

What about . . . IVERMECTIN?

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Ivermectin is a widely used veterinary and human medicine approved by the FDA in 1988 and hailed as the last word in parasite control since it worked on so many parasites for so many species. Like moxidectin (Quest), ivermectin is a neurotransmitter inhibitor and it was claimed that parasites could not become resistant to it nor were there any side effects evident in their testing. However, in the years since its introduction, much has been learned about both side effects and the fact that parasites *are* becoming resistant.

How it works

According to The American Board of Veterinary Toxicology (ABVT) [www.abvt.org/iverm.html], ivermectin is an agonist for the neurotransmitter gamma-aminobutyric acid (GABA) which is a major inhibitory neurotransmitter. In mammals, GABA-containing neurons and receptors are found in the Central Nervous System, while in arthropods and nematodes, GABA is found primarily in the Peripheral Nervous System (neuromuscular junction). The binding of ivermectin to a neuronal membrane increases the release of GABA which then binds to the GABA receptor-chloride channel complex of postsynaptic neuronal membranes causing an influx of chloride ions. This then hyperpolarizes the neuronal membrane making them less excitatory and decreasing nerve transmission thus mediating a flaccid paralysis in arthropods and nematodes.

All that scientific language means is that ivermectin is a neuro-transmitter inhibitor and paralyzes the parasites; unfortunately, it also hits some mammals similarly with ataxia even though it is not supposed to due to the physiological differentiation. If you think this medication is utterly benign, just read the label warnings above.

The ABVT says the most common uses in small animal practice for ivermectin include monthly prevention of heartworm infection, treatment of ear mite situations, clearing heartworm larvae in active heartworm infection, and treatment of sarcoptic, notoedric or demodectic mange with the heartworm connection being the most common by far. In equine practices, ivermectin is used in general rotational deworming and for bots in particular. For humans, it is most commonly used for lice and scabies.

Side Effects

Ivermectin side-effects in dogs, according to the ABVT, entail mydriasis (excessive pupil dilatation and uncontrolled lateral eye movements), depression, coma, tremors, ataxia (uncordination/stumbling/uneven gait), stupor, emesis (vomiting), drooling, and death. Especially at risk are the sheep-herding breeds such as colliers, Shetland sheepdogs, Australian shepherds, and Old English sheepdogs; the sensitivity seems to be associated with the blue merle gene and many of these dogs have died.

The Horse Journal, August 2001 mentions similar side-effects to ivermectin in horses but also states that digestive and neurological problems are the most commonly reported adverse reactions to both it and moxidectin (Quest). They said, that in 1998, the FDA received 630 equine reports, and Moxidectin (Quest) ac-

counted for over half of them. Moxidectin was also, according to the FDA, the second-most frequently reported drug in adverse-event reports for *all* species, *all* drugs, coming in second only to Rimadyl, the dog anti-arthritis medication.

Generally speaking, equine reactions include decreased appetite and depression, diarrhea, colic, laminitis, shock, clotting abnormalities, and even death. In terms of FDA reported *deaths*, *The Horse Journal* goes on to say, in *descending* order from the most dangerous to the safest: Moxidectin (Quest) by a wide margin, followed by Ivermectin (Zimectrin, Equimectrin, Agri-Mectin, Rotectin 1, etc.), then Anthelcide and the Oxibendazole class, then Strongid and the rest of the Pyrantel class, then Fenbendazole (Panacur or Safeguard), and with no reported deaths from the

Piperazine, Thiabendazole and Oxfendazole classes. As for some of the complaints, many about pyrantel (Strongid, including the daily version) said that it did not work.

The Horse Journal also suggests that side effects be reported. The FDA maintains a database of Adverse Drug Reactions [www.fda.gov/cvm/index/ade/adetoc.htm]; it is imperative to use form FDA 1932a. Or call 888/FDA-VETS.

As for human side effects, the April 19, 1997 issue of the *Lancet* [www.safe2use.com/scabiesboard/ivermectin/ivermectin-Deaths-Scabies.htm] contained a report about numerous human deaths following ivermectin treatment of scabies in an institution. Robert Barkwell and Suzanne Shields of Wentworth Lodge, a 210 bed fully accredited long-term care facility, affiliated as a clinical teaching unit with the Faculty of Health Sciences, McMaster University, UK, concluded that "Between Nov 10, 1995, and May 10, 1996, 15 of the 47 who had received ivermectin died, compared with 5 of the age-matched and sex-matched cohort."

Side panel on Rotation™ 1 (ivermectin) Paste 1.87% by Farnam

► **WARNING:** Do not use in horses intended for food purposes. ◀

CAUTION: ROTATION™ 1 (ivermectin) Paste has been formulated specifically for use in horses **only**. This product should not be used in other animal species as severe adverse reactions, including fatalities in dogs, may result. Refrain from smoking and eating when handling. Wash hands after use. Avoid contact with eyes. Keep this and all drugs out of the reach of children. Ivermectin and excreted ivermectin residues may adversely affect aquatic organisms. Do not contaminate ground or surface water. Dispose of the ROTATION™ 1 (ivermectin) Paste syringe in an approved landfill or by incineration.

Safe Parasite Control

The Horse Journal went on to suggest that if a fecal count is 200+, "don't go right to the 'heavy guns' like Moxidectin (Quest) or any of the Ivermectin class." Rather they suggest starting with Panacur or Safeguard (fenbendazole) or Oxfendazole then doing another fecal 2 weeks later. If the count is still high, go up a step to Oxibendazole (Anthelcide) which has some larvicidal activity but not as much as the Quest, Ivermectins or the 5 day Power Pack fenbendazole which all have major larvicidal activity and thus a much higher risk of complications.

They then advised that most adult horses with healthy immune systems can efficiently limit parasite infestations without benefit of any treatment, provided their exposure is never high. Their recommendation was to **use caution** when deworming horses with exceptionally high (fat stores toxins) or low body fat, on other drugs, with liver problems, on tranquilizers or other drugs that affect the CNS (Central Nervous System), on other dewormers, on drugs affecting the intestinal tract, or on eye drops that affect the pupil. Additionally they suggested **avoiding** deworming when there is *any* sign of illness/debilitation, if there have been recent feed changes, if animal has been vaccinated within the last 2 weeks, and to wait at least 2 weeks after worming to vaccinate. They also make clear that

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"Effective parasite control requires a healthy, fully-functioning local immune response in the gut, which is not well developed in younger horses" thus indicating that foals, weanlings and yearlings are always considered at high risk for deworming.

Their bottom line suggests that the power of the newer drugs comes at a price; they should be used advisedly and never in conjunction with any other stress such as weaning, shipping, or new environment; and their use should *always* be followed by giving a pro-biotic. We think this last is vital.

More options

While we concur 100% with **The Horse Journal** on all the above points, we also have found horses who have been on the **DYNAMITE**[®] basic program for two or more years usually have few to no parasites. Optimum nutrition seems to produce optimum immune systems so parasites simply are not a bother. Additionally, the clays in the **Free Choice** minerals act as vermifuges or substances that parasites dislike.

We have found that adding ½-1 teaspoon **Excel** or **Miracle Clay** (an exceptionally fine human grade diatomaceous earth; lesser grades can cause severe intestinal distress) daily, seems to take care of any problems. In fact, many distributors and customers jokingly refer to **Excel** as their "daily wormer!"

Occasional use of **Herbal Tonic** which is loaded with traditional vermifuge herbs, is great as a back-up. Here in dry Colorado, annual or semi-annual rounds of the **Tonic** (during full moons always as parasite activity is greater then; this is a good rule of thumb for *any* parasite control) is all that is needed, with fecals showing little to no activity 2 weeks later. In warmer, more moist areas of the country, we recommend quarterly rounds.

We always follow up any deworming with twice daily **DynaPro** for 3-5 days to make sure intestinal health is at optimum levels. If by chance a chemical dewormer is required because the 2-week fecal following the **Herbal Tonic** shows a 200+ count, we suggest one round *only* of Safeguard/Panacur and so far, have never had it fail. After such chemical deworming, we definitely put horses on a 10-day detox with **Excel** along with the twice daily **DynaPro**. Many individuals also like to give homeopathic *hypericum 30c* as per label directions to lessen possible side effects.

Bots

As with most parasites, healthy systems tend to shrug them off. However in certain areas, bot flies seem to be quite a scourge. For those areas, we suggest prevention first and foremost: eye masks; spraying with chemical-free deterrents such as **DYNAMITE**[®] **DynaShield**; warm water washing of the horse's knees, lower legs and chests during the egg season; spreading oil (actually the **DynaShield** works great here, too) over the same areas so bots cannot lay eggs or, if they do, they smother; and "combing" bot eggs off. We do not recommend fly sheets as they interfere with the natural defenses of horse skin and hair. To make the **DynaShield** even more effective, dilute one to four with a water mix of ¾ water and ¼ **DYNAMITE**[®] **Apple Cider Vinegar**. So your horse (or you or your dog) do not smell like a salad, consider adding a bit of pure essential oils such as Bergamot or Lavender to your mix.

If you find your horse has a bot infestation, Erin Zamzow, DVM offers the opinion that a 200# or 20% dose of ivermectin is sufficient to kill bots rather than the far more dangerous full levels suggested by both the pharmaceutical companies and most vets. Of course, we add that ideally one would follow such treatment with **DynaPro** and an **Excel** detox as described above.

Heart Worms

Martin Goldstein, DVM, in his book The Nature of Animal Healing, states that to hear most vets insist on daily heartworm medication (ivermectin), one would think that "we're in the midst of a brutal epidemic, leaving piles of dead in its wake." He continues, saying

he does think "there's an epidemic, too, but of a different sort: of disease-causing toxicity instilled in our pets by heartworm preventative pills..."

Only a small percentage of dogs who get heartworm die from it, especially if they are routinely tested twice a year. He says that early in his career, he did see and treat hundreds of cases of heartworm disease, most with routine medication, yet witnessed only three deaths with the last being in 1979. By comparison, Dr. Goldstein continues, "we're seeing cancer kill dogs on a daily basis." He believes that toxicity from heartworm pills likely is contributing to the tremendous amount of immune suppression now occurring, especially in cases of liver disease and cancer, and that chemical overload is a far greater and more immediate threat than that of the diseases they are meant to prevent. He goes on to say "I have seen one obvious, immediate effect of these once-a-month preventatives in case after case: when you give the dog that pill, over the next few days, his urine burns the grass. Permanently! In some cases, you can't grow grass there until you change the soil. What, I wonder, can it be doing internally to your dog in that time?..."

As for mites/mange, Dr. Goldstein considers these opportunistic results of undernutrition with its resultant immune insufficiency. He suggests optimizing nutrition and applying **Tea Tree Oil** topically including in shampoos.

Scabies/Lice

Perhaps one of the oldest forms of lice and scabies control is apple cider vinegar. We recommend pure, unpasteurized **DYNAMITE**[®] **ACV** which can be applied full strength if necessary. Also shown to be effective is **Tea Tree Oil**; the **DYNAMITE**[®] brand is what we suggest because of its ideal terpinen:cineol ratio. The **DYNAMITE**[®] **All Natural Shampoo** also contains this **TTO** and, even though formulated for animals, it is made up of strictly human-grade ingredients and is the only shampoo and body wash we use.

Resistance

Despite the fact that ivermectin was originally introduced as a "resistance-free" dewormer, an article in *Equus*, May 2003, shows parasites are becoming resistant to various modern chemical wormers, including ivermectin. The article recommends always performing a fecal rather than deworming by rote and suggests deworming *only* if a positive fecal count is over 200. And they emphatically state that if a fecal is negative, **do not worm**.

Conclusion

Over the years we have heard numerous reports of horses "falling apart" within 2 weeks of receiving ivermectin or moxidectin (and/or multiple vaccinations) even though they were doing fine previously. A common result is ataxia (stumbling, uncoordination, etc.) with "rotten hooves" and poor coat condition being even more so. Ultimately we need to realize these are very powerful drugs and even though we may not see immediate side-effects, running such chemicals through living beings is bound to stress organs of detoxification such as the liver and skin. Additionally, eyes are very vulnerable to chemical toxins and many report that bouts of uveitis (moon blindness) invariably occur following such dewormings. We have also found older horses to be extremely vulnerable to excess toxins with many evincing ataxia and even fevers following ivermectin/moxidectin use; geriatrics require similar care as youngsters. The very ground itself can become saturated with toxic chemicals causing problems, such as ataxia, to future sensitive residents.

We have long thought it rather bizarre to attempt to "poison" an animal to health; rather we prefer the "less is more" approach. There *are* safe and effective alternatives such as vermifuge herb preparations (**Herbal Tonic**), human-grade diatomaceous earth (**Miracle Clay**), frequent to daily pro-biotics (**DynaPro**) in addition to supplying optimum nutrition (the **Dynamite Program**). Do consider following a more natural, safer approach to parasite control. ■