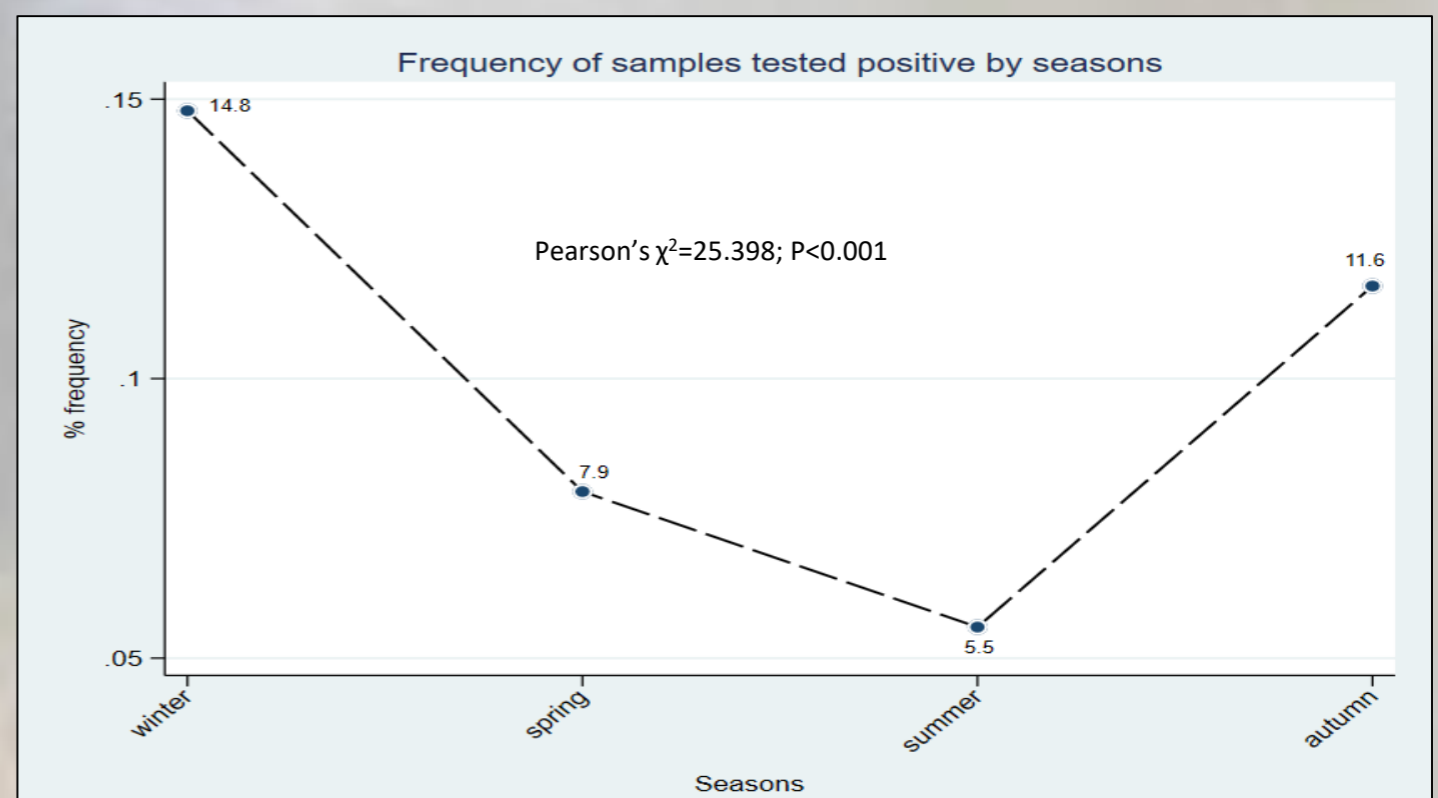
MATERIALS AND METHODS: Data were retrospectively obtained (January 1, 2011 - July 31, 2019) through management software Fenice[®] used by the VTH. Three specific datasets were built: one with the total of the fecal samples examined within the study period; and two were subsets of the first one, including just those which had a complete blood count (CBC) and serum chemistry, respectively. To be included in these two datasets haematological exams dated back no more than ten days respect to fecal examination. Investigated predictors of endoparasitism included sex, age, seasonality, eosinophilia, serum albumin, albumin-globulin ratio.

RESULTS AND CONCLUSIONS:

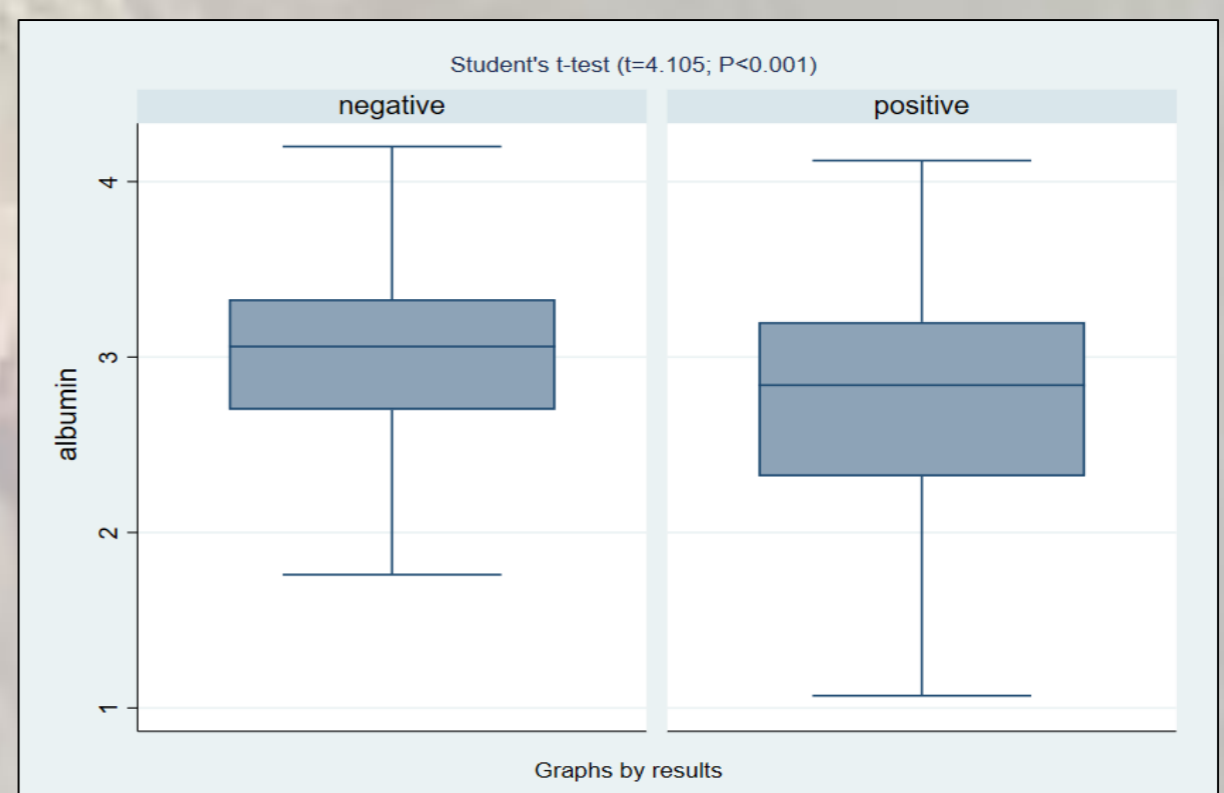
A total of 1,972 dogs were evaluated for endoparasite status using specific diagnostic tests: direct smear, Baermann, flotation solution in a standardized centrifugal flotation method. The overall proportional infection was 10.9 %. The most frequent parasites recovered were coccidia around 3%, *Toxocara canis* (2.8%) and *Giardia duodenalis* (1.6%). Diagnoses occurred more often in winter months compared to the others (P<0.001). Age appears as the most relevant risk factors, where dogs younger than one year-old had 6 times higher probability of being diagnosed positive compared to older ones (OR=6.09; P<0.001).

Parasites	# of positive samples	%
coccidia	59	3
<i>T. canis</i>	56	2.8
<i>Giardia duodenalis</i>	32	1.6
<i>T. vulpis</i>	23	1.2
Anchilostomatidae	20	1
<i>Capillaria</i> spp.	13	0.7
<i>A. vasorum</i>	3	0.2
<i>D. caninum</i>	2	0.1
Cestoda	2	0.1
<i>Strongyloides</i> spp.	2	0.1
<i>C. vulpis</i>	1	0.05
<i>Filaroides</i> spp.	1	0.05

Parassiti	Positive		Pearson χ^2	P-value
	≤12 mesi	>12 mesi		
Coccidia	10,8%	0,7%	$\chi^2=121,102$	p < 0,001
<i>Toxocara canis</i>	6,3%	1,3%	$\chi^2=25,09$	p < 0,001
<i>Giardia</i>	5,6%	0,5%	$\chi^2=57,856$	p < 0,001



Season	Odds Ratio	P-value	IC 95%
Winter	baseline	baseline	-
Spring*	0,502	0,001	0,340-0,742
Summer*	0,340	<0,001	0,208-0,555
Autumn	0,760	0,151	0,523-1,105



No significant association was detected analysing coprological examination and CBC parameters. On average, serum albumin was lower in parasitized animals compared to negative ones (t=4.105; P<0.001). These results are of value to estimate parasite impact and to assist researchers, veterinarians, and pet-owners with suitable information to control parasites.