



Audio Summaries: Are bisphosphonates a more effective treatment than intra-articular steroids in horses with distal hock osteoarthritis?

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Hi, my name is Hannah Green and I'm a recently graduated Veterinarian from Washington State University. While I was in school, I wanted to write a Knowledge Summary that examined the evidence surrounding common equine practices, such as injecting intraarticular corticosteroids (IA steroids) to treat hock arthritis, distal tarsal, osteoarthritis, or OA is a highly prevalent disease with many possible treatments, but unfortunately no cure. This combination of a highly prevalent and incurable disease means that novel treatments often arise.

One such treatment is bisphosphonates. In this Knowledge Summary, I wanted to compare long-term efficacy between IA steroids and bisphosphonates as treatments for distal tarsal OA. What was most surprising to me was the lack of published evidence surrounding IA steroid use. There is no randomized controlled trial that supports their use as a treatment for hock OA. The strongest evidence for this practice in terms of experimental design comes from a 2007 retrospective study by Labens et al, in that paper Labens et al follow the outcomes of 51 horses treated with IA steroids for Hock OA. The authors used lameness scores, radiographs, and scintigraphy to assess the outcomes of treatment with IA steroids in either the tarsal, metatarsal or distal inner tarsal joints. They concluded the after a single treatment with an IA steroid lameness improved in 34 out of 59 or 58% of treated limbs at a median of 56 days Post-treatment. At telephone follow-up, a mean of 787 days after treatment, 38% of horses had a positive outcome, meaning they were used as intended, had no detectable lameness according to the owner and were not receiving NSAIDs. While the type of steroid and doses were not uniform between cases, they do reflect the day-to-day clinical treatment of Hock OA. This study reports a positive correlation in between treatment with IA steroids, for Hock OA, and a modest improved clinical outcome. But keep in mind, because this is not a randomized control trial, these findings are merely correlations that we cannot say that the treatments in the study are the cause of improved clinical outcomes.

Watts et al (2016) is a randomized control trial of his resveratrol supplementation and IA triamcinolone used to treat distal Hock OA. While the efficacy of the resveratrol intervention is not the subject of this PICO question, Watts et al do provide evidence that long term outcomes of intraarticular triamcinolone as a sole treatment for distal tarsal OA is suboptimal at two months, post triamcinolone treatment, 14 out of 20 horses showed improve performance. While at four months post-triamcinolone treatment, only 10 out of 20 horses showed improved performance Gough et al. (2010) is a randomized controlled trial that compared two treatment groups of horses with distal hock OA. The first group was treated with tiludronate IV infusion and the second group was given an IV placebo infusion. This study used lameness scores, level of exercise and radiographs to assess outcomes at day 60. The authors concluded that the lameness scores, the tiludronate group were significantly lower than the placebo group at day 60.

Furthermore, they concluded that 60% of horses in the tiludronate group improved by two or more lameness scores at day 60.

There are a number of limitations associated with this study, first distributions and frequencies of lameness scores for both the placebo group and the treatment group were not reported. Results were only presented in percentages, means and standard deviations, which made it difficult to assess the statistical power. Second, the study became unblinded at day 60. The study was also funded by the makers of tiludron while this funding source was clearly disclosed. It may have introduced bias. Third outcomes were assessed with subjective lameness grading that varied significantly between investigators. A final limitation is that this study does not address potential side effects of tiludronate. Despite the type of experimental design, a randomized control trial, there were significant limitations to the quality of the evidence, such that a wholesale change to clinical practice is not recommended based on this trial alone.

As the evidence currently stands, IA steroid treatment is the best way to manage horses with distal hock arthritis, but owners should be advised that expected improvements will be modest at best. 70% of horses may show improvements in the two months following treatment, by four months, post-treatment only 50% of horses will continue to show improvements.

Thank you so much for listening. If you are interested in learning more, please check out my paper in *Veterinary Evidence*.

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