Comparison of the intra-articular treatment with a platelet concentrate, high-density hyaluronan, triamcinolone hexacetonide, and stanozolol in dogs with hip osteoarthritis

Alves J.^{1,2, *}; Santos A.¹; Jorge P.¹; Lavrador C.²; Carreira L. Miguel^{3,4}

¹Guarda Nacional Republicana; ²IMED – Mediterranean Institute for Agriculture, Environment and Development, Universidade de Évora; ³Interdisciplinary Centre for Research in Animal Health (CIISA) – University of Lisbon, (FMV/ULisboa) – Portugal. ⁴Anjos of Assis Veterinary Medicine Centre; *alves.jca@gnr.pt

OBJECTIVES:

To compare the effect of the intra-articular treatment with triamcinolone hexacetonide (TH), stanozolol, hyaluronan, and platelet concentrate (PC) in Police working dogs with bilateral hip osteoarthritis (OA).

MATERIALS AND METHODS:

Fifty (N=50) police working dogs with hip OA were randomly assigned to a control group (CG, n=10), TH group (THG, n=10), PC group (PCG, n=10), stanozolol group (SG, n=10) and Hylan G-F 20 group (HG);

On days 0, 8, 15, 30, 90, and 180 days post-treatment, weight-bearing distribution, and the Canine Brief Pain Inventory, Liverpool Osteoarthritis in Dogs, and Canine Orthopedic Index) were evaluated.

Kaplan-Meier estimators were conducted and compared with the log-rank test. Cox proportional hazard regression analysis was performed to determine treatment survival, $p < 0.05$.

Fig. 1 – Police working dogs during active work.

RESULTS:

Patients had a mean age of 6.5 ± 2.4 years and bodyweight of 26.7 ± 5.2 kg. At initial evaluation, hips were graded as mild (n=35), moderate (n=10), and severe (N=5), and no differences were found between groups.

All treatments were able to improve CMI scores and weight-bearing.

PCG showed a lower range of variation while maintaining a positive result for more extended periods.

Breed, age, sex, and OFA grade did not significantly influence response to treatment.

Results are shown in the table.

Variable	Wheight distribution		CBPI		LOAD		COI	
	Simmetry Index (p=0.014)		PIS (p=0.025)		(p=0.006)		Total (p=0.053)	
	HR (95% CI)	p	HR (95% CI)	p	HR (95% CI)	p	HR (95% CI)	p
Treatment		0,001*		0,001*		0,000*		0,163
Control	1,00		1,00		1,00		1,00	
HG	0,23 (0,08 - 0,65)	0,006*	0,06 (0,15-0,26)	0,000*	0,06 (0,02 - 0,25)	0,000*	0,29 (0,09 - 0,92)	0,036*
PCG	0,24 (0,21 - 0,26)	0,000*	0,12 (0,03-0,43)	0,001*	0,19 (0,06 - 0,62)	0,005*	0,29 (0,09 - 0,87)	0,030*
SG	0,21 (0,07 - 0,60)	0,004*	0,09 (0,02 - 0,36)	0,001*	0,08 (0,02 - 0,28)	0,000*	0,54 (0,17 - 1,66)	0,279
THG	0,29 (0,09-0,83)	0,021*	0,08 (0,02 - 0,32)	0,000*	0,09 (0,03 - 0,36)	0,001*	0,49 (0,17 - 1,41)	0,188
OFA score		0,582		0,621		0,211		0,041*
Mild	1,00		1,00		1,00		1,00	
Moderate	0,70 (0,29 - 1,69)	0,430	1,53 (0,65 - 3,61)	0,330	2,18 (0,89 - 5,34)	0,088	0,69 (0,28 - 1,73)	0,431
Severe	0,58 (0,17 - 1,94)	0,378	1,25 (0,31 - 5,00)	0,749	1,03 (0,23 - 4,61)	0,972	4,19 (1,08 - 16,24)	0,038*
Breed		0,861		0,631		0,073		0,997
LR	1,00		1,00		1,00		1,00	
GSD	0,74 (0,24 - 2,28)	0,589	0,52 (0,14 - 1,92)	0,327	0,76 (0,21 - 2,76)	0,672	0,92 (0,26 - 3,28)	0,898
BM	0,63 (0,21 - 1,91)	0,411	0,46 (0,14 - 1,58)	0,217	0,35 (0,09 - 1,33)	0,121	0,92 (0,29 - 2,93)	0,893
DSD	0,79 (0,22 - 2,86)	0,724	0,43 (0,10 - 1,82)	0,249	0,17 (0,03 - 0,83)	0,028*	1,00 (0,24 - 4,15)	0,995
Sex								
Male	1,00		1,00		1,00		1,00	
Female	151 (0,76 - 2,99)	0,238	0,85 (0,37 - 1,97)	0,704	1,17 (0,49 - 2,79)	0,721	2,02 (0,89 - 4,55)	0,089
Age	0,90 (0,77 - 1,06)	0,216	0,912 (0,77 - 1,08)	0,299	0,9 (0,76 - 1,07)	0,229	1,14 (0,94 - 1,37)	0,180

IMPACT:

This study compared the effect of IA treatments in dogs with hip osteoarthritis. PC and hyaluronan showed better results in the management of OA