Rationale for Adequan® i.m. Dosing Regimen

Marian G. Little, DVM Technical Services Veterinarian, Luitpold Pharmaceuticals

One of the most common causes of loss of use in the performance horse is lameness due to non-infectious degenerative and/or traumatic joint dysfunction. Adequan® i.m. (polysulfated glycosaminoglycan), has been available to veterinarians for management of equine degenerative joint disease (DJD) of the carpal and hock joints for almost three decades. Commonly asked questions relative to Adequan® i.m. dosing include:

1. “What is the FDA approved dosing regimen for Adequan® i.m.?”

Confirmed by findings from a Dose Titration Study, the recommended dosage of Adequan® i.m. is:

- 500 mg every 4 days for 28 days intramuscularly (for a total of 7 injections)

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Stay with it as the horse may enjoy greater mobility over a lifetime.2,3

Determine if Adequan is the right choice for your patients with DJD.
2. “Why is Adequan® i.m. administered every 4 days?”

- Pharmacokinetics of Adequan® i.m. 96 hours post-injection in the horse were investigated by Burba et al. Burba et al demonstrated that Adequan® i.m. diffused into the circulation, was transported into synovial fluid, and was absorbed by articular cartilage at therapeutic levels reported to inhibit certain cartilage degrading enzymes. These findings supported the FDA approved dosing regimen for Adequan® i.m.

  - Concentrations of Adequan® i.m. peaked in serum and synovial fluid within 2 hours post-injection, then rapidly declined and remained at or above therapeutic levels for the remainder of the 96-hour test period.

  - Concentrations of hyaluronic acid nearly doubled 48 hours post-injection, with significant increases noted from 24 to 96 hours.

  - Concentrations of Adequan® i.m. at or near therapeutic levels were detected in the cartilage of all eight horses 96 hours post-injection.

**After intramuscular administration, Adequan® i.m. is well-absorbed and reaches joints quickly:**

- **Peak levels achieved in the joints within 2 Hours**
- **HA nearly doubles at 48 Hours**
- **Detected in cartilage and subchondral bone up to 96 Hours**

Hyaluronic Acid (HA) levels nearly doubled at 48 hours with significant increases noted from 24 up to 96 hours.

Clinical significance of the above results is unknown.

**INDICATIONS**
Adequan® i.m. [polysulfated glycosaminoglycan] is recommended for the intramuscular treatment of non-infectious degenerative and/or traumatic joint dysfunction and associated lameness of the carpal and hock joints in horses.
3. “Are there “prophylactic” or “maintenance” dosing regimens for Adequan® i.m.?”

- No. Based on the pharmacokinetics established by Burba et al, persistence of Adequan® i.m. in equine serum, joint fluid, or articular cartilage beyond 96 hours has not been shown. No published data exists to support prophylactic or maintenance dosing regimens for Adequan® i.m. Furthermore, no prophylactic or maintenance dosing regimens are stated in the Dosage and Administration section of the package insert. Upon an initial diagnosis of DJD, treatment recommendations are to initiate the label 7-dose series (500 mg every 4 days for 28 days intramuscularly.) The series may be repeated as needed upon recurrence of the clinical signs of DJD and associated lameness of the carpal and hock joints.

When used at the labeled dosing regimen, Adequan® is proven to improve carpal flexion, resulting in reduced lameness.¹

![Graph showing improvement in carpal flexion](image)

**Over 50% Improvement in Maximum Carpal Flexion**

%A placebo-controlled, blinded dose titration study was conducted in a total of 36 healthy, mature horses that were either quarter horses or thoroughbreds. An induced adjuvant carpitis in the horse was used to assess the dose and efficacy of the intramuscular administration of Adequan® i.m. The adjuvant induced arthritis was produced with a single intraarticular injection of 0.5 mL of Freund's adjuvant. The various treatments comprised sterile saline solution as a placebo control and 50 mg, 125 mg, 250 mg, 500 mg and 1,000 mg of the active drug substance Adequan® i.m. dissolved in sterile water. Injections were given every 4 days for a total of 7 injections. Treatment followed a 10 day acclimation period and a five day model induction period.¹

**IMPORTANT SAFETY INFORMATION**

Studies have not been conducted to establish safety in breeding horses. **WARNING:** Do not use in horses intended for human consumption. Not for use in humans. Keep this and all medications out of the reach of children. **CAUTION:** Federal law restricts this drug to use by or on the order of a licensed veterinarian.

**Please see accompanying Full Prescribing Information.**
“Diagnosing horses with degenerative joint disease earlier is when we have the opportunity to make a difference. For us, a product that has i.m. administration and FDA approval behind it is an easy choice.”

Kelly B. Tisher, DVM

When you start with it and stay with it, the horse may enjoy greater mobility over a lifetime\(^2,3\). For nearly 30 years Adequan\(^\circledR\) has been used by leading veterinarians, top trainers and riders because of its ability to help improve joint function by:\(^4,5\)

- **REVERSES**
  - the disease cycle,
- **REPAIRING**
  - cartilage,
- **RESTORING**
  - joint lubrication,
- **REDUCING**
  - inflammation to help keep joints moving and horses performing.

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**References**

1. Freedom of Information Summary, Adequan\(^\circledR\) i.m. NADA 140-901 http://www.fda.gov/animalveterinary/products/approvedanimaldrugproducts/foiadrugssummaries/ucm054843.htm Accessed April 7, 2016.
5. Adequan\(^\circledR\) i.m. [package insert]. Shirley, NY: Luitpold Animal Health; 2008; 2017

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