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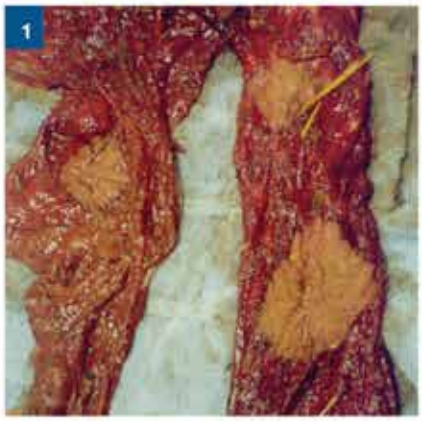
Proper biosecurity, vaccination plans and communication will help lower the risk of equine herpes outbreaks

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BY JENNIFER RYAN



A Different Look at Equine Antimicrobials

Using the right antimicrobial for the job is the rational choice, and Erin Groover, DVM, DACVIM-LA, wants equine veterinarians to ask themselves two basic questions before making a prescription:

1. Is this the right antibiotic to treat the infection I'm seeing?

2. Is the animal going to tolerate the antibiotic choice?



Erin Groover

Groover is an assistant professor of equine internal medicine at the Auburn University College of Veterinary Medicine. Her session, "Antimicrobials: Rational Use in Horses," was one of only six selected by the North American Veterinary Community (NAVC) as one of its top sessions of the year.

Groover says the goal of her session was to encourage veterinarians to look at antibiotics in a different way.

"We learned in school about the different properties of antibiotics," she says. "Once we start practicing, we get used to seeing a disease and giving an antibiotic. That's fine until you end up with some diseases where the antibiotic choice isn't appropriate, and there is not a good, rational reason to use an antibiotic that cannot kill the bacteria causing the infection."

Each antibiotic has its own specific properties. The key is to recognize those properties and pair the antimicrobial to the bacterial infection. For example, an antibiotic like penicillin has a gram-positive spectrum of activity. Pairing penicillin to a gram-negative bacterial infection in a horse is a poor choice for the patient.

Identify the target

Groover advises horse owners and veterinarians to identify the infection first. Then, choose an antimicrobial that is up to the task.

"You're going to make a lot more headway if you can identify the organism first, rather than just guessing," she says. "Sometimes, owners don't want to do the test to obtain samples for bacterial culture. If it comes down to financial constraints – maybe the test is expensive – it's not always practical in some scenarios. Some types of infection, like pneumonia, are well documented and commonly caused by specific types of bacteria. In those cases, veterinarians can choose the antibiotic for those common bacteria."

Financial considerations and speed of treatment are two familiar reasons not every infection is cultured and identified, Groover notes. Another consideration is ease of administration, which can affect owner compliance in continuing the treatment.

"Some owners only see horses once a day and can't give an antibiotic four times a day," she says. "Not every choice works for every patient. It's best to go back and evaluate each case separately."

Rational thinking

Selecting the right antimicrobial is important for patient success, Groover says. Yet, it's also important to maintain the continued effectiveness of antibiotics. Products used in horses are similar to those used in both humans and livestock. Farm animal antimicrobials are heavily regulated. On the other hand, horses are considered companion animals similar to dogs and cats.



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"There is a cultural difference for choices in horses," she says. "Most owners view their horse as equivalent to a pet. However, the principles are the same."

Distributor connection

Groover recommends distributors familiarize themselves with specific antimicrobial product labels. Then, understand how the product's properties make it a good choice for a specific disease.

Groover also recommends distributors understand potential adverse effects of products.

"Having a link between a distributor and a tech services vet makes the relationship more valuable," she says. ■

NAVC Session of the Year: Erin Groover's presentation, "Antimicrobials: Rational Use in Horses," was chosen as the large animal session of the year by veterinary professionals from around the world through attendee feedback. With a field of 350+ exceptional and nationally renowned veterinary speakers presenting more than 1,200 different sessions, it's an honor to be voted as a top speaker and session by event attendees.

The full conference proceedings are available online at: http://cms.vetfolio.navc.com/2017-large-animal-proceedings/antimicrobials-rational-use-in-horses

Learn more! Groover recommends these sources for additional reading on antimicrobials in horses:

- Dunkel B, Johns IC. Antimicrobial use in critically ill horses. Journal of Veterinary Emergency and Critical Care; 25(1): 1476-4431.
- Weese JS. Antimicrobial use and antimicrobial resistance in horses. Equine Veterinary Journal; 47(6):2042-3306.
- Weese JS, et al. ACVIM Consensus Statement on Therapeutic Antimicrobial Use in Animals and Antimicrobial Resistance. Journal of Veterinary Internal Medicine; 29(2):1939-1676.
- Weese JS, Guardabassi L, Jensen LB, Kruse H. Chapter 10. Guidelines for Antimicrobial Use in Horses. In: Guide to Antimicrobial Use in Animals. 2009



Ever-Vigilant Against EHV

Proper biosecurity, vaccination plans and communication will help lower the risk of equine herpes outbreaks

BY GRAHAM GARRISON

The news was alarming – and unfortunately – frequent. In the early 2000s, and even as late as 2011, news would break following a major horse show, at a race track or other equine industry event, where hundreds of horses gathered, that some of the horses participating were diagnosed with equine herpes virus 1 (EHV-1).

But what happened following those events was just as concerning. Horse owners, equine event producers, veterinarians and stakeholders across the industry would scramble to understand the full scope of these multistate outbreaks, when the number of horses affected was not immediately known and accurate information was hard to come by.

Lara Maxwell, DVM, Ph.D., Associate Professor of Pharmacology at Oklahoma State University says those headlines got the attention of the equine industry.

"After several large and well-publicized outbreaks occurred at barns, veterinary hospitals, racetracks, and horse shows since around the beginning of the new millennium, many equine events have become much more rigorous about vaccination status and monitoring horses for fever," she says.

Indeed, improved communication has been critical to getting a handle on herpes outbreaks, says Wendy Vaala, VMD, DACVIM, Associate Director Life Cycle Management – Equine, Merck Animal Health. "It was this heightened public rumor mill that prompted the development of the Equine Disease Communication Center," Dr. Vaala says. "The Equine Disease Communication Center now has its own website. It is an incredible resource for all kinds of infectious diseases, but the main reason it was initially created was because there was almost a hysteria that would accompany these herpes outbreaks, and the misinformation that would pass from horse owner to horse owner, veterinarians and farriers and horse show managers. It created this sense of panic. We realized there was so much misinformation going on that this new website is a safe place for veterinarians, government officials, horse owners, even owners of transportation companies to go as a central source for real-time info."

Preventing or at least limiting outbreaks will require educated equine stakeholders with a firm grasp of the disease's symptoms, biosecurity protocols and vaccination plan, experts say.

Understanding the virus

Herpesviruses represent an ancient group of viruses that affect many different groups of animals. Nine equid herpesviruses have been described and are divided into nine corresponding types, with EHV-1, EHV-2, EHV-3, EHV-4, and EHV-5 tied to differing clinical diseases in horses.

Symptoms of EHV-1 infection vary, but fever is a prevalent sign, says Dr. Maxwell. Upper respiratory disease is also associated with nasal and ocular discharge and lymphadenopathy in foals. "Few clinical signs may be noted in mares prior to abortion associated with EHV-1," she says. "Fever is often noted in horses prior to the development of Equine Herpesvirus Myeloencephalopathy (EHM), although fever might also be missed if the horse is not being monitored for fever. Other signs, such as nasal discharge and lymphadenopathy, are inconsistently observed in horses diagnosed with EHM."

EHV-1 virus can cause respiratory disease, abortion and neurologic disease, says Jeff Hall, DVM, Senior Veterinarian, Equine Technical Services, Zoetis. For respiratory disease, common symptoms include depression, fever, nasal discharge, swollen lymph nodes, poor performance and may advance to more severe respiratory diseases such as pneumonia. Abortion usually has no warning signs and typically takes place in the last third of pregnancy, says Dr. Hall. "Clinical signs for the neurologic form are highly variable and depend on the extent and location of the neurologic lesions. Common signs include partial to complete limb paralysis with the hind limbs most severely affected, bladder dysfunction, and loss of tail tone. Most horses with the disease remain alert and have a good appetite."

Equine Herpesvirus Myeloencephalopathy (EHM), the neurological form of the virus, is of particular concern. Prognosis for horses who test positive for EHV and then develop neurologic signs of EHM is often poor with fatality as high as 30 percent, according to the AAEP. In rare cases, horses with neurologic signs can recover from the infection but may retain neurologic deficits.

Treatment

For biosecurity reasons, once a horse is diagnosed with the herpes virus, the first step is to quarantine the horse to reduce spreading of the virus to other horses, says Dr. Hall. "The respiratory disease is generally mild and self-limiting and does not require specific treatment. In certain cases, non-steroidal anti-inflammatory medications, antibiotics, and mucolytics may be indicated. For abortion, no treatment is usually necessary, but rigorous biosecurity measures must be taken to protect other horses, especially pregnant mares."

For the neurologic disease, Dr. Hall says supportive care is essential to maintain adequate hydration and nutrition, placement of a urinary catheter to evacuate the bladder, regular manual emptying of the rectum due to paralysis and, if necessary, placement in a sling to assist with standing. "Common therapies include DMSO, NSAIDs, and antibiotics to prevent secondary infections. Antiviral therapy is becoming more common place for treatment of the neurologic form of the disease."

> "Since movement of horses is critical to so many aspects of the equine industry, the development of a vaccine that can effectively prevent EHM would help the industry enormously. In the meantime, the use of current vaccines and biosecurity measures are key to preventing dissemination of EHV-1, although outbreaks are still expected to occur."
>
> **– Lara Maxwell, DVM, Ph.D., Associate Professor of Pharmacology at Oklahoma State University**

Dr. Maxwell says that therapy for EHV-1 infection in weanling foals is primarily symptomatic, with administration of NSAIDs as needed for the comfort of the foal. Neonatal foals can be more severely affected, and there are some reports of oral acyclovir administration to these animals.

"Horses at risk for developing EHM have been treated with oral valacyclovir, since orally administered acyclovir is poorly absorbed in horses," she says. "Early treatment with valacyclovir may be important for its success, as one study indicated that treatment with valacyclovir was ineffective once neurological signs had already been observed. In these horses, intravenous ganciclovir administration limited further EHV-1 replication and disease. In any horse that already has neurological disease due to EHM, supportive care is the primary treatment,

although antiviral therapy may be indicated if the horse still has fever and EHV-1 viremia."

What vaccines can and cannot do

The problem with the equine herpes virus is its ability to go dormant, says Dr. Vaala. "We figure that the majority of horses out there are infected with herpes virus, regardless if their broodmares were or were not vaccinated against EHV-1 during pregnancy. Most horses probably become infected within the first months of life." Once exposed to EHV-1, horses often remain latently infected, waiting for some stressor to reactivate the virus.



"While EHV vaccines help prevent spread of disease, they are only part of the control strategy. When dealing with highly contagious diseases like EHV we should not become overly reliant on vaccines alone to provide complete protection. Good husbandry and common sense are critical."

– Wendy Vaala, VMD, DACVIM, Associate Director Life Cycle Management – Equine, Merck Animal Health

"When it comes to vaccination, there are a lot of diseases out there that when you vaccinate, you are trying to prevent the initial infection and prevent disease," Dr. Vaala says. "That's a cleaner, easier kind of target. For instance, we vaccinate against rabies, because we don't want the horse to contract rabies. It's a black or white situation. When we vaccinate for herpes virus, we realize that most of the horses vaccinated already harbor the virus. It becomes more complicated."

There are several vaccines that are approved to reduce upper respiratory disease to prevent abortions due to EHV-1 infection, says Dr. Maxwell. Current vaccines can reduce the severity of disease but are unlikely to completely prevent infection with EHV-1. No vaccine is licensed to prevent EHM, but since vaccination generally decreases nasal shedding of virus, vaccination is still indicated to reduce the likelihood of EHM outbreaks.

Those limitations highlight what herpes vaccines can and cannot do, says Dr. Vaala. "Most vaccines will produce a good antibody response. We know those neutralizing antibodies can help decrease nasal shedding of free virus. But EHV-1 is good at hiding in protected areas within the horse including inside white blood cells, lymph nodes and neurons. Antibodies alone are often unable to eradicate virus hiding in those areas. So, if I have well-vaccinated horses coming in to showgrounds, and they're exposed to a new herpes strain, or because of transport and competition related stress they reactivate their own internal herpes virus, with a good vaccination program we hope it decreases their ability to shed the virus to other horses. So, it might help contain a potentially bad outbreak."

Vaccination frequency

Dr. Vaala says that even with vaccinations, horse owners need to be vigilant about basic biosecurity for their horses, such as maintaining good hygiene practices, and monitoring how horses come in contact with one another at all shows. "None of the current vaccines provide a horse a foolproof plate of armor. Even vaccinated horses still have the potential to develop neurologic disease due to EHV-1."

For horses that are traveling, or showing, in high risk conditions such as fairs, tracks or at facilities where other horses are constantly coming and going from other events, it's recommended they be vaccinated every six months with an EHV vaccine. Dr. Vaala says that an EHV-1 vaccine would be ideal over combination vaccines where herpes virus is just one of several antigens in the vaccine.

There's also been an ongoing discussion among EHV experts that over vaccination for herpes virus may produce unpredictable immune responses that could be detrimental to a horse's health, Dr. Vaala says. "More is not always better, particular when it comes to this virus." In one study that looked retrospectively at an outbreak of EHV-1 /EHM among a large population of cutting horses, positive risk factors included the stress on the horse, spending more time in common areas or being entered into more events. "The other positive risk factor was having been vaccinated within five weeks of arriving at

the showgrounds." Another study from researchers at Cornell demonstrated mixed immune responses among horses that received frequent EHV vaccinations over an 8-month period.

"We're still learning how to best stimulate the immune system, but I think moderation when it comes to how frequently we vaccinate against equine herpes virus is probably the way to go," Dr. Vaala says. "I think the AAEP vaccination guidelines and USEF guidelines – which recommend to vaccinating horses in high-risk environments every six months with an EHV vaccine – is a good place to start, unless there's a sound medical reason to vaccinate more frequently."

Good biosecurity practices

Dr. Vaala says biosecurity is critical when it comes to this disease. "While EHV vaccines help prevent spread of disease, they are only part of the control strategy. When dealing with highly contagious diseases like EHV we should not become overly reliant on vaccines alone to provide complete protection. Good husbandry and common sense are critical."

Dr. Maxwell says biosecurity has been successful at controlling the impact of EHV-1 outbreaks. "For example, racetracks may refuse to admit horses that are arriving from an area currently under quarantine for EHV-1 and require a recent health certificate showing that the horse was free from signs of EHV-1 infection," she says. "Successful quarantine measures, including monitoring of EHV-1 spread by PCR and body temperature, separation of infected horses, and use of appropriate disinfectants, have helped to limit the impact of outbreaks when they do occur. Many venues require proof of prior vaccination of horses for EHV-1 and may require that vaccination be administered every few months."

Since movement of horses is critical to so many aspects of the equine industry, the development of a vaccine that can effectively prevent EHM would help the industry enormously, Dr. Maxwell says. "In the meantime, the use of current vaccines and biosecurity measures are key to preventing dissemination of EHV-1, although outbreaks are still expected to occur. Twice daily monitoring of body temperature is an inexpensive and useful tool for screening horses at risk for EHM, and valacyclovir therapy can be instituted early in these patients. Unfortunately, antiherpetic drugs are not presently approved for use in horses, so use of the human drug can be quite expensive. Therefore, the development of more effective drugs, like ganciclovir, for use in horses at risk for EHM could also be an important management tool."

Good biosecurity measures include limiting horse to horse contact, washing your hands between handling horses, and not sharing common use items like a tube of paste, such as oral medications, among horses. Sharing bits and being careful about having multiple horses using the same feed or water buckets, are other things to consider, says Dr. Vaala. "Even trailers that transport a lot of horses back and forth between shows need to be cleaned between shipments. We know the virus can linger outside the horse long enough that it could be transmitted via respiratory secretions. The virus is not difficult to kill with good soap and water and routine disinfectants."

Dr. Hall says that both the AAEP and the ACVIM have taken leadership in providing guidelines and documentation on how best to deal with an EHV-1 outbreak and how to help limit its impact. "The keys are to detect sick horses early with identification of fevers through twice daily rectal temperatures and recognizing clinical signs early," he says. "If there are any signs of disease, it is best to quarantine the horse immediately for treatment and perform the proper diagnostic tests to identify the infectious agent. Horses with neurological disease should be kept isolated for a minimum of 14 days, although longer periods of up to 28 days have been recommended. Use of good hygiene measures can go a long way." ■

Additional steps to limit EHV-1

Jeff Hall, DVM, Senior Veterinarian, Equine Technical Services, Zoetis, offered the following steps for horse owners to consider:

- Minimize your horses exposure to other horse's
- Quarantine new horses that are brought onto the farm for 21 days before introducing them to the herd
- Keep tack separate for each horse
- Never share water sources
- Reduce stress
- Stay current on the respiratory and abortion EHV-1 vaccines
- Call your veterinarian EARLY if you detect any illness in your horse

EHM & EHV-1 Frequently Asked Questions

Source: American Association of Equine Practitioners Guidelines website

1. How do we handle horses returning from events where they may have been exposed to EHV-1?

For horses that may have been exposed to the risk of infection, there are some steps to take to mitigate the risk at their home facility. Even if these horses are returning home from events at which no disease was reported, and even if these horses appear healthy, precautions are needed as these horses could bring a contagious pathogen home and spread it at their home farm – this is the classic way EHV-1 spreads:

- These horses should be isolated from any other horses when they return to their home facility. Isolation requires housing them away from other horses, using different equipment to feed, clean and work with them than is used with any other horses, and rigorous hygiene procedures for horse handlers (hand hygiene, wearing separate clothes when coming in contact with isolated horses, etc.). Please discuss this with your veterinarian.

EHV-1 vaccines have been shown to reduce nasal shedding and, in some cases, reduce viremia.

- We strongly advise owners to call their veterinarians to discuss how long to keep the horses isolated at home, but even if they don't develop fevers this should be at least 21 days.

- These horses should have their temperature taken twice a day, as elevated temperature is typically the first and most common sign of infection – horses with elevated rectal temperatures (101.5 F or greater) should be swabbed by your veterinarian to find out whether they are shedding EHV-1.

- If a horse develops a fever and is found to be shedding EHV-1, then the level of risk to other horses on the premises increases significantly. Affected farms should work closely with their veterinarian to manage that situation, if it develops.

- The American Association of Equine Practitioners (AAEP) has an extensive set of Equine Herpesvirus (EHV) Control Guidelines that serve well as a resource for practitioners.

2. What do we do if we already have a potentially exposed horse on a farm?

- It still makes sense to isolate the exposed horse from other horses; even though it may have already been in contact with other horses, start isolation procedures to stop further exposure. It is very important to not mix horses from different groups to accomplish this. Try and isolate the suspect horse without moving other horses from one group to another – segregation of horse groups is the key, because this will help you reduce spread if an outbreak starts.

- Check temperatures of all horses on the farm twice daily (fever spikes can be missed if you check once daily). If fevers are detected, then isolate the horse and test for EHV-1.

The value of starting healthy horses on anti-viral treatment when there is no evidence of disease on the farm is questionable. The treatment is expensive, the drug (Valtrex™ - valacyclovir) may have limited availability,

and prophylactic therapy against EHM will only work while drug is being administered. Therefore, it is more likely to be effective if administered when fever is first detected (see below).

3. What anti-viral treatments can I use against EHM on a farm?

- If EHM is present on a farm, then the risk of developing EHM to other horses at that farm is greatly increased. Stringent quarantine and biosecurity procedures must be implemented immediately.

- Treatment of horses with clinical neurological disease (EHM) is largely supportive – the use of anti-viral drugs is not known to be of value at this stage. Use of anti-inflammatory drugs is recommended: flunixin meglumine (0.5 to 1 mg/kg, IV, q 24 hours).

- For horses on the farm that develop fever, test EHV-1 positive, or have a high risk of exposure, anti-viral drugs may decrease the chance of developing EHM.

- Currently, the treatment of choice in a febrile EHV-1 infected horse to prevent the development of EHM is Valacyclovir (Valtrex™), given orally. The use of oral acyclovir is unlikely to be of any value, as it is poorly absorbed from the GI tract.

- We currently recommend Valacyclovir (Valtrex™) for prophylactic therapy at a dose of 30 mg/kg q 8 hr for two days, then 20 mg/kg q 12 hr for 1-2 weeks. Maintain on higher dose rate if the horse is still febrile.

- The use of Valacyclovir in horses that have already developed signs of EHM is questionable at this time. In that circumstance the use of intravenous Ganciclovir is preferable as it may have greater potency against the disease. The dose of Ganciclovir is 2.5 mg/kg q 8 hr IV for one day then 2.5 mg/kg q 12 hr IV for one week.

- Administration of a zinc-containing supplement may be beneficial based on a recent epidemiologic study that found a decreased risk of EHM associated with owner-reported dietary zinc supplementation.

4. Is there any value to using booster vaccination against EHV-1 at this time?

- Unfortunately, there is not a licensed EHV-1 vaccination product with a label claim for prevention or control of EHM.

- EHV-1 vaccines have been shown to reduce nasal shedding and, in some cases, reduce viremia. These products may therefore have some theoretical value against EHM by reducing viremia, and certainly against spread of the virus by reducing viral shedding in the environment.

- If horses on the farm are previously vaccinated against EHV-1 then booster vaccination should quickly increase immunity, and perhaps reduce spread of EHV-1, if it is present.

- Vaccination in these circumstances is controversial, as some authorities speculate that immunity to EHV-1 may play a role in the development of EHM. While this is unproven, it remains a possibility. The use of vaccination is therefore a risk-based decision.

- Vaccination has no value as a treatment in affected horses.

Protect your Practice & Facility

During an outbreak, caution is recommended at all times to reduce spread of infection. Movement of horses on and off farms should be limited whenever possible. Reducing stressful activity of the at-risk horse can assist control methods as well.

Protect your own practice and hospital from becoming part of the problem. Heighten your biosecurity, as mentioned in the AAEP EHV Control Guidelines.

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INDICATION: For prevention of fescue toxicosis in periparturient mares.

Contraindication: Horses with hypersensitivity to domperidone should not receive EQUIDONE Gel.

WARNINGS: Failure of passive transfer of immunoglobulins (IgG) may occur when using EQUIDONE Gel even in the absence of leakage of colostrum or milk. All foals born to mares treated with EQUIDONE Gel should be tested for serum IgG concentrations. Do not use in horses intended for human consumption.

HUMAN WARNINGS: Not for use in humans. For oral use in animals only. Keep this and all drugs out of the reach of children. Pregnant and lactating women should use caution when handling EQUIDONE Gel, as systemic exposure to domperidone may affect reproductive hormones. Consult a physician in case of accidental human exposure.

PRECAUTIONS: EQUIDONE Gel may lead to premature birth, low birth weight foals or foal morbidity if administered >15 days prior to the expected foaling date. Accurate breeding date(s) and an expected foaling date are needed for the safe use of EQUIDONE Gel.Do not use in horses with suspected or confirmed gastrointestinal blockage, as domperidone is a prokinetic drug (it stimulates gut motility).

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Industry News

AAEP Foundation's Equine Disaster Relief Fund to aid in Hurricane Harvey recovery efforts

The American Association of Equine Practitioners (AAEP) Foundation's Equine Disaster Relief Fund is accepting aid to help horses in Texas, Louisiana and other states affected by Hurricane Harvey, according to a release. Fund donations will be distributed among credible programs and organizations that are helping with recovery and rebuilding efforts in the aftermath and towards preparedness efforts for future disasters.

The AAEP Foundation will work with agencies and veterinary members in Texas, Louisiana and other affected states to identify the needs of the equine community. Supplies are not being accepted currently as the catastrophic storm is still occurring. Once the Foundation receives an assessment of need and distribution protocols from the agencies and veterinary members in the afflicted areas, the Foundation will work to support them with supply needs as well.

"The AAEP, AAEP Foundation and the equine veterinary community are saddened by the tragic loss of life and incredible destruction and flooding caused by Hurricane Harvey," said AAEP President R. Reynolds Cowles, Jr., DVM. "We are compelled to reach out, together with our members, horse owners and industry leaders, as part of the effort to support the disaster's equine victims."

Boehringer Ingelheim unveils new brand platform

Boehringer Ingelheim (BI) announced it is introducing its new brand platform: Unbridle Your Potential. In short, BI provides health care products that will help unlock the potential in each horse. "Every BI brand plays a role in helping horses reach their potential," the company said in a release. "As the leading equine health company in the United States, BI recognizes that the community that cares for horses day in and day out requires products that are trusted to perform, allowing each horse to achieve its potential. Unbridle Your Potential is about bringing out the best in everyone – veterinarians, horse owners, trainers and the horses we all love." The Boehringer Ingelheim equine portfolio consists of:

- GastroGard® (omeprazole) and UlcerGard® (omeprazole)

(Continued page 12)



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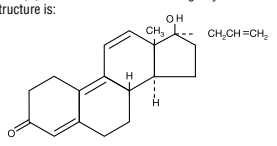
Revolutionary Disinfectants for Infection Control & Biosecurity

ANADA # 200-481, Approved by FDA

OvaMed®
(altrenogest)
SOLUTION 0.22% (2.2 mg/mL)

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

DESCRIPTION: OvaMed® (altrenogest) Solution 0.22% contains the active synthetic progestin, altrenogest. The chemical name is 17α-allyl-17β-hydroxyestra-4,9,11-trien-3-one. The CAS Registry Number is 850-52-2. The chemical structure is:



Each mL of OvaMed® (altrenogest) Solution 0.22% contains 2.2 mg of altrenogest in an oil solution.

ACTIONS: OvaMed® (altrenogest) Solution 0.22% produces a progestational effect in mares.

INDICATIONS: OvaMed® (altrenogest) Solution 0.22% is indicated to suppress estrus in mares. Suppression of estrus allows for a predictable occurrence of estrus following drug withdrawal. This facilitates the attainment of regular cyclicity during the transition from winter anestrus to the physiological breeding season. Suppression of estrus will also facilitate management of prolonged estrus conditions. Suppression of estrus may be used to facilitate scheduled breeding during the physiological breeding season.

CONTRAINDICATIONS: OvaMed® (altrenogest) Solution 0.22% is contraindicated for use in mares having a previous or current history of uterine inflammation (i.e., acute, subacute, or chronic endometritis). Natural or synthetic gestagen therapy may exacerbate existing low-grade or "smoldering" uterine inflammation into a fulminating uterine infection in some instances.

PRECAUTIONS: Various synthetic progestins, including altrenogest, when administered to rats during the embryogenic stage of pregnancy at doses manyfold greater than the recommended equine dose caused fetal anomalies, specifically masculinization of the female genitalia.

DOSAGE AND ADMINISTRATION: While wearing protective gloves, remove shipping cap and seal; replace with enclosed plastic dispensing cap. Remove cover from bottle dispensing tip and connect luer lock syringe (without needle). Draw out appropriate volume of OvaMed® solution. (Note: Do not remove syringe while bottle is inverted as spillage may result.) Detach syringe and administer solution orally at the rate of 1mL per 110 pounds body weight (0.044 mg/kg) once daily for 15 consecutive days. Administer solution directly on the base of the mare's tongue or on the mare's usual grain ration. Replace cover on bottle dispensing tip to prevent leakage. Excessive use of a syringe may cause the syringe to stick; therefore, replace syringe as necessary.

DOSAGE CHART:

Approximate Weight in Pounds	Dose in mL
770	7
880	8
990	9
1100	10
1210	11
1320	12

WHICH MARES WILL RESPOND TO OVAMED® (altrenogest) SOLUTION 0.22%: Extensive clinical trials have demonstrated that estrus will be suppressed in approximately 95% of the mares within three days; however, the post-treatment response depended on the level of ovarian activity when treatment was initiated. Estrus in mares exhibiting regular estrus cycles during the breeding season will be suppressed during treatment; these mares return to estrus four to five days following treatment and continue to cycle normally. Mares in winter anestrus with small follicles continued in anestrus and failed to exhibit normal estrus following withdrawal.

Response in mares in the transition phase between winter anestrus and the summer breeding season depended on the degree of follicular activity. Mares with inactive ovaries and small follicles failed to respond with normal cycles post-treatment, whereas a higher proportion of mares with ovarian follicles 20 mm or greater in diameter exhibited normal estrus cycles post-treatment. Altrenogest solution 0.22% was very effective for suppressing the prolonged estrus behavior frequently observed in mares during the transition period (February, March and April). In addition, a high proportion of these mares responded with regular estrus cycles post-treatment.

SPECIFIC USES FOR OVAMED® (altrenogest) SOLUTION 0.22%:

Suppression Of Estrus To:

1. Facilitate attainment of regular cycles during the transition period from winter anestrus to the physiological breeding season. To facilitate attainment of regular cycles during the transition phase, mares should be examined to determine the degree of ovarian activity. Estrus in mares with inactive ovaries (no follicles greater than 20 mm in diameter) will be suppressed but these mares may not begin regular cycles following treatment. However, mares with active ovaries (follicles greater than 20 mm in diameter) frequently respond with regular post-treatment estrus cycles.
2. Facilitate management of the mare exhibiting prolonged estrus during the transition period. Estrus will be suppressed in mares exhibiting prolonged behavioral estrus either early or late during the transition period. Again, the post-treatment response depends on the level of ovarian activity. The mares with greater ovarian activity initiate regular cycles and conceive sooner than the inactive mares. OvaMed® (altrenogest) Solution 0.22% may be administered early in the transition period to suppress estrus in mares with inactive ovaries to aid in the management of these mares or to mares later in the transition period with active ovaries to prepare and schedule the mare for breeding.
3. Permit scheduled breeding of mares during the physiological breeding season. To permit scheduled breeding, mares which are regularly cycling or which have active ovarian function should be given OvaMed® (altrenogest) Solution 0.22% daily for 15 consecutive days beginning 20 days before the date of the planned estrus.

- Vaccines including Vetera® and Calvenza®
- A joint health portfolio that includes Legend® (hyaluronate sodium) Injectable Solution, Hyvisc® (hyaluronate sodium), Hyalovet® (hyaluronate sodium), Vetalog® Parenteral (triamcinolone acetonide injectable suspension), Surpass® (1% diclofenac sodium) and Equioxx® (firocoxib)
- Prascend® (pergolide tablets)
- Marquis® (15% w/w ponazuril)
- Zimecterin® Gold (ivermectin/praziquantel) and ZIMECTERIN (ivermectin)

"We're excited about this new brand platform as it represents our leadership in the equine health industry and the understanding that everyone who cares for horses wants to see each animal do its best," says Dave Gocken, species head of the U.S. Equine Business Unit, Boehringer Ingelheim. "Whether it's racing, performing, trail riding or any other number of activities, our products give everyone the opportunity to reach their potential. At its core, Unbridle Your Potential is about the passion people have in caring for their horses, and we're pleased to help bring that passion to life with our leading product line-up."

West Nile virus case reported in Delaware

According to *TheHorse.com*, the Delaware State Veterinarian's Office reported in August that it has confirmed that state's first case of West Nile virus (WNV) in a horse in 2017. The affected horse, an 11-year-old Quarter Horse mare residing in Kent County, began showing signs of weakness in all four limbs on Aug. 6. The mare lost the ability to stand and was euthanized on Aug. 9. Samples were submitted to the Delaware Public Health Laboratory on Aug. 10, which confirmed the diagnosis of WNV on August 14. The affected mare was not currently vaccinated against WNV.

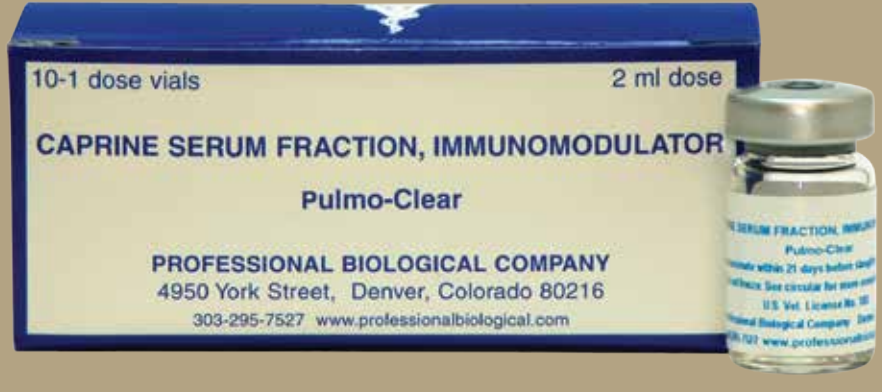
Two rabies cases confirmed in North Carolina

According to *TheHorse.com*, animal health officials in North Carolina have confirmed that a second Polk County horse has been confirmed positive for rabies. This follows another case confirmed in mid-August. A North Carolina Department of Agriculture and Consumer Services representative told *The Horse* Aug. 31 that both horses were from the same Polk County farm. That facility has imposed a 45-day voluntary quarantine following the confirmed cases, the representative said. Rabies – a zoonotic disease that can be spread from animals to humans – is caused by a lyssavirus that affects the neurologic system and salivary glands. Horses are exposed most commonly through the bite of another rabid animal.



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