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A cross-over study evaluating the effect of the intra-articular administration of blood cell secretome alone or combined with triamcinolone in dogs with hip osteoarthritis

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Objectives

To evaluate the effect of blood cell secretome (BCS), an autologous orthobiologic, alone or combined with triamcinolone in dogs with bilateral hip osteoarthritis.

Methods

In a randomized, double-blinded, cross-over study, 15 dogs were selected and equally assigned to a BCS (BCSG), triamcinolone (TG), or combination group (BCS+TG). BCSG received an intra-articular administration of 3ml of BCS, TG received 0,5ml (20mg) of triamcinolone acetate, and BCS+TG a combination of both. BCS was obtained through extended coagulation of 15mL of venous blood in a defined environment, producing supraphysiological amounts of beneficial proteins. Cross-over was performed for BCSG and BCS+TG after 180 days. The Canine Brief Pain Inventory (divided into pain interference score - PIS and Pain Severity Score - PSS), Liverpool Osteoarthritis in Dogs (LOAD), and Canine Orthopedic Index (COI) were completed on days 0, 8, 15, 30, 60, 90, 120, 150, and 180 of each follow-up. Results were analyzed with the Mann-Whitney U test. Kaplan-Meier estimators were calculated, $p < 0.05$.

Results

Dogs had mean age of 9.6 ± 2.9 years and a bodyweight of 29.2 ± 3.9 kg. Seven hips were graded with severe and eight with moderate osteoarthritis. No differences were found at T0. BCS+TG had better PSS scores at +8d, as PIS, PSS, LOAD, COI's stiffness, and function scores from +15-+60d. Both groups showed similar improvements at +90-+120d. Kaplan-Meier estimators showed that BCSG had good results, but BCS+TG showed clinically-important differences for longer.

Statement (conclusions)

BCS alone improved osteoarthritis symptoms. It's combined use with triamcinolone led to greater, longer-lasting results.