REDUCTION OF CANINE LEPTOSPIROSIS DISEASE AND SHEDDING BY A LEPTOSPIRA BIVALENT VACCINE FOLLOWING CHALLENGE IN DOGS

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INTRODUCTION

Leptospirosis is a spirochetal zoonosis, caused by pathogenic serovars of the genus Leptospira. Canine leptospirosis has been traditionally associated with serovars from serogrups Canicola and Icterohaemorrhagiae, which are still the most prevalent in dogs worldwide.

OBJECTIVE

The aim of this study is to assess the efficacy of HIPRADOG®7, a non-adjuvanted liquid vaccine containing a suspension of inactivated whole organisms of L.canicola and L.icterohaemorrhagiae, mixed with a lyophilized vaccine containing live CDV, CAV2, CPV and CPIV.

METHODS

Twenty-four 8-week-old SPF Beagle dogs were randomly divided in 4 groups: one control and one immunized group per serovar (vaccinated subcutaneously twice at a 4-week interval with HIPRADOG®7). Four weeks after the last vaccination, each dog was challenged with a virulent strain of L.canicola or L.icterohaemorrhagiae, as appropriate. This study was performed according to EU monograph.

RESULTS

The results show a significant difference in clinical and haemathological scores, significant differences in the number of days the organisms were detected in blood and urine and significant difference in the number of kidney samples in which the organisms were detected. Summarized results are shown in Table 1.
No vaccinated dogs showed haemathological alterations and only some of them showed very mild transient clinical signs, demonstrating protection.
Leptospiruria was present in all control dogs with significant difference in the number of days between vaccinated and control groups, demonstrating a prevention of the carrier state.

CONCLUSIONS

HIPRADOG®7 has been able to protect dogs against the clinical disease, leptospiremia, renal infection and urine shedding.

		POSITIVE CULTURES			HAEMATHOLOGY		GRAVITY CLINICAL SIGNS (CS)
		Number of dogs/detection days, mean		kidney	Thrombocytopenia	Lymphopenia	number of dogs / accumulated gravity CS, mean
Challenge	Treatment Group	Bloodl	Urine				
Leptospira seroar Canicola	Vaccinated	3 / 2*	3 / 1*	0*	0*	0*	2 / 2
	Control	6 / 4	6 / 2.5	4	3	3	4 / 8
Leptospira serovar Icterohaemorrhagie	Vaccinated	6 / 2*	4 / 1*	2*	0*	0*	4 / 2*
	Control	6 / 3.5[I]	6 / 25[I]	6	4	3	6 / 38

Table 1. Results of blood, urine and kidney cultures. Haemathological parameters after challenge of dogs with Leptospira serovar Canicola and serovar Icterohaemorrhagiae.

* statistically significant differences ($p<0.05$)
I at least two positive samples in the two different days
II two dogs died at days 6 and 8 post-challenge due to the infection, when leptospires were still detectable in their blood and urine