



Help, I must treat at an endurance ride!

Dr Albertus Coetzee

FEI Official Veterinarian and Endurance Treatment Veterinarian

Introduction

It often happens that ride organizers need veterinarians on short notice to work at rides. For line veterinarians this is still fine, however for a treatment vet you can get into serious emotional and physical stress if you need to prepare without knowing what to prepare for.

Purpose of article

- To know what stock you should have with you
- To know how much of the above you should have
- To know what to do in an emergency
- To know how to deal with common conditions
- To know how to deal with uncommon, but frightening conditions.

Background

The first and most important rule of the FEI is the welfare of the horse. Therefore the veterinary team and stewards have a responsibility that the rules are applied accordingly.

It often happens that the closest local vet must act as the treating veterinarian. A couple of general guidelines from the FEI and ERASA (NERA) stipulate the number of veterinarians at a ride.

- The minimum number of veterinarians at a ride is three for up to a 100 horses. This must include a prepared treatment vet on site.
- FEI guideline, 1 treatment vet for every 50 entries on 120 km events or 1/25 for 160 km events

What can I expect to see?

- Lameness
- Lacerations
- Monday morning disease
- Exertional myopathy
- Dehydration
- Ileus
- Colic
- Neurological cases

TREATMENT PRINCIPLES FOR METABOLIC CONDITIONS IN ENDURANCE HORSES

Protracted endurance exercise places a huge physiologic demand on endurance horses, and occasions arise when treatment is necessary. The "sick" endurance horse has now been recognized as having unique treatment needs and, with trial and

error, each practitioner devises a treatment protocol that gives the best and most efficient results. Each horse presents a unique story and should be managed for its unique and specific problems. The purpose of this presentation is to empower veterinarians to be prepared for treatment at endurance rides.

Recognition of the Metabolic Horse

Any of the following symptoms may be present in a horse experiencing metabolic stress or failure:

- Delayed HR recoveries—pulse persistently above 64 bpm or up and down
- Poor Cardiac Recovery Index (CRI)
- Abnormal gut sounds, either hypermotility, hypomotility or entirely absent
- Dry, scant or mucus-coated faeces, indicating intestinal stagnation
- Lack of appetite
- Disoriented attitude or no interest in surroundings
- Depressed posture
- Lack of thirst in the presence of clear signs of dehydration
- Anxious facial expression: glazed or sunken appearance of eyes, wrinkled lips, either tense or drooping ears
- Oblivious to external stimuli such as insect bites, application of rider's aids, or perceived physical threat – to illustrate, these horses are easy to get on a drip.
- Loss of impulsion and elasticity of gait; ataxic or weak
- Skin pinch test remains tented; however, note there is often a poor correlation of skin pinch test with level of dehydration
- Mucous membranes showing red margination around the gum line, muddy or pale colour, dryness or other signs of being poorly perfused
- Poor jugular refill
- Flaccid anal sphincter or relaxed penis
- Thumps (synchronous diaphragmatic flutter or SDF) are often associated with intestinal atony and are related to electrolyte derangements and decreased ionized calcium
- Hyperthermia: Rectal temperature above 39.5 degrees Celcius within 20 minutes of stopping exercise
- Decreased rectal temperature due to a dilated anal sphincter
- Myoglobinuria—may or may not be accompanied by stiff or cramping muscles
- Exertional myopathy/muscle fasciculations/exertional rhabdomyolysis
- Signs of impending laminitis: increased digital pulses, camped-out stance, shifting weight, pointing foot, or overt lameness

- Colic: anxious appearance, abnormal stance or lying down, gas distention, impactions, displacements, or any evidence of abdominal pain, including yawning or a flehmen response

Intravenous Fluid Therapy

The treatment of choice for metabolic disease in the endurance horse is the prompt and aggressive administration of intravenous fluid therapy.

Since the endurance horse can easily lose 10 to 15 litres of fluid volume per hour of exercise, horses in metabolic distress should receive at least 12-30 litres intravenously. Rapid fluid administration will not result in over-hydration provided kidney function is normal. A renal compromise that often accompanies myopathies will benefit from high-volume flow.

Urination should occur after the intravenous administration of 15-20 litres in hypovolemic conditions related to exercise, and it is a useful index of appropriate response to fluid therapy. If it has not, more measures may need to be taken to ensure kidney function is stimulated. Using see-through cups with subsequent urine samples is a nice way to monitor effective fluid administration.

Choice of Catheters and Fluid Administration Sets: The best means of giving large volumes rapidly is with the use of large-bore intravenous catheters. Most commonly a 12 G Braunula with a high capacity admin set is used.

A 12-gauge catheter will deliver approximately 20 litres per hour. Large-bore catheters, and any catheter placed under conditions where asepsis is not achieved, should not be left in place for more than 24 hours. The catheter should be sutured in place or glued to the skin, with a neck bandage applied to stabilize the catheter as much as possible.

We use isolation tape which is light and easy to apply. A large-bore IV extension set can also be attached to minimize handling and movement at the end of the catheter. Remember that the rate of flow through a catheter depends not only upon the gauge of the catheter but also on the gauge of the extension set and IV lines.

Any inline tube smaller than 12-gauge will restrict the flow rate. A large-bore catheter set that can be plugged into IV bags of pre-mixed fluids is made by Jorgensen Labs. This set is known as a "twirly-wirly" and is quite expensive. A local South Africa company Britten Healthcare, manufactures a set which is commonly used by treatment vets.

Single-litre bags can be used with a pressure bag to hasten flow, but this method is extremely time-consuming and, if available, not as cost-effective as bulk fluids. Keep in mind that 1-litre bags do not allow you to get very fast rehydration in critical cases. They will, however, facilitate the dispensing of specific medications into an IV line. Whenever possible, warm fluids before administration of large volumes.

This can be done with a microwave oven or by immersing bags in hot water baths.

The higher the fluids are hung, the faster the flow rate. In the field, some ingenuity may be necessary to find a suitable drip stand: trees or tree branches work well, as does a horse box. A portable IV pole is described under the Suggested List of Equipment.

Choices of Fluids: For the dehydrated/exhausted horse complex, the objective is to expand the extracellular fluid volume, primarily using isotonic fluids.

Many commercial preparations make this objective quite easy. The fluids of choice are Saline 0.9% or Plasmavet™, which contains sodium, potassium and chloride, and is specifically indicated for correction of fluid and electrolyte deficits. To date, no adverse effects have been reported from the administration of large volumes of these solutions to horses with metabolic alkalosis, particularly if the potassium deficits are simultaneously replaced. Normal saline (0.9%) is used extensively, however, it will need to be supplemented with potassium and calcium to replenish those ions lost in sweat. A rough guide is 3 x 3-litre bags saline, and one 3-litre Plasmavet throughout.

Rhabdomyolysis and Exertional Myopathy

Myopathy, as seen in the endurance horse at competitions, is often related to a problem in energy utilization and electrolyte imbalances. The classical name of Monday Morning Disease comes from horses used to deliver coal on weekdays. On weekends they would be rested but if kept on a high-carb diet a disease of stiffness of the bigger muscles occurs. This is mostly seen in gluteal muscles and can be uni- or bilateral. It can also occur in less frequent sites eg trapezius, pectoral and longissimus. It may also be heat or stress-related or a result of storage myopathy.

Early onset of myopathy or "tying-up," within the first five to 10 kilometres, is one of the most challenging and, unfortunately, an all-too-common problems seen in this sport. However, it should be remembered that, while less common, exertional myopathy can develop at any point during the ride. These horses might originally be seen on the trail with a shortening gait which can be apparent as early as five kilometers out. On stopping, this will gradually develop into a tight, hard muscle cramp in the hindquarter which can, and often does, progress into a classic form of severe generalized tight muscle cramping. This results in reluctance to move, and an extremely painful animal.

Some of these horses go down and should be left in place until some form of relief is administered. Any level of myoglobinuria is a sign of muscle trauma and should be a serious warning to the line vet or treatment veterinarian to attempt to avoid renal compromise.

Treatment: Fluids are essential for flushing the kidney tubules and improving muscle and renal perfusion. 0.9% Saline, Plasmavet™, or other polyionic fluids are the fluids of choice. A volume of 20-30 litres would be an appropriate amount to start with.

Significant dehydration, if it is present, would require more fluid volume. Oral fluid supplementation can also be used at a rate of 8-10 litres/hour if IV fluids are unavailable or difficult to administer. Ileus must be ruled out and normal active intestinal motility must be present before using oral medications.

Tranquillizers, muscle relaxants, analgesics and non-steroidal anti-inflammatories are also beneficial to the tied-up horse under the appropriate circumstances.

Useful drugs and their dosages are listed below. These are useful, but because they can all be detrimental in the hypovolemic patient, care should be taken to use them only after a safe level of fluid volume has been established. These medications would include:

- Acepromazine (10 mg/400 kg IM bid to qid as necessary)
- Xylazine (0.2 mg/kg IV)
- Detomidine (10-20 mcg/kg IV)
- Flunixin meglumine (0.5 mg/kg IV)
- Butorphanol (0.02-0.04 mg/kg IV)
- Lidocaine

Dantrolene is a non-centrally acting spasmolytic which acts by slowing calcium release from the sarcoplasmic reticulum. This results in muscle relaxation and is effective in treating the severe muscle cramping seen in the tied-up horse. The dose is 3-5 g orally. It comes in capsules and these can be opened and added to applesauce or administered by nasogastric tube. Slow IV dantrolene is also available and used at a dose of 15-25 mg/kg. The latter is something I have not used myself but might be worth exploring.

Heat, supplied over the cramped muscles, can come from many sources. Warm water towels, chemically warm packs, or Liniment will help increase circulation and assist in the relaxation of heavy muscles. Placing a space blanket or a plastic bag over the rump will help to hold the heat in over a long period. Take environmental conditions and the presence of hyperthermia into consideration if the myopathy occurs later in the ride. Acupuncture may also prove to be beneficial, particularly in the pain management aspect.

Use of Muscle Enzymes for Prognosis of Healing: Creatinine Phosphokinase (CPK) has a high specificity for damaged muscle, peaking in serum within 4-6 hours of the insult. CPK is quick to return to normal once ongoing damage has stopped and it is a helpful predictor to monitor improvement and to help decide when a horse can return to exercise. CPK should return to <1000 micromoles/L before training resumes. AST is much slower to elevate and can take weeks to return to normal concentration.

Colic

Acute and, sometimes, severe colic is not unusual in the tired and excessively stressed endurance horse. Colic is one of the most common conditions encountered during endurance competition and is the primary cause of 80% of fatalities within the sport. One of the best strategies in preventing the development of colic is to eliminate the metabolically stressed horse with poor gut motility

from further competition before the condition reaches the point of requiring more than the opportunity to rest and refuel. Abnormal GI motility can result from the combined stressors of travel, hyperthermia, dehydration or fatigue.

During the competition, the further metabolic stresses of protracted exercise and loss of body fluid, especially if beyond the current abilities of the horse, can result in a shift of blood from the bowel to vital organs and muscles, resulting in poor bowel motility and considerable discomfort.

Timely assessment of the cause of pain is important and the risks of the horse causing damage to itself, other horses and the people around it must be addressed immediately. Pain is commonly caused by impaction, gas or fluid accumulation and subsequent distension of the bowel.

Surgical colic is less common in the endurance horse, but displacements, torsions, and intussusceptions have been identified. For these reasons, passing a nasogastric tube to diagnose and/or relieve gas or fluid from the stomach is important. Significant reflux can occur from ileus, requiring serial refluxing of the stomach to remove the excess fluid and relieve pain.

A rectal manual examination can provide important diagnostic information, but the danger of tearing a fragile rectal wall due to dehydration is significant. Good restraint (both physical and pharmacologic), generous lubrication and extreme caution are warranted.

The cornerstone of treatment of colic in the endurance horse should focus on pain relief, sedation and **early administration of intravenous fluids**. Research has demonstrated the majority of colic in endurance horses will improve significantly with as little as 20 litres of intravenous fluids and appropriate adjunctive care at the ride site.

Horses with significant reflux will do better with a nasogastric tube left in place to facilitate periodic refluxing as needed. Serial refluxing and intravenous fluids should continue until the horse is urinating regularly and is no longer refluxing. These horses should then be offered small amounts of wet feed, and not released from the treatment area until they are passing manure and showing good appetite.

Horses that are clearly surgical, or are beyond the scope of the treatment abilities provided at the ride site, should be transported to the referral centre with a nasogastric tube secured in place to prevent gastric rupture.

Lidocaine bolus and CRI are sometimes needed. I have seen a couple of cases where after about 20-30 litres of drip and a bolus of lidocaine, gut function is restored. In some cases, a CRI is needed. Practical tip: If these horses stand in the stable for all the fluid they seem to seize up. Put a plug-in catheter and take the horse for a walk. This often get urination going and borborygmi returns to normal.

Development of Hyperthermia

A hyperthermic horse, with a persistent rectal temperature exceeding 39-41 degrees Celcius, is at risk for more complicated metabolic disease. The following is a list of symptoms and suggested treatment.

Symptoms of Hyperthermia

- Note other signs of exhausted horse syndrome as above
- Panting
- Poor heart rate recoveries
- Stumbling/ataxia
- May feel hot to the touch; may not be sweating adequately or effectively
- Loss of mental alertness
- Disinterested in surroundings or environmental stimuli
- Can lapse into convulsions or seizures due to the sensitivity of CNS to high temperatures

Treatment of Hyperthermia

Intravenous fluids: Dehydration is a primary contributor to heat stress, so this issue must be addressed immediately and aggressively.

Cooling strategies:

- Cold water immersion in a lake or stream
- Continual dousing with water via sponge or hose, especially the head, neck, and lower limbs. Recent research by Dr David Marlin shows that leaving the layer of water on the horse is a more effective cooling mechanism than scraping as was believed before.
- Fans or misting sprayers
- Ice boots on legs over large vessels. Some styles of boots are conducive to being applied over the jugular veins.
- Alcohol baths (500 ml alcohol per 5 litre of water)
- Cold water enemas, being extremely careful of potentially dehydrated, and thus fragile, rectal walls. *Do not tell riders about this....*
- Stomach tube with cool (**not** cold) water in small amounts at frequent intervals.
- Remove all tack and equipment
- Shade.

Neurological cases

Pathogenesis: sweating leads to low blood levels of Na and Cl. The CSF still has normal levels of NaCl causing the hypertonic fluid to move into CSF causing brain oedema with neurological symptoms. It presents as a horse with nystagmus, weakness, and stumbling tongue paresis, and they can show severe hyperexcitement which mimics seizures! **Very scary and very dangerous.** Sedate IV with alfa2 agonist or Diazepam. Get the catheter in and rehydrate with SALINE only. This is one possible place where hypertonic saline can be used as long as it is followed with enough 0.9% saline to ensure fluid replacement. In many cases, swallowing seems to be affected

and an indwelling NG tube helps to relieve reflux. Keep sedated until neurological symptoms go away. This can take a good 6-8 hours.

Lameness

This is by far the most common issue we deal with. Not all horses get presented to the treatment vet but at most FEI events the horse must be checked. Most commonly stone bruises, fetlock injuries, suspensory issues, issues with thrown shoes, and sore backs. Even though this is a serious condition, it does not kill horses. The focus should be more on picking up metabolic horses than lame horses.

Lacerations

When seen before the start of the ride keep in mind that your treatment might put the equine athlete at risk for controlled/banned substances for competition. Download a list of withdrawal times. Also, consider the hydration status of the horse. If dehydrated, NSAIDs are contra-indicated. Line vets normally decide if the horse is fit to continue. Therapeutic options can be limited before proper rehydration of the horse. Topical wound cleaning by applying a wet-wet dressing often buys time to allow the horse to first drink and eat.

SUGGESTED EQUIPMENT AND MEDICATIONS

- FEI Endurance rules
- ERASA or NERA rules
- FEI list of prohibited drugs and withdrawal periods of controlled substances
- Stethoscope
- Digital or analogue watch with second hand, or stopwatch
- Thermometer

Additional Suggested List of Equipment for the Treatment Veterinarian

- Twitch and/or lip chain
- Naso-gastric tube, multiple sizes
- Stomach pump or large dosing syringe 450 ml size
- Bucket
- IV catheters: 12 gauge 5.25" Most commonly used in RSA Braunula or Intraflo
- Pressure pump or hand bulb for accelerating the administration of intravenous fluids
- IV Administration set: Large-bore (at least 12 gauge) for high-volume fluid flow,
- Flashlight or headlamp and extra batteries
- Hoof knife
- Hoof testers
- Equipment to remove shoes
- Scrub preparations
- Sterile surgical pack with suture materials or stapler
- Bandaging materials
- Needles and syringes
- Various types of Vacu-tainer® tubes
- Formalin jars
- Post-mortem knife – carpet knife

- Rectal sleeves and lube
- Towels
- Lily pads, blue foam or Equi-Pak™ for sole support, polystyrene cool box
- Kimzey splint and/or splinting materials (i.e., PCV pipe)
- Portable IV pole: Use two pieces of aluminium conduit screwed together to 2-3 m in length. (When unscrewed, the two pieces are easily stored out of the way.) Use set screws to hold the two conduit pieces together, with an eye bolt at the top.
- IDEXX or i-STAT® (with EC8 and creatine cartridges) or Abaxis® Chemistry Analyzer would be of great benefit in treating horses. An arrangement with a local hospital may also serve as a source for laboratory testing if none is available on-site.

Suggested List of Medications for the Treatment Veterinarian

- IV fluids: 3-litre bags of balanced electrolyte fluid (i.e., Plasmavet™) and 0.9% Saline with a minimum inventory available of 60-100 litres. (15-25 boxes of 4 x 3 l) More fluids may be required if a larger number of horses are expected

or with elevated heat and humidity. A larger volume of fluids may also be needed at the higher stress of championship rides. A rule of thumb is 100-150 litres per 30 horses in competition. (3 litre per entry)

- Balanced electrolyte solution sachets for oral rehydration
- Calci 50® as a source of Ca, K, Mg, etc.; calcium gluconate (dairy milk fever preparation)
- 50% Dextrose solutions for IV and/or oral use
- DMSO liquid for IV and/or oral use???
- NSAIDs (flunixin meglumine, Ketofen etc.)
- Sedation and tranquilizing drugs—xylazine, detomidine, butorphanol, acepromazine, diazepam, romifidine
- Anesthetics – ketamine
- Ophthalmic medications
- Antibiotics. Suggested choices: ceftiofur, trimethoprim/sulfadiazine (powder, paste or tablets), gentamicin, K penicillin or Na penicillin
- Buscopan® as a smooth muscle relaxant
- Wound treatment supplies: triple antibiotic ointment, bandaging materials, local anaesthetic
- Hypertonic saline solution
- Euthanasia solution or other method of humane euthanasia.

Order SAVVA name badges for your practice!

Available
in gold
or silver

Price: R140 per badge
(VAT inclusive, excludes
packaging & courier fee)



For more information or orders contact
Sonja van Rooyen at SAVVA
Tel: 012 346 1150
E-mail: assistant@sava.co.za

SAVVA
South African Veterinary Association
Suid-Afrikaanse Veterinêre Vereniging

MISSION STATEMENT



South African Veterinary Association
Suid-Afrikaanse Veterinêre Vereniging

"The South African Veterinary Association aims to serve its members and to further the status and image of the veterinarian.

We are committed to upholding the highest professional and scientific standards, and to utilizing the professional knowledge, skill and resources of our members, to foster close ties with the community and thus promote the health and welfare of animals and mankind".

Servicing and enhancing the
veterinary community since 1920

We, the members of the Association, resolve at all times:

- To honour our profession and the Veterinary Oath
- To maintain and uphold high professional and scientific standards
- To use our professional knowledge, skills and resources to protect and promote the health and welfare of animals and humans
- To further the status and image of the veterinarian and to foster and enrich veterinary science
- To promote the interests of our Association and fellowship amongst its members.

Ons, die lede van die Vereniging, onderneem om te alle tye:

- Ons professie in ere te hou en die Eed na te kom
- 'n Hoë professionele en wetenskaplike peil te handhaaf en te onderhou
- Ons professionele kennis, vaardigheid en hulpbronne aan te wend ter beskerming en bevordering van die gesondheid en welsyn van dier en mens
- Die status en beeld van die veearts te bevorder en die veeartsenykunde te verryk
- Die belange van ons Vereniging en die genootskap tussen sy lede te bevorder.

Dear SAVA member

Please note that Vethouse will close on Monday, 23 December 2024 and resume business on 06 January 2025.

SAVA wishes all its members and their families a joyous festive season and everything of the best for the year ahead.

Kind regards
Gert Steyn: Managing Director

Geagte SAVV lid

Neem asseblief kennis dat Vethuis sal sluit op Maandag, 23 Desember 2024 en sal heropen op 06 Januarie 2025.

Die SAVV wens alle lede en hul families 'n wonderlike feestyd en alles van die beste vir die jaar wat voorlê.

Vriendelike groete
Gert Steyn: Besturende Direkteur

Veterinary Vaccination Certificate
for Dogs and Cats
Veterinêre Inentingcertifikaat
vir Honde en Katte

Pet's name Troeteldier se naam



South African Veterinary Association

VACCINATION BOOKS

The LAST ORDERS for 2024 for vaccination books will be **11 December**.

No orders will be accepted after this – this is to ensure that stock will be dispatched by **18 December 2024**.

Orders for 2025 will resume on **15 January**.

To order/for more information contact
**Debbie Breeze on
012 346 1150 or debbie@sava.co.za**



South African Veterinary Association

"...to use our professional knowledge, skills and resources to protect and promote the welfare of animals and humans..."

Mission

The South African Veterinary Association aims to serve its members and to further the status and image of the veterinarian. We are committed to upholding the highest professional and scientific standards, and to utilising the professional knowledge, skill and resources of our members, to foster close ties with the community and thus promote the health and welfare of animals and mankind.

Tel: +27(12)3461150/1, www.sava.co.za, vethouse@sava.co.za

SAVA Community Veterinary Clinics (SAVA-CVC)

A project of the SAVA which aims to provide primary healthcare to pets owned by owners who cannot afford the services of a veterinarian. Various clinics have been established countrywide. Veterinarians donate their time and skill. Financial support is required, primarily to purchase medication and materials. Registered non-profit company (1998/016554/08) non-profit organisation (000-234NPO) and public benefit organisation (1300013211)

Tel: +27(12)3461150/1, www.communityvet.co.za, cvc@sava.co.za

South African Veterinary Foundation (SAVF)

The foundation was established to promote a greater understanding of animals, through promoting research and an informed public. Student bursaries and research grants are awarded; research results are published in national and international journals.

www.savf.org.za, savf@sava.co.za

South African Veterinary Council (SAVC)

The SAVC is the regulatory body for the veterinary profession and veterinary para-professions in South Africa.

Tel: +27(12)3456347, www.savc.org.za, savc@savc.org.za

State Veterinary Service

Import and export requirements
www.daff.gov.za → Branches → Agricultural Production, Health and Food Safety
→ Animal Health → Import/Export Policy Unit → (application forms can be found here)

MULTIPLE-CHOICE QUESTIONS

QUESTION 1

What is the primary treatment for a metabolic horse at an endurance ride?

- a. Antibiotics
- b. Oral fluids
- c. Intravenous fluid therapy
- d. Muscle relaxants
- e. Pain relief

QUESTION 2

Which of the following is NOT a symptom of metabolic stress in endurance horses?

- a. Dry, scant faeces
- b. Normal heart rate recovery
- c. Lack of appetite
- d. Disorientation
- e. Glazed eyes

QUESTION 3

Which of the below can be used for treating dehydration and electrolyte imbalance in endurance horses?

- a. 0.9% Saline
- b. Dextrose solution
- c. Ringer's lactate
- d. Hypertonic saline
- e. Water

QUESTION 4

What is the safest initial option to treat an endurance horse with colic?

- a. Walking
- b. Flunixin meglumine
- c. Buscopan
- d. Butorphanol
- e. Intravenous fluid

QUESTION 5

Which of the following is a symptom of hyperthermia in endurance horses?

- a. Dehydration
- b. Elevated heart rate
- c. Panting
- d. Abnormal gut sounds
- e. Hyperexcitability

QUESTION 6

What is the recommended initial volume of intravenous fluids for a horse with exertional myopathy?

- a. 5-10 liters
- b. 10-15 liters
- c. 5-20 liters
- d. 0-30 liters
- e. 0-40 liters

QUESTION 7

What type of catheter is commonly used for high-volume fluid administration in horses?

- a. 4 gauge
- b. 16 gauge
- c. 18 gauge
- d. 20 gauge
- e. 12 gauge

QUESTION 8

Which medication is used for sedation in a horse with muscle cramping or myopathy?

- a. Acepromazine
- b. DMSO
- c. Butorphanol
- d. Flunixin meglumine
- e. Lidocaine

QUESTION 9

For treating colic in endurance horses, which procedures are critical for diagnosing and relieving abdominal pain?

- a. Rectal examination
- b. Ultrasound
- c. Nasogastric tube
- d. Radiography
- e. Endoscopy

QUESTION 10

Which of the following is a recommended treatment for hyperthermia in endurance horses?

- a. Cold water rinses
- b. Warm water dousing
- c. NSAIDs
- d. Oral dextrose
- e. Increased feed intake

**SAVC CPD Accreditation Code:
AC/1935/24**

**To answer the questions and obtain your CPD point
for this article visit <https://www.sava.co.za/vetnews-2024/>**