HEALTH ZONE / Contagion Concerns



Maintaining a clean facility is one starting point of being proactive in preventing and containing the spread of contagious diseases

Vaccinations Just a Start

IN BATTLING CONTAGIOUS DISEASE, KEEPING BARN MANAGEMENT UP TO DATE CRITICAL

By AMANDA DUCKWORTH

AFTER THE PAST several years most people are all too familiar with protocols aimed at containing the spread of a contagious disease. When it comes to equine care, contagion concerns long have been a part of good barn management.

While speaking on fire awareness and prevention, Ben Franklin is credited with advising in 1736 that, "an ounce of prevention is worth a pound of cure," but that axiom can just as easily be transferred to barn biohazard safety protocols. Following standard vaccine recommendations and maintaining a clean facility are starting points of being proactive. While a plan is important, creating and maintaining protocol are not always something that happen. A willingness to listen to and follow veterinary advice is a crucial part of the process, meaning veterinarians are more aware than ever about the importance of being able to communicate effectively.

As the Equine Disease Communica-

tion Center explains: "In the equine industry, biosecurity refers to the precautions we take to limit the spread of disease when working with horses. These preventative measures are vital to maintaining the health of all horses regardless of their occupation, whether they be a companion animal, a working horse, or a show animal. Even the smallest precautions can help to keep horses safe from infectious diseases.

"Best practices in disease prevention include a combination of following a vaccination plan and taking simple, but important, biosecurity measures in your barn while traveling, at events, and when caring for your horse. Suggested biosecurity protocols differ, depending on the situation and location."

Core vaccinations, supported by both the American Veterinary Medical Association and the American Association of Equine Practitioners, include tetanus, eastern equine encephalomyelitis, western equine encephalomyelitis, West Nile virus, and rabies. Risk-based vaccination guidelines cover things such as anthrax, botulism, equine herpesvirus, equine influenza, equine viral arteritis, leptospirosis, Potomac horse fever, rotaviral diarrhea, snake bite, strangles, and Venezuelan equine encephalomyelitis.

In addition to making sure a horse has its proper vaccines, it is important to keep up-to-date records. Any time a horse relocates, copies of its vaccination and health maintenance records should also make the trip. Equally important, is that equine facilities establish clear health entry requirements.

In addition to having access to vaccines, the healthier and happier a horse is in general, the better chance it has at dealing with disease. As the EDCC explains, reducing stress and optimizing nutrition can help protect horses. Stress can compromise immune systems; making horses more susceptible to infection while healthy horses are more likely to be able to fight off possible infections.

The AAEP also notes other external factors that can contribute to increased infectious disease risk include overcrowding; parasitism; inadequate sanitation; contaminated water source/supply; concurrent disease; inadequate rodent, bird, and insect control; and movement of people, vehicles, and/or equipment on and off facilities during infectious disease outbreaks.

Beyond maintaining general good health and following vaccination protocols, a core part of barn management is having a system in place to

help prevent disease breakouts. The AAEP has published and recently updated an in-depth document explaining general biosecurity guidelines for those looking for a place to start and for others aiming to ensure systems are up to current standards.

"While there are overarching infection control principles which have broad applicability across most diseases and facility types, every equine event and every premises is unique," explained the AAEP. "Therefore, it is important for veterinarians to work with other event and/or facility stakeholders in advance of an urgent issue (i.e., *before* an outbreak) to develop plans that are practical and effective for the particular facility in question. Many people focus on the 'outbreak management' aspect of biosecurity, but arguably more important are the day-to-day biosecurity practices that minimize the likelihood of a disease outbreak in the first place or make it easier to quickly contain an outbreak with minimal disruption and expense.

"Therefore, a comprehensive biosecurity plan developed collaboratively with an equine veterinarian includes implementing routine preventative protocols that take into consideration all means by which infectious disease could be introduced and spread, as well as developing protocols for responding to confirmed or suspected cases of infectious disease."

Obviously, how to prevent and mitigate contagion within the equine community is a global concern. In April 2022, the German journal *Tierarztliche Praxis Ausgabe G: Grosstiere—Nutztiere* published the review "Management and hygiene measures during an outbreak of herpes, influenza, strangles, or infections with multidrug resistant bacteria."

"General cleanliness, hand hygiene, avoidance of stress, regular deworming, and vaccinations belong to the basic hygiene measures in a horse herd," explained researchers. "All new or returning equids should be submitted to a quarantine period as an important prevention measure. Repeated washing and disinfection of hands might prevent spreading of infectious agents to people and horses. The conception of a hygiene plan, including general biosecurity procedures



Veterinarians are aware of the importance of effective communication

and standard operating procedures in a case of an outbreak of an infectious disease, zoonosis, or colonization with multi-resistant bacteria, is strongly recommended.

"As soon as the disease is suspected, extended hygiene measures including protective clothing, cleaning, disinfection, and isolation of potentially infected animals should be implemented. Prompt confirmation of the

2022/23 BLOODHORSE HealthZone Topics



Altren® (altrenogest)

SOLUTION 0.22% (2.2 mg/mL) CAUTION

Federal law restricts this drug to use by or on the order of a licensed

DESCRIPTION:

Altren[®] (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 Altren® (altrenogest) Solution 0.22% contains 2.2 mg of altrenogest in an oil solution.

ACTIONS: Altren® (altrenogest) Solution 0.22% produces a procestational effect in mares.

INDICATIONS

Altren® (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 ent of regular cyclicity during the transition 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 accession breeding seasor

CONTRAINDICATIONS:

CONTRANDICATIONS: Altren® (altrenogest) Solution 0.22% is contra-indicated for use in mares having a previous or current history of uterine inflammation (i.e., acute, subacute, or chronic endometrilis). Natural or synthelic gestagen therapy may exace/bate 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 mascu-linization of the female genitalia.

DOSAGE AND DIRECTIONS:

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 Altren® solution. (Note: Do not remove syringe while bottle is inverted as spillage may result.) while bottle is inverted as spillage may result.) Detach syringe and administer solution orally at the rate of 1 mL per 110 pounds of 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 mice. Denline cause can both disconcient file ration. Replace cover on bottle dispensing tip to prevent leakage. Excessive use of a syringe may cause the syringe to stick; therefore, replace svringe 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 ALTREN

(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 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 ment followe contextual and continue and follow small follicles continued in anestrus and failed to exhibit normal estrus following withdrawal

nonse in mares in the transition phase between winter anestrus and the summer breed-ing season depended on the degree of follicular activity. Mares with inactive ovaries and small follicles failed to respond with normal cycles posttreatment, 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 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 ALTREN® (altrenogest) SOLUTION 0 22%

SUPPRESSION OF ESTRUS TO:

Facilitate attainment of regular cycles during the transition period from winter anestrus to

the physiological breeding season. To facili-

the physiological breeding season. To facil-tale 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 fol-licities greater than 20 mm in diameter) will be suppressed but these mares may not begin requires crucke following treatment. However, the output crucke following treatment. However, the suppressed but these mares may not begin the supersed but the

regular cycles following treatment. However,

res with active ovaries (follicles greater

than 20 mm in diameter) frequently respond with regular post-treatment estrus cycles.

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 leve

of ovarian activity. The mares with greater

of ovarian activity. The mares with greater ovarian activity initiate regular cycles and conceive sconer than the inactive mares. Altren^{*} (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

Permit scheduled breeding of mares during

the physiological breeding season. To permit scheduled breeding, mares which are regularly cycling or which have active ovariar

function should be given Altren® (altrenogest)

Solution 0.22% daily for 15 consecutive days

Solution 0.22% daily for 15 consecutive day beginning 20 days before the date of the planned estrus. Ovulation will occur 5 to 7 days following the onset of estrus as expect for non-treated mares. Breeding should follow usual procedures for mares in estrus.

Mares may be regulated and scheduled either

A 3-year well controlled reproductive safety study was conducted in 27 pregnant mares, and compared with 24 untreated control mares. Treated mares received 2 mL altrenogest solution 0.22%/110 b body weight (2x dosage

recommended for estrus suppression) from day 20 to day 325 of gestation. This study provided

1. In filly offspring (all ages) of treated mares,

2. Filly offspring from treated mares had shorter

interval from Feb. 1 to first ovulation than

3 There were no significant differences in

fillies from their untreated mare counterparts

reproductive performance between treated and untreated animals (mares & their respec-tive offspring) measuring the following

interval from Feb. 1 to first ovulation, in

mean interovulatory interval from first to second cycle and second to third cycle,

at 50 days gestation, pregnancy rate in treated mares was 81.8% (9/11) and

reated mares was 100% (4/4)

after 3 cycles, 11/12 treated mares were pregnant (91.7%) and 4/4 untreated mares were pregnant (100%).

colt offspring of treated and control mares

reached puberty at approximately the same age (82 & 84 weeks respective)

stallion offspring from treated and contro

mares showed no differences in seminal volume, spermatozoal concentration,

spermatozoal motility, and total sperm

stallion offspring from treated and control

res showed no difference in sexual

testicular characteristics (scrotal width, testis weight, parenchymal weight,

epididymal weight and height, testicular

height, width & length) were the same between stallion offspring of treated

, per eiaculate.

and control mare

Shoemaker, C.F., E.L. Squires, and R.K. Shideler, 1989.

uires EL RK Shideler and

Safety of Altrenogest in Pregnant Mares and on

Reproductive Performance of Offspring from

Mares Administered Altrenogest During Gestation. Eq. Vet. Sci. (9); No. 2: 73–76.

oment of Offspring. Eq. Vet

REFERENCES

Health and Dev

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Sci. (9); No. 2: 69-72.

A.O. McKinnon. 1989.

oral size was increased

individually or in groups.

ADDITIONAL INFORMATION:

ving data

parameters

mares only.

follicle size, mares only,

WARNING: For oral use in horses only. Keep this and all other medications out of the reach of children. Do not use in horses intended for human consumption.

HUMAN WARNINGS:

WARNING

HUMAN WARNINGS: Skin contact must be avoided as Altren[®] (altrenogest) Solution 0.22% is readily absorbed through unbroken skin. Protective gloves must be worn by all persons handling this product. <u>Pregnant women or women</u> when unned the ware pregnant bould pat who suspect they are pregnant should not handle Altren® (altrenogest) Solution 0.22% Women of child bearing age should exerci Women of child bearing age should exercise extreme caution when handling this product. Accidental absorption could lead to a disrup-tion of the menstrual cycle or prolongation of pregnancy. Direct contact with the skin should therefore be avoided. Accidental spillage on the skin should be washed off immediately with cona and water ediately with soap and wate

INFORMATION FOR HANDLERS: WARNING: Altren® (altrenogest) Solution 0.22% is readily absorbed by the skin. Skin contact must be avoided; protective gloves must be worn when handling this product.

Effects of Overexposure There has been no human use of this specific product. The information contained in this section r is extranolated from data available on other prodis extrapolated from data available on other prod-ucts of the same pharmacological class that have been used in humans. Effects anticipated are due to the progestational activity of altrenogest.

Acute effects after a single exposure are pos sible; however, continued daily exposure has the potential for more untoward effects such as disruption of the menstrual cycle, uterine or as distribution of the mensural cycle, dreine of abdominal cramping, increased or decreased uterine bleeding, prolongation of pregnancy and headches. The oil base may also cause complications if swallowed

In addition, the list of people who should not handle this product (see below) is based upon the known effects of progestins used in humans on a chronic basis

PEOPLE WHO SHOULD NOT HANDLE THIS PRODUCT

Women who are or suspect they are pregnant

- 2. Anyone with thrombophlebitis or thrombo embolic disorders or with a history of these events
- 3. Anyone with cerebral-vascular or coronary artery disease
- omen with known or suspected carcinoma of the breast.
- 5. People with known or suspected estrogen
- Women with undiagnosed vaginal bleeding
- People with benign or malignant tumors which 7 developed during the use of oral contraceptives or other estrogen-containing products
- 8. Anyone with liver dysfunction or disease

Accidental Exposure

orhed from co Altrenogest is readily absorbed from contact wit the skin. In addition, this oil based product can penetrate porous gloves. Altrenogest should not penetrate intact rubber or impervious gloves however, if there is leakage (i.e., pinhole, spillage, etc.), the contaminated area covered by asuch occlusive materials may have increased absorption. The following measures are recom mended in case of accidental exposure.

Skin Exposure: Wash immediately with soap and wate

Eve Exposure: Immediately flush with plenty of ter for 15 minutes. Get medical atte

If Swallowed: Do not induce vomiting. Altren® (altrenogest) Solution 0.22% contains an oil. Call a physician. Vomiting should be supervised by a physician because of possible pulmonary damage via aspiration of the oil base. If possible bring the container and labeling to the physician.

Store upright at or below 25° C (77° F).

HOW SUPPLIED: Altren[®] (altrenogest) Solution 0.22% (2.2 mg/mL). Each mL contains 2.2 mg altrenogest in an oil solution. Available in 150 mL and 1000 mL plastic bottles.

Manufactured by: Aurora Pharmaceutical, Inc Northfield, Minnesota 55057

Approved by FDA under ANADA # 200-620



RMACEUTICAL

07/2021

EQUISUL-SDT

(Sulfadiazine/Trimethoprim) Oral Suspension

For use in horses only Approved by FDA under NADA # 141-360

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

DESCRIPTION

EQUISUL-SDT is a broad-spectrum antimicrobi EQUISUL-SDT is a broad-spectrum antimicrobial from the potential sufficiential calculation of chemo-therapeutic agents. These two drugs block different sequential steps in the biosynthesis of dividence add by competing with para-aminobancia add. Timethoprim blocks the production of trainslytotholic add thro dividences. The effect of the add action dividences that the add action of a bacteriotic add through the set of the add action is to reduce the minimum inhibitory concentration of each agent (synarging) and to converting the rotstic action to a bacteriotida action. Suffadazine is the non-proprietary name for 4-amino-X-2py-midinylberzenesultonamide. Timethoprim is the non-proprietary name for 51(3,6,5 threshocyphenyl) methyl¹2,4 pyrimidinediamine.







Fach mL of FOUISUL-SDT contains 400 mg combined active ingredients (333 mg sulfa and 67 mg trimethoprim) in an aqueous su diazine s susper INDICATION

EQUISUL-SDT is indicated for the treatment of lower respiratory tract infections in horses caused by susceptible strains of Streptococcus equi subsp.

DOSAGE AND ADMINISTRATION

Shake well before use

inister EQUISUL-SDT orally at the dosage of

24 mg combined active ingredients per kilogram body weight (10.9 mg/lb) twice daily for 10 days. EQUISUL-SDT can be administered by volume at 2.7 mL per 45.4 kg (2.7 mL/100 lb) body weight. En interpretending (c) minimum of 200 minimum (c) and 200 minimum (c) 200 mini 2.7 mL per 45.4 kg (2.7 mL/100 lb) body weight

CONTRAINDICATIONS UL-SDT is c aindicated in horses with a EQUISUL-SD1 is contraindicated in known allergy to sulfadiazine, sulfor antimicrobials, or trimethoprim.

WARNING Do not use in horses intended for humar

HUMAN WARNINGS Not for use in humans. For use in animals only. Keep this and all drugs out of the reach of children. Consult a physician in the case of accidental human exposure.

Antimicrobial drugs, including sulfonamides, can cause mild to severe allergic reactions in some individuals. Avoid direct contact of the product with the skin, eyes, mouth, and clothing. Person with the skin, eyes, mouth, and cioning. Persons with a known esnitivity to subformatides or trimethoprim should avoid exposure to this product. If an allergic reaction occurs (e.g., skin rash, hives, difficulty breathing, facial swelling) seek medical attention.

PRECAUTIONS Prescribing antibacterial drugs in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to treated animals and may increase the risk of development of drug-resistant animal pathogens.

The administration of antimicrobials, including sulfa-diazine and trimethoprim, to horses under conditions of stress may be associated with acute diarithe a that can be fatal. If acute diarithes or president changes in fead inconsistency are observed, additional doses of EOLISUL-SOF build not be administered and appropriate therapy should be initiated.

The safe use of FOUISUL-SDT has not be

Ite safe use of EQUISUL-SOT has not been evaluated in breading, pregnant, or tactating hors: Potertialed sufficianties should only be used in pregnant or tactating mars when the benefits to it mare justify the risks to the fetus. Use of potentias softmanises during pregnancy has been associal with an increased risk of coorgenital abromatilise sufficient to take deficiency. In humans sufficient to take deficiency. In humans sufficient and particular to drate deficiency. In humans sufficient and cusas hyperbiliniblemin induced neurotoxicity in nursing neonates.

Decreased hematopoetic activity and blood dyscrasias have been associated with the use of elevated doses and/or prolonged administration o potentiated sulfonamides. EQUISUL-SDT should be discontinued if prolonged clotting times, or decreased platelet, white blood cell or red blood cell counts are observed

Sulfonamides should be used with caution in horses with impaired hepatic function. Although rare, sulfonamide use has been associated with fulminant hepatic necrosis in humans.

Neurologic abnormalities have been reported in several species following administration of potentiated sulfonamides. In horses, potentiated sulfonamides have been associated with gait alterations and behavior changes that resolved after discontinuation of the drug.

The safe use of EQUISUL-SDT has not been evaluated in horses less than 1 year of age

ADVERSE REACTIONS

ADVERSE REACTIONS Adverse reactions reported during a field study of 270 hornes of various breaks, ranging from 11 p 25 years of age, which had been treated with either CUISULS-EOT (to 122) or with a salice control one of the set ood of varying serverly was observed in 69 of 142 (36%) of the EOUSUL-SDT-reated hornes, and 24 of 86 (33%) salite control horses. Of those animals experiencing loses stool, 2 of 182 (11%) of the EOUSUL-SDT-reated hornes and 0 of 88 (6%) placebo-treated horses are removed from the study due to darthera (defined as at least one episode of watery stool). Both cases of diarthea in this study were self-limiting and resolved without treatment within 5–10 days after discontinuation of EOUSUL-SDT-FOUISUL-SDT

Table 1 Number of Horses with Adverse Re he Field Study with EQUISUL-SDT

Adverse Reactions	Equisul-SDT (n=182)	Saline control (n=88)
Loose stool (including diarrhea)	69 (38%)	29 (33%)
Colic	3 (1.6%)	2 (2.2%)
Diamhea	2 (1 1%)	0 (0%)

technical assistance or to obtain a copy on the SDS, contact Aurora Pharmaceutical, Inc. at 1-888-215-1256 or www.aurorapharmaceutic com. For additional information about adversa drug experience reporting for animal drugs, contact FDA at 1-884-FDA-VETS or online at

CLINICAL PHARMACOLOGY

CLINCAL PHARMACOLOGY Following oral administration, ECUIUL-SDT is rap-idly absorbed and widely distributed throughout body tissues. Sufdializate levels are usually highest in the kidney, while the tissue concentration in other issues is only slightly user than Jastran concentrations. Concentrations of timethoppin are usually higher in the lungs, kidney, and liver than in the blood. Sufdiazare and timethoppin are body eliminated primarily by renal excretion, both by glomerular filtration and tubular secretion. Urine concentrations of both sulfadiazine and trimeth oorim are several-fold higher than blood concentrations.¹ Sulfadiazine and trimethoprim are 20% and 35% bound to plasma protein, respectively. Administration of sulfadiazine and trimethoorim with food has no apparent effect on the absorption of sulfadiazine but the absorption of trimethoprim is decreased.

Based on a study in fed horses, trimethoprim concentrations following repeat oral administration of 24 mg/kg EQUISUL-SDT to 6 horses reached peak concentration in 0.5 to 12.0 hours. The median nation half-life was 3 hours, with a range of 2.31 to 4.96 hours. Peak sulfadiazine concentra of 231 to 496 hours. Peak sulfadazine concentra-tions were reached within 10 to 120 hours in the same study. The median plasma elimination half-life routilotazine was septoministly 7.06 hours, with a range of 6.78 to 10.39 hours. Only minor accumula-tion of both days areo shoreved following repeat oral administration of ECUISUL.SOT and both drugs reached steady state by day 3. Sulfadiaria end trimethogrim key steady state parameters associated with administration of foll origos over a period of 7 days are found in Table 2.

Table 2. Median (Range) of sulfadiazine and trin ethoprim pharmacokinetics parameters following repeat dosing of 24 mg/kg bid EQUISUL-SDT for 7 days to six horses in fed condition

Drug	Sulfadiazine	Trimethoprim
Tmax (hr)	4.75 (1.00–12.00)	8.50 (0.50–12.00)
Cmax (µg/mL)	17.63 (10.10–31.15)	0.78 (0.60–1.14)
AUC 0-12 (last dose) (hr*µg/mL)	159.35 (73.90–282.54)	5.47 (3.31–10.91)
T 1/2 (hr)	7.80 (6.78–10.39)	3.00 (2.31–4.96)

MICROBIOLOGY

MICROBIOLOGY EQUISUL-SDT is the combination of the sulfonamide sulfadiazine and timethoprim. These two drugs block sequential steps in nucleic acids biosynthesis. Sulfadiazine inhibits bacterial synthesis of dhydrofolic acid by competing with para-aminoheracic acid. Trimethoprim blocks the production of tetrahydrofolic acid from dihydrofolic acid by reversibly inhibiting dihydrofolate reductase. The two drugs act syner tically, reducing the minimum inhibitory cor of each, while enhancing the bacteriostatic action of each separately to a bactericidal action when

EQUISUL-SDT administered as a combined sulfadiazine-trimethoprim dose of 24 mg/kg body weight twice daily for 7 days provided concentration of sulfadiazine and trimethoprim with T>MIC90 (%T) values of 100% and 98% respectively. The minimum inhibitory concentration (MIC) values for FOUISUI -SDT against indicated pathogens isolated from lower respiratory tract infections in horses enrolled in a 2010–2011 effectiveness field study are presented n Table 3. All MICs were determined in accordance with the Clinical and Laboratory Standards Institute (CLSI) Approved Standard M31-A3 using a broth rodilution system and 3% lysed horse blood.

Table 3. Trimethoprim/sulfadiazine m inhihit orv concentration (MIC) values^a of isolates recovered from horses with lower respiratory infection caused by Streptococcus equi subsp. zooepidemicus treated with EQUISUL-SDT in the U.S. (2010-2011)

Treatment Outcome	Success	Failure
Number of Isolates	65 [°]	46
Time of Sample Collection	Pre- Treatment	Pre- Treatment
MIC 50 ^b (µg/mL)	0.25/4.75	0.25/4.75
MIC 90 ^b (µg/mL)	0.25/4.75	0.25/4.75
MIC Range (µg/mL)	0.12/2.4 to 0.5/9.5	0.12/2.4 to 0.5/9.5

¹ The correlation between *in vitro* susceptibility data and clinical effectiveness is unknown.
² The lowest MIC to encompass 50% and 90% of the most susceptible isolates, respectively.
³ One isolate of S. *equi* subsp. zooepidemicus was not tested.

FEFECTIVENESS

negative control, randomized, masked, field study valuated the effectiveness of FOI IISU - ----A negative control, randomized, mesker, field autu-exultated the efficiencess of E-DUR3U-SDT and istered at 24 mg/kg body weight, orally, twice daily for 10 days for the treatment of lower respiratory equi subsp. zozepatemicsa. In this subs, a bit of 128 horess were treated with E-DUR3U-LSOT, and 88 horess were treated with E-DUR3U-LSOT, and 88 horess were treated with E-DUR3U-LSOT, and 89 horess were treated with E-DUR3U-LSOT and 61 sating) were included in the statistical analysis. saline) were included in the statistical analysis. Therapeutic success was characterized by absence of fever and no worsening of clinical signs at Day 5 and Day 10, and significant clinical improvement or resolution of clinical signs of tower respiratory tract infection by Day 17. The observed success rates are 58.9% (66/112) and 14.8% (9/61) for the EQUISUL-SDT and saline-tre espectively

Table 4 summarizes the statistical analysis results on the overall success rate.

Table 4. Overall Clinical Effectiveness Results

Equisul-SDT Saline P-value* 61% 13.1% 0.0123 Least Square

with the incidence of loose stool increasing in a dose

related manner. All incidents of loose stool were selflimiting and resolved without treatment

Horses in all EQUISUL-SDT groups demonstrated

statistically significantly higher mean serum creati nine concentrations, and those in the 3X and 5X

groups demonstrated statistically significantly higher mean serum albumin concentrations. Statistically

higher mean neutrophil counts and mean serum

gamma glutamyl transferase (GGT) activity were

seen in the 1X and 5X groups. Individual animal cre

admine, GGT, and albumin concentrations remained within the reference range. Individual animal elevations in absolute neutrophil counts ranged up to 7.09 x 10^3 /mcL (reference range: 1.96-5.31 x 10^7 /mcL).

Based upon blood concentrations obtained during the study, I was noted that the sulfadazine and trimeflorpin pissma concentrations of durin chrease in proportion to does For sulfadazine, a 3X and XX does resulted in an average aposure of 2.0X and 2.6X the concentrations observed following a 1X does. For timeflooptim, the corresponding ubuse ware 2.5X and 3X as compared to the 1X does. Furthermore, marked intersubject variability, particularly with sulfadazine, resulted in substantial overlap of individual subject blood levels across the three doeing groups.

STORAGE CUMULIONS Store upright at 59"–86° F (15"–30° C). Brief periods up to 104° F (40° C) are permitted. Protect from freezing. EQUISUL-SDT in containe of 280 mL and 560 mL — discard 60 days after

FOUISUL SDT is available in the following

1 Kahn CM, Line S, eds. The Merck Veterinary

ual. 10th Ed. Merck & Co. 2010.

аигога

ARMACEUTICAL

01/2021

STORAGE CONDITIONS

HOW SUPPLIED

135 m

560 mL 900 ml

[footnote]

P-value and estimated success rates are based in back-transformed mean estimates from the on back-tra itistical analysis.

ANIMAL SAFFTY ANIMAL SAFETY In a target atminist safety study, EQUISUL-SDT was administred crally to 32 healthy adult horses at 0 (0X), 24 (1X), 72 (3X), or 120 (5X) mg/lap hinc daily for 30 days. Loces stol was the most common abnormal observation. Observations of loces stool (cellest with logical unformed/cowpleted stool) occurred more often in horses treated with EQUISUL-SDT with the in indirect of locen treated incomers in a floater of the provide of locen treated incomers in a floater.



Throughout the mare breeding season, **Altren®** (altrenogest) is quickly becoming the product of choice in handling estrus issues in horses.

Containing the same formulation and active ingredient as Regu-Mate®(altrenogest) and backed by Aurora's *Best-Price-Always* commitment, Altren is becoming the industry's most requested altrenogest product line, enhanced by Altren's proprietary 150 mL dose and FDA-approved vented cap.

Spending more no longer makes sense when it comes to effective estrus management.



Altren

(altrenogest)

ESTIN 1.22% (2.2 mg/mL) ANIMALS ONLY Wade Shoemaker, DVM Countryside Large Animal Veterinary Clinic Greeley, CO

"Altren[®] (altrenogest) is a product our practice relies on to provide the same active ingredient as Regu-Mate[®] (altrenogest), but at a much better price point.

My clients appreciate the cost savings I can pass on to them. Altren has quickly become the #1 altrenogest in our practice due to the cost savings and specialized packaging.

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zine/Trimethoprim

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HEALTH ZONE Contagion Concerns





Daily practices that reduce the likelihood of an outbreak include the use of a quarantine barn

causative agent by examination of appropriate samples is crucial. It is important to adjust all safety measures based on the contagious nature of the respective pathogen and its major transmission routes."

Working with a trusted veterinarian to put proper biosecurity protocols in place is highly recommended. No matter the venue, having a safe way to quarantine new equine arrivals is key to any plan.

"The most common way infectious diseases are spread is when a new horse that is a carrier of the disease arrives at a property," explained Alicia Skelding of the University of Guelph's equine center in the paper "Biosecurity for Horse Owners." "A veterinary examination is recommended prior to purchasing a horse. Depending on where the horse has originated from, the veterinarian may advise for specific tests to be conducted to rule out infectious diseases.

"New horses should be isolated from resident horses for 30 days. The horse should be checked daily for signs of illness, including monitoring the horse's temperature, food, and water intake. Separate stable/yard equipment, buckets, grooming supplies, tack, etc. should be used for new horses and marked with red tape. The new horse should be handled last, morning and night, and hands should be washed upon leaving the horse's stall or paddock."

The value of being prepared is generally understood, but it competes with the reality of actually finding the time,

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Farrier Product Distribution is the exclusive distributor of Kerckhaert and Liberty brands in the U.S. and Canada. For more information on Kerckhaert Kings Plate (Flush Toe) and Liberty nails, visit www.farrierproducts.com. getting the proper information, and taking the steps to carry out protocols. In May 2022, the Equine Veterinary Journal published "Challenges to exotic disease preparedness in Great Britain: The frontline veterinarian's perspective."

The objective of the study was to examine veterinarians' experience of and attitudes toward exotic disease preparedness. The participants in the study were selected to represent a variety of experience, clientele, and location. Their interviews were recorded and analyzed.

"Exotic diseases pose a significant risk to horse health and welfare," ex-

plained researchers. "Several stakeholder groups, including primary care veterinarians, share responsibility for maintaining freedom from pathogens that cause exotic diseases."

"

WHILE THERE ARE **OVERARCHING INFECTION CONTROL PRINCIPLES** WHICH HAVE BROAD **APPLICABILITY ACROSS MOST DISEASES AND** FACILITY TYPES, EVERY **EQUINE EVENT AND EVERY PREMISES IS UNIQUE."**

-AMERICAN ASSOCIATION OF EQUINE PRACTITIONERS

The results of the study showed three core themes regarding challenges to effective preparedness. The first result centered around the idea of being a reactive generalist, as the veterinarians were primary care practitioners.

"Participants often found themselves working to the 'firefighter' model of medicine, responding to ill-health instead of proactively providing wellness services," the study found. "This ingrained reactive approach meant that participants struggled to shift into a preventive mindset in the absence of an imminent threat. By identifying as generalists,

participants acknowledged they could not reasonably be an expert in all areas of veterinary medicine. Over time, their expertise became targeted toward common condi-

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HEALTH ZONE Contagion Concerns

tions, moving them further away from specialist topics like exotic diseases."

The second concluding theme was an acknowledgement that there are limits to a veterinarian's influence. The client must be a willing participant for an effective working relationship.

"Within the veterinarian-client relationship, some participants viewed their role as information providers, or educators, and experienced frustration when clients did not follow their advice," said researchers. "The need to be influential stemmed from an assumption that the client lacked sufficient knowledge. By acting as an educator, participants aimed to change their clients' behaviors through providing more knowledge.

"Participants perceived a greater level of influence when a positive client relationship was established; however, good veterinarian-client relationships were sometimes undermined by more accessible and preferable information sources, such as other horse owners on social media. The increased availability and accessibility of competing influences were added challenges to the veterinarian's ability to influence positive change."

Finally, researchers identified the lack of cohesion within the horse industry itself.

"An effective response to an equine infectious disease outbreak would rely on action at the population level," concluded researchers. "However, the culture of the wider horse industry in which participants worked was characterized by a lack of cohesion amongst its members. Overarching issues with coordination across sectors, and unbalanced resources between racing and non-racing horses, reflected a siloed industry structure. Participants perceived that owners, in general, did not have a sense of their



New horses should be isolated from resident horses and then checked daily for signs of illness, including monitoring temperatures, food, and water intake

horse belonging to a national herd."

Researchers did note that the Thoroughbred industry is more invested in prevention protocols when compared with those owning pleasure horses. In England the racing sector widely accepts the biosecurity protocols created by regulatory and statutory bodies, such as the British Horseracing Authority and the Horserace Betting Levy Board.

Or, as a vet in the study put it: "We all go by the HBLB Codes of Practice in the Thoroughbred industry, which is pretty well rammed down the throat of everyone now."

Because veterinarians are such an integral part of any good equine management program—both in regular situations and during a biosecurity crisis—being able to communicate successfully with clients is becoming more of a priority. In October 2020, *BMC Veterinary Research* published "An integrated review of the role of communication in veterinary clinical practice."

"Communication has always been an important pillar for veterinarians," explained researchers. "The ability to communicate effectively leads to better clinical outcomes, such as client satisfaction during the veterinary visit and increased client compliance with the veterinarian's recommendations. Many factors are known to drive the quality of client-veterinarian communication such as the veterinarians' communication skills and clients' expectations. A 'client-centered' approach has been promoted to facilitate clients' adherence, aiming to make more clients decide upon a treatment option in line with the veterinarian's recommendations.

"Failure to effectively communicate with clients may result in health, safety, and legal repercussions for veterinarians. The quality of communication has a direct impact on the quality of care. In particular, in the field of veterinary communication, there is a growing interest in the ways of delivering difficult news to clients; the



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role of communication skills in the veterinary education curriculum; and the application of client-centered communication approach within the veterinarian-client relationship."

In all, 48 studies were included for analysis after an indepth review by two independent reviewers. Researchers found that the existing body of research on veterinary communication can be classified into three major areas: client-veterinarian communication, crossdisciplinary communication in a professional veterinarian team, and training of veterinary communication skills.

"This review detailed the complexity of agendas in the field of veterinary communication," researchers concluded. "The results indicate that veterinary practitioners can further benefit from training on





Basics such as first-rate record-keeping and frequent hand washing can stop the spread

specific communication skills that address the agendas found in veterinary communication research. Furthermore, the veterinary curriculum should include a component on communication training that equips veterinary students with the necessary communication skills that allow them to effectively communicate with different stakeholders such as clients and colleagues with and across the field of veterinary science."

Working together, horse owners and veterinarians can make strides in both containing outbreaks when they do occur and preventing them in the first place. However, a willingness to make a plan, follow established protocols, and listen to expert advice is an important part of the process long before a contagion problem presents itself.

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