Single intra-articular injection of high concentrated hyaluronic acid - a pilot study in horses

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Introduction
The aim of this study was to objectively evaluate the effects of a single intra-articular (IA) injection of high concentrated (88 mg) and high molecular weight (HMW) hyaluronic acid (HA) in horses with clinical osteoarthritis (OA).

Materials and Methods
OA was diagnosed through lameness evaluation, anaesthetic blocks and digital radiographic examination. Lameness examination was performed subjectively and asymmetry was measured objectively using an inertial sensor device at weeks 1, 2, 4 and 8 after treatment. Synovial fluid (SF) analysis (viscosity, total protein (TP), and cytological examination) were evaluated before treatment and at the end of the study.

Results
Eight horses were included. One week after treatment 6 individuals subjectively improved, being significantly less lame ($P = 0.020$), but only 2 remained clinically better after two months. Subjective flexion test response improved in 4 horses at week 8.
Decreased asymmetry was observed in a straight line (week 1), after flexion in the forelimbs (week 1 and 2) and in the hind limbs (week 8) ($P = 0.016$). Synovial fluid showed significant reduction in TP at the end of the study ($P = 0.042$).

Discussion/Conclusion
In conclusion, a single 88 mg HMW-HA is safe, induces modest improvement in subjective lameness and asymmetry and reduces TP in SF. This could represent an alternative, in the short-term period, to drugs that are prohibited in competition for pain relief while preserving joint metabolism. A randomised, double blind, controlled study to further evaluate this therapy is warranted.