**The effect of two nutraceuticals on experimentally induced acute synovitis**

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**Background:** Solid scientific evidence of the efficacy of nutraceuticals for equine osteoarthritis is lacking.

**Hypothesis:** Two specific nutraceuticals have positive effects on the degree of synovial inflammation compared to positive and negative control treatments.

**Methods:** This randomized, blinded, controlled study (approval ethical committee UGent n°2013/165), included 24 healthy Standardbred horses randomly allocated to supplement A (Cavalor ArtiTec (Liquid)®a, Nutriquine NV, Drongen, Belgium) for 28 days, supplement B (Hydro-P®, Sonac, Son, the Netherlands) for 60 days, meloxicam (Metacam®, Boehringer Ingelheim Vetmedica, Ingelheim/Rhein, Germany) 0.6 mg/kg for 4 days (positive control) or placebo for 60 days (negative control). Synovial inflammation was induced in the right intercarpal joint by intra-articular challenge with 0.5 ng lipopolysaccharide of E. Coli1 while treatments were continued for another 3 days. Synovial fluid analysis, blood hematology and routine biochemistry, and general clinical examination were performed before treatment, immediately prior to LPS-injection, and 8, 24 and 48 hours post-injection. Synovial fluid samples were analyzed for total nucleated cell counts (TNCC), total protein (TP), and selected biomarkers (PGE2, PGF2, GAG). Statistical analysis was performed using a linear model with random horse effects and with fixed time and treatment effects and their interaction.

**Results:** Before treatment and intra-articular challenge, there were no significant differences between treatment groups for synovial fluid cytology, biomarkers and clinical parameters. After intra-articular challenge, the placebo group showed significantly higher synovial fluid TP, TNCC, PGE2 and PGF2 compared to the meloxicam group. Both nutraceuticals resulted in significantly lower synovial fluid TP, TNCC and PGE2 compared to the placebo group. No adverse systemic effects were observed in any of the treatment groups.

**Conclusion:** These specific nutraceuticals decrease joint inflammation in a validated synovitis model.

**Reference**

1. De Grauw J.C., van de Lest C.H.A., van Weeren P.R. (2009). Arthritis Res. Ther. 11:R35.

a Ingredients: Glucosamine Sulphate 2KCL, Chondroitin Sulfate Sodium Shark, Methyl Sulfonyl Methane MSM, Boswellic Acid Dry Extract 65%, Ananasus Comosus extract 2500 GDU, L-Glutamine, Feverfew Dry Extract PE 4:1, Hyaluronic Acid