EQUESTRIAN CANADA ÉQUESTRE

FACT SHEET: BISPHOSPHONATES

What are Bisphosphonates?

Biophosphonates are medications that protect bone health by slowing down bone reabsorption, and were initially developed to treat osteoporosis in humans.

How Do They Work?

They work by inhibiting osteoclasts**,** which are the cells that break down bone tissue during the bone remodeling process**.**

What is Their Use in Horses?

In horses, two bisphosphonates, clodronate (Osphos®) and tiludronate (Tildren®), have been approved by Health Canada for the treatment of navicular disease. Studies have shown an improvement in lameness scores (less lameness) that may occur over several weeks and may last several months.

The mechanism for decreasing lameness is not completely understood as it may be from decreased bone resorption or from an unexplained direct pain relieving effect.

What Are the Side Effects?

The two main side effects following administration of bisphosphonates to horses are colic and renal failure.

Transient colic can occur shortly after intravenous administration of Tildren® because the bisphosphonate will bind certain electrolytes (mostly calcium and magnesium) and affect gastrointestinal motility. The incidence of colic is less with Osphos®, as it is administered intramuscularly.

Cases of kidney toxicity have been reported following bisphosphonate administration**,** especially if NSAIDs (e.g., phenylbutazone, flunixin, firocoxib) are given concurrently.

What Are the Effects on Younger Animals?

It is not recommended to administer bisphosphonates to horses younger than 4 years old**,** as growing animals need active bone remodeling to allow skeletal growth and maturity.

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Recommendations:

- Obtain a blood chemistry panel to assess renal function before administering Osphos® or Tildren®.
- Do not administer bisphosphonates to horses younger than 4 years old.
- Do not administer bisphosphonates concurrently with NSAIDs or within 14 days of their administration.

Reference: *Review of Bisphosphonates use in Horses, Katja F.Duererdieck-Zellmer, AAEP conference proceeding 2016.*

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