

A STUDY OF THE EFFECT OF LEISGUARD® ON THE EFFICACY OF A STANDARD VACCINATION SCHEDULE IN PUPPIES

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OBJECTIVE

To assess the effect of Leisguard® on antibody production against Parvovirus, Distemper and Hepatitis under a standard vaccination schedule in puppies.

INTRODUCTION

Leisguard® is a domperidone-based oral suspension for the treatment and prevention of canine Leishmaniosis. Repeated oral administration of Leisguard® in dogs boosts the immune system at the level of both the innate and adaptive response, thus contributing to establish a predominant cell-mediated

response (Th1) (Gómez-Ochoa et al. 2012). This effect has led to the hypothesis that Leisguard® administration may also act upon the humoral response (Th2) by altering the intensity or rate of protective antibody production after the administration of a standard vaccination schedule in puppies.

MATERIAL AND METHODS

- 24 healthy dogs (12 males and 12 females) of different breeds were included.
- All animals underwent the following vaccination schedule:
At 6 weeks of age: 1st dose against Parvovirus (CPV) and Distemper (CDV).
At 8 weeks of age: 2nd dose against CPV and CDV and 1st dose against Hepatitis (CAV).
- This was a two-phase study (Table 1):
PHASE I: Treated Group (n=6): vaccinated and treated with Leisguard® (1ml/10kg/day) for 14 days after 6-week vaccination.
Control Group (n=6): vaccinated only.
PHASE II: Treated Group (n=6): vaccinated and treated with Leisguard® (1ml/10kg/day) for 14 days after 8-week vaccination.
Control Group (n=6): vaccinated only.
- From week 6 to week 10 (in Phase-I animals) and from week 8 to week 10 (in Phase-II animals), blood samples were obtained every 7 days for serum antibody titers against CPV and CDV (by means of ELISA) and also against CAV (by means of the complement fixation test).
- According to the antibody titer obtained at each sampling time, the percentage of animals with antibody protection rates against CPV, CDV and CAV was calculated according to the cutoff points established for each disease ($\geq 1/50$, $\geq 1/30$ and $\geq 1/30$, respectively).
- All animals underwent clinical follow-up throughout the study to detect any possible adverse reactions.

PHASE	GROUP	Nr. of animals	6-week vaccination*	Leisguard®	8-week vaccination**	Leisguard®
Phase I	Treated	6	CPV, CDV	1ml/10kg/day 14 days	CPV, CDV, CAV	—
	Control	6	CPV, CDV	—	CPV, CDV, CAV	—
Phase II	Treated	6	CPV, CDV	—	CPV, CDV, CAV	1ml/10kg/day 14 days
	Control	6	CPV, CDV	—	CPV, CDV, CAV	—

* Nobivac Puppy DP (INTERVET)

** Nobivac DHP (INTERVET)

Table 1: Experimental design diagram.

RESULTS AND DISCUSSION

- PHASE I:
 - At six weeks of life, before initiating treatment with Leisguard®, 33% of animals in the Treated Group and 50% in the Control Group showed protective levels of maternal immunity against CPV. Also, 33% of animals in the Treated Group and 17% in the Control Group showed protective levels of maternal immunity against CDV (Figures 1 and 2).
 - Two weeks after the first vaccination, 100% of animals in both groups had already reached protection rates against CPC and CDV (Figures 1 and 2).
 - The percentages of protection were maintained after revaccination in both groups.
 - Finally, 100% of the animals in both groups started from protective levels of maternal immunity against CAV. These levels were maintained throughout the study.
- No statistically significant differences between groups were observed in the % of animals with protective antibody titers (Chi Square test $p > 0.05$).

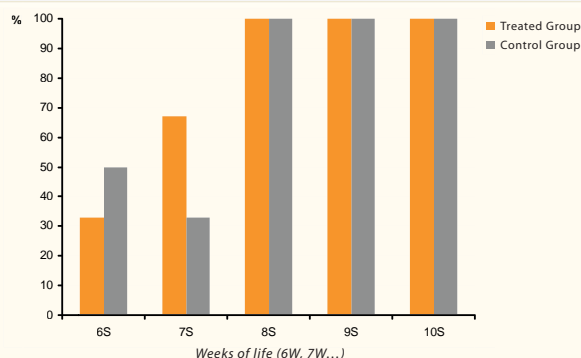


Figure 1:

% of animals with protective antibody rates ($\geq 1/50$) against CPV.

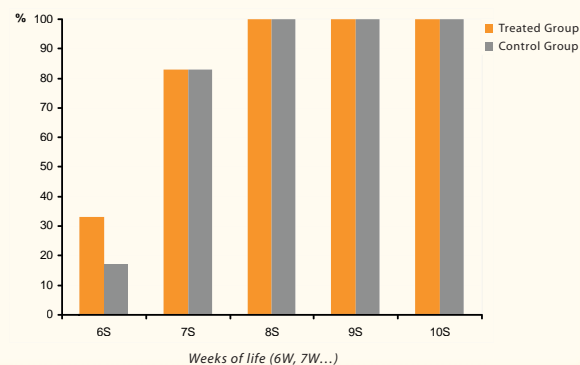


Figure 2:

% of animals with protective antibody rates ($\leq 1/30$) against CDV.

- PHASE II:
 - 100% of the animals in both groups showed antibody protection rates against CPV, CDV and CAV seven days after the 8-week vaccination. These rates were maintained throughout the study.
 - No adverse reactions to vaccines administered or to treatment with Leisguard® were observed throughout the study.

REFERENCES

Gómez-Ochoa P, Sabate D, Homedes J and Ferrer L. Use of the nitroblue tetrazolium reduction test for the evaluation of Domperidone effects on the neutrophilic function of healthy dogs. Veterinary Immunology and Immunopathology (2012), doi: 10.1016/j.vetimm.2012.01.018.

CONCLUSIONS

The administration of Leisguard® does not alter the rate or the intensity of protective antibody production levels against Parvovirus, Distemper and Hepatitis under a standard vaccination schedule in puppies aged 6 and 8 weeks.