

By Melissa Sykes

# BUTE:

## NOT THE ASPIRIN YOU THOUGHT IT WAS

RESEARCH CONDUCTED AT LOUISIANA STATE UNIVERSITY (LSU) AND PUBLISHED LATE LAST YEAR HAS DEMONSTRATED THE NECESSITY TO CLOSELY MONITOR THOSE HORSES TAKING THE NON-STEROIDAL ANTI-INFLAMMATORY DRUG (NSAID) PHENYLBUTAZONE (BUTE). NSAIDS ARE DRUGS THAT ALLEVIATE PAIN BY INHIBITING THE FORMATION OF PROSTAGLANDINS, THE CHEMICAL BYPRODUCTS OF INFLAMMATION. IN BUTE'S CASE, THE DRUG IS A NON-STEROIDAL ANTI-INFLAMMATORY DRUG IN THE SAME FAMILY OF DRUGS AS ASPIRIN. HOWEVER, BUTE IS TYPICALLY USED IN HORSES INSTEAD OF ASPIRIN BECAUSE OF ITS LONG DURATION OF EFFECT - TWELVE HOURS COMPARED TO FOUR TO SIX FOR ASPIRIN.





**VETERINARIANS AND HORSEMEN ARE AWARE THAT BUTE HAS BEEN SHOWN TO CAUSE GASTRIC ULCERS. IT HAS ALSO BEEN LINKED TO KIDNEY AND LIVER DAMAGE. HOWEVER, THE TEAM AT LOUISIANA STATE UNIVERSITY (LSU), LED BY REBECCA S. MCCONNICO, DVM, PH.D., DIPL. ACVIM, ASSOCIATE PROFESSOR, DEMONSTRATED THAT PROLONGED USE OF BUTE CAN BEGIN TO AFFECT INDIVIDUALS AS SOON AS THREE DAYS INTO TREATMENT – WITH SERIOUS CONSEQUENCES.**

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**DR. REBECCA S. MCCONNICO**

When asked what prompted the study, McConnico explained, “We constantly see cases where we suspect phenylbutazone toxicity. It seemed to many of us that bute has not been tolerated well in a large number of horses.”

McConnico and her associates administered approximately four grams of bute per day to a group of healthy adult horses over a 21-day period. The recommended dosage for a 1,000 pound animal is 2-4 grams per day, with a ceiling of no more than 4 grams per day, according to the manufacturer.

The study was funded by the Grayson-Jockey Club Foundation, Inc., and the foundation was the one that set the parameters for medication amounts.

“Grayson was very particular about that (the amount of bute administered),” explained McConnico. “They knew that there wouldn’t be a statistical difference [at the lower dose]. With research projects, you need to have a large enough difference in treatment versus control groups in order to be able to have the best chance of observing a difference.”

Specifically, what the researchers were looking at was what effect bute has on the right dorsal colon (RDC) of the horse.

“The RDC is mainly for the fermentation of feedstuffs (i.e. hay), absorption of volatile fatty acids, and fluid absorption,” explained McConnico. Volatile fatty acids are largely thought to be responsible for water absorption in the RDC.

What the group found was that after only three days of receiving bute, blood tests revealed low levels of albumin (protein made by the liver; low levels indicate the body may not be absorbing enough protein, causing liver disease), and low white blood cell count.

According to McConnico, the results demonstrate that there is extreme variability in how horses tolerate bute. “Some horses cannot even tolerate short-term administration of the drug.”

Even though racehorses are more closely monitored than almost any other kind of horses, owners and trainers cannot be expected to easily identify animals that are not tolerating bute – the symptoms would be very subtle. However, a downturn in performance after starting to take bute could be an indication.

“You wouldn’t see the horse at its best physically,” said McConnico. “These fluctuations could really affect a horse’s ability to perform.”

McConnico suggests blood tests after three to five days of treatment. If the horse is being adversely affected by the bute, the treatment should stop immediately.

“There are other drugs out there that are just as effective as bute – without the side effects,” McConnico asserted.

First brought to market in 1949, bute was used to treat gout and many forms of arthritis in humans. It was not long before bute was embraced by the veterinary community.

The state of Illinois approved bute as a race day medication at its pari-mutuel facilities in 1960. Since that time, all racing jurisdictions in the U.S. now permit horses to compete with bute in their system.

On Sunday, May 13, 1979, CBS News aired a “60 Minutes” episode titled “Doping the Horses.” The segment dealt with the practice of running horses on bute. The argument was that the use of bute would increase the number of starts per horse.

The “60 Minutes” segment aired on the heels of Spectacular Bid’s triumph in that year’s Kentucky Derby. “60 Minutes” interviewed various racetrack personalities – among them, sportswriter Russ Harris.

Harris had done his own informal study of the relationship between the average number of breakdowns at Keystone Park before and after the legalization of race day bute. His statistics were notably concerning. According to Harris' informal research, prior to bute use on race day, horses broke down on an average rate of one every 15 days. After the ban was lifted on the drug, the breakdowns averaged one every four days.

If you go back to when bute was first legalized, the Association of Racing Commissioners International (RCI) has some interesting statistics: in 1960, the average number of starts per horse in the U.S. was 11.31; in 1973 (the year of Secretariat) it was 10.23; in 1998, 7.29; and, in 2008, horses averaged 6.2 starts per runner. That is not to say that bute is directly responsible for the decline in starts per runner, but it does lead to the question of whether bute use may be one of the major contributing factors.

Bute has traditionally been sold to the racing industry as "the same thing as aspirin in humans." Currently, the RCI classifies bute as a Class 4 drug, defined as a "therapeutic medication with less ability to affect performance than Class 3 drugs."

According to Dr. Thomas Tobin's *Equine Drugs, Medications, and Performance Altering Substances: Their Performance Effects, Detection and Regulation*, "Therapeutic medications are substances used to maintain the health and welfare of horses."

One reason for bute's classification by the RCI as a Class 4 drug is because of the drug's pharmacologic action as a non-steroidal anti-inflammatory drug. Side effects of a specific drug have no influence on that drug's RCI classification.

According to Racing Medication and Testing Consortium (RMT) Executive Director Dr. Scot Waterman, "From the RMT and model rules standpoints, phenylbutazone is allowed to be used as a single, intravenous dose 24 hours


before a race. The model rules are silent on use of drugs in training, so there is no mention of chronic administration of phenylbutazone, which is what the LSU study refers to. There is currently no mechanism in this country to test for permitted medications in training, so there would be no way to regulate chronic administration ... This is where the sport relies on veterinarians, and horsemen need to use their professional judgments because the commission is not looking over their shoulders."

Waterman continued, "We looked at the scientific literature on bute when developing the 24-hour rule several years ago; we were comfortable that the analgesic (pain killing) effect was gone by the time the race would be run, and that was our chief concern."

Though bute's pain-killing effects clear the system quickly, the potential negative side effects of prolonged use may not. McConnico opined, "Phenylbutazone does have a pretty short half-life, but the adverse side effects can be present and remain for long periods of time. When bute was first brought to market, the FDA (Federal Drug Administration) wasn't as stringent as it is today. This drug (bute) should never have been approved. Today, there are better drugs on the market. Granted, they are more expensive (than bute), but with fewer side effects."

McConnico's comments suggest that it might be worthwhile for horsemen to ask their veterinarians about other alternatives to bute — particularly in cases where a horse may not seem to be tolerating bute well.

However, bute is less expensive than some other alternatives, and it does work in a certain population of horses. As a result, its widespread use is not likely to change anytime soon.

Realizing that fact, McConnico warns that, "Horses on bute should be strictly monitored. Some tolerate it quite well, but many do not." 

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