
INFOSheet

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Phenylbutazone Use in Horses

Dr. Bob Wright

Phenylbutazone (Bute) is an analgesic (relieves pain) and anti-inflammatory medication, commonly used for the treatment of lameness in horses. It belongs to a group of medications known as non-steroidal anti-inflammatory drugs (NSAIDs). Phenylbutazone is available in many preparations for horses, including 1-gram tablets, oral paste syringes (containing 6 grams or 12 grams/syringe), an injectable (200 mg/ml in 100-ml vials) and oral powder. Bute is one of the most common medications administered to horses. Therefore, horse owners should be well aware of the health risks associated with this medication and the potential interactions that may occur when more than one medication is administered at the same time.

Horse owners should take care not to inhale the powder or ingest bute. Hands should be washed immediately after administering to prevent oral contamination since, in humans, bone marrow, renal, cardiovascular and gastrointestinal side effects are associated with use of this medication.

Horse Health Risk Data

Adverse reactions can occur after administering any medication. As with many of the NSAIDs, phenylbutazone should not be used in horses with a history of, or pre-existing hematologic or bone marrow abnormalities (bleeding disorders), or in animals with pre-existing gastrointestinal ulcers. Both phenylbutazone and its active ingredient, oxyphenbutazone, are highly bound to plasma proteins and, therefore, caution is advised when using this medication in horses with hypoproteinemia (low blood protein) and gastrointestinal ulceration. Foals are at greatest risk, especially if they have a heavy parasite burden or are undernourished. Phenylbutazone may cause decreased blood flow to the kidneys and result in sodium and water retention. Therefore, be cautious with its use in animals with pre-existing renal disease associated with congestive heart failure.

Phenylbutazone and its metabolite, oxyphenbutazone, cross the placental barrier and are excreted into the milk. Toxic effects that have been reported in horses include oral and gastrointestinal erosions and ulcers, hypoalbuminemia (low blood albumen), diarrhea, anorexia and renal effects (azotemia, renal papillary necrosis).

Interactions with Other Medications

Interactions between drugs may occur. Horse owners should be aware of some of the more common interactions. Phenylbutazone and its active metabolite (break down products), oxyphenbutazone, are highly bound to plasma proteins and may;

- displace other highly bound drugs and affect the serum levels and duration of action of **oral anticoagulants, other anti-inflammatory agents and sulfonamides, e.g., T.M.S.**

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- increase the metabolism of drugs (by stimulating the hepatic microsomal enzymes), e.g., **digitoxin and phenytoin**.
- increase the plasma half-life (slows the breakdown) of **penicillin G**.
- On the other hand, other drugs that affect the liver (microsomal enzyme inducers), such as **barbiturates, rifampin, or corticosteroids**, may decrease the plasma half-life of phenylbutazone (period the medication is in the body) by causing increased metabolism of phenylbutazone.
- Phenylbutazone may antagonize the increased renal blood flow effects caused by **furosemide**.
- Although the use of phenylbutazone, along with other NSAIDs, may increase the potential for adverse reactions developing, many clinicians routinely use phenylbutazone concurrently with **flunixin** in horses.
- Phenylbutazone and oxyphenbutazone may interfere with thyroid-function tests by competing with thyroxine at protein-binding sites or by inhibiting thyroid-iodine uptake.

Regulatory Control

This medication is approved for use in horses not intended for food.

Phenylbutazone and its metabolites are included in the list of drugs in the Drug Surveillance Program of the Canadian Pari-Mutuel Agency (CPMA), which regulates the Canadian racehorse industry. The CPMA has shown that, when two horses were administered;

- a single administration of 3 g intravenously, or
- a 3-g intravenous dose, once daily for 3 days or
- a single administration of 3 g orally or
- a 3-g oral dose once daily for three days,

the concentration of phenylbutazone was shown to decrease below detection level 96 hours after the last treatment.

Under the medication rules for Equine Canada; Article A1003 Permitted Medications, the use of any non-steroidal anti-inflammatory drug is permitted. However, only one (1) non-steroidal anti-inflammatory drug may be used. If more than one (1) non-steroidal anti-inflammatory drug is found in any sample, the test will be deemed positive. Samples found to contain medication will be subject to quantitative testing. The maximum permissible plasma concentration of phenylbutazone is 15.0 micrograms per millilitre. The rules of certain divisions are more restrictive and, in some cases, allow no drug or medication. The regulations regarding the use of medications in competition horses vary within disciplines and divisions, as well as jurisdictions. Therefore, appropriate precautions should be taken by contacting the governing body for your discipline to ensure that you are in compliance.

Recommendations for General Use

Phenylbutazone should only be given intravenously, using the injectable form, or orally. Accidental injection into the artery (e.g., carotid artery), rather than the vein (e.g., jugular vein), may cause seizures. Oral products should be stored in tight, child-resistant containers. The injectable product should be stored in a cool place (46° – 56°F) or kept refrigerated.

Oral products are the most common form of administration. The dosage should not exceed 4 grams/day. Initially, the high end of the dosage range is used, followed by the lowest effective dose. Oral preparations are often mixed with various flavours to improve their palatability. The powdered bute is tasteless at first, but it leaves a bitter after-taste. Horse owners may find administration easier if the bute powder is mixed with 2 teaspoonfuls of puréed apple sauce, loaded into a 25-cc syringe and administered into the back of the horse's mouth. **All medication must be given as directed by your veterinarian.**

References and More Information

Canadian Pari-Mutual Agency. Schedule of Drugs, Ottawa: Agriculture and Agri-Foods Canada, 2002:75.

North American Compendiums Ltd., Compendium of Veterinary Products, 8th ed. Hensall: 2003: 707.

Plumb D. Veterinary Drug Handbook, 4th ed. Minnesota: Iowa State Press, 2002: 656-658.

Dr. Bob Wright is a Veterinary Scientist, Equine and Alternative Livestock with the Livestock Technology Branch of the Ontario Ministry of Agriculture and Food, Wellington Place, R. R. # 1, Fergus, Ontario N1M 2W3,
Tel.: (519) 846-3412, Fax: (519) 846-8101,
E-mail: robert.wright@omaf.gov.on.ca

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Dr. Bob Wright, Ontario Ministry of Agriculture and Food, Fergus, Ontario, Canada

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This information sheet was developed to provide guidelines for the use and administration of phenylbutazone. The reader should always refer to the product monogram supplied with the medication. The use and interpretation of the information does not relieve or lessen any trainer's or owner's responsibility for assuring that, during a horserace or competition, a horse is free from any drug listed in the Controlled Drug Schedule governed by their discipline.

The content of this information sheet does not constitute and is not a warranty, guarantee, assurance, undertaking, or anything similar, that a horse would be free from any drug listed in the breed/discipline's regulations when following the recommendations as stated above.