



Hearn Veterinary Services

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Factors Associated with an Increased Risk of Colic

As the weather grows colder once again, the incidence of colic in my practice seems to increase. I suspect that this is related to temperature changes, decreased water consumption, decreased exercise, and increased time spent in stalls. If colic is a problem in your barn, you might ask: "Is there anything that I can do to reduce the chance that my horse will colic?" There are several "risk factors" that have been associated with an increased chance of your horse colicing. Therefore, it is a worthwhile exercise to periodically review these factors with a view to minimizing the risk for your horse.

A risk factor is defined as any characteristic that is associated with disease occurrence. Factors that have been examined include age, sex, breed, exercise history, previous health history, environmental exposure, geographic location, temperature, diet, shipping, treatment, and veterinary visits.

There is limited published material on potential risk factors associated with colic. There are a number of hospital based case-control studies that limited themselves to age, sex, and breed relationships, and there are few, large, controlled epidemiological studies. There was one good yearlong prospective study that was conducted by the University of Pennsylvania, New Bolton Centre. It looked at 14 herds and found a colic incidence of 0.22 cases/horse/year.

Discussion of factors by group

Age

Older horses are at an increased risk of colic. However, there is variation in the study results: one study found horses that are less than 2 years or more than 11 years of age are at higher risk for colic, and horses over 15 years are at higher risk of requiring colic surgery.

Sex

There is little risk associated with gender.

Breed

Arabian, Thoroughbred and Standardbred horses have been identified as being at an increased risk of colic in several studies.

Housing

Horses housed in stalls for more than 12 hours per day, were more likely to colic than horses living outside 24 hours a day. Horses with access to larger paddocks also seem to be less likely to colic. Bedding with sawdust increased the risk of colic.

Horses, which are outside in large paddocks, tend to move frequently and spend a large part of the day grazing. It is believed that this keeps the bowels constantly working and therefore decreases the risk of colic.

Feed / Water

Several factors have been well known for years: Inadequate water supply. Horses turned out with no access to water were significantly more likely to colic. This frequently happens during the winter in colder climates. Horses with access to heated water also drank much larger quantities than horses with access to very cold water. Mouldy hay or grain is associated with colic. Feeding grain before hay after horses were brought in. Feeding corn significantly increased the risk of colic. Rates of colic decreased as the roughage proportion of the diet was increased and the grain portion of the diet was decreased. This suggests that horses do best when they have a constant access to hay or grass and consume small amounts frequently through the day. It is interesting to note that horses in New Zealand that are turned out on large mountain pastures 24 hours a day almost never colic. Gas colics have been associated with very lush green grass in the early spring in Northern Climates, and with pasture containing red clover.

Dentistry

Increased frequency of dental examinations has been associated with a decreased risk of large bowel impactions. However, some studies have not found any association between frequency of dentistry and risk of colic (although most horses underwent dentistry at least once per year).

Exercise

Horses that received 1-6 hours of exercise / week were more likely to colic than horses that received more than 6 hours exercise. Several studies suggest that changes in activity level increases the risk of colic.

Geography

There are regional differences in the types of colic observed. Enteroliths (large concretions found in the intestine) and sand colics are most common in southern California, Indiana, and Florida. Large bowel colics are more common out West and small bowel colics are more common in the East.

Occupation

Reference group = Pleasure horses. Racing and Show horses are slightly more likely to colic. Breeding horses are much more likely to colic, and competition horses are less likely to colic. Broodmares have a much higher incidence of large bowel colics following foaling than pleasure horses.

Parasite Control

Large Strongyles: have been traditionally associated with damage to certain key blood vessels supplying the gastrointestinal tract. The risk from Large Strongyles has been very well controlled since about 1980.

Small Strongyles have been associated with mild spasmodic colics and diarrhea. Most de-wormers do a good job of controlling the adult forms, however the Small Strongyles are believed to still go through migration causing a significant inflammation in the bowel, before reaching a stage where most of the de-wormers can kill them. The encysted Strongyles are best be controlled by using either Quest, the 5-day Double dose of Panacur (Oxfenbendazole), or Strongid C. Significant resistance within some de-wormer families is now recognised.

Tapeworms (Anoplocephala): Tapeworms have recently been shown to be another significant cause of colic. There are now two de-wormers: Double dose Strongid (Pyrantel Pamoate) and Droncit (Praziquantel) that are available in Canada. The efficacy of the Strongid in some populations has been

questioned. However, one study showed that horses receiving daily worming with Strongid C were *ten* times less likely to colic than horses on a standard worming program of ivermectin (Eqvalan) 5 times a year.

- The company believes that the decrease is due to the ability to kill small Strongyles before they have the opportunity to enter the bowel wall where they encyst and produce a chronic mild inflammation.
- However, this decreased risk may also be explained by the ability to kill tapeworms, while the control group given Eqvalan (ivermectin) would have been susceptible to tapeworms.
- It is important to note that extended use of Strongid C (Pyrantel tartrate), may allow some resistant species of Small Strongyles to replicate. This means that it is important to also use another wormer periodically to control these resistant species (e.g. Quest or Eqvalan).

It is strongly recommended that all farms sample fecals at least once a year to determine how well their de-worming program is working. Since Tapeworms are difficult to isolate in normal fecal examinations, a technique was developed to improve the accuracy. Horses are wormed with a double dose of Pyrantel pamoate, and then fecal samples are collected 24 hours later, and a centrifugation technique is used to isolate the eggs.

Roundworms (Parascaris) are a significant problem in foals and roundworm resistance to Ivermectin (e.g. Eqvalan) has been reported by two separate groups during the last two years. This is the first resistance to Ivermectin that has been reported in the literature. At the same time, there has been a sharp increase in the number of foals submitted to OVC with roundworm impactions during the last few years. It is hypothesized that Ivermectin resistance may have contributed to the sudden increase in these impactions.

Transporting Long Distances (> 8 hours)

There is conflicting evidence as to whether there is an association between shipping and colic. One study in Texas found no association. One study in the UK did find an association.

If you are shipping valuable horses over long distances (especially to Florida or across the continent), consider box stalls. The stalls seem to sharply decrease the stress of very long trips. Many horses will even lie down in the stall, while the van is on the road. After horses arrive from a long trip, check their temperatures 1 hour after unloading and avoid any grain for at least 12 hours. It is common to see mild shipping fever, and it responds very well to prompt veterinary attention, provided that the problem is identified early. The policy of administering mineral oil before shipping long distances is controversial: In North America, many farms give horses half a gallon of mineral oil by stomach tube prior to shipping them long distances. In my experience, this has proved to be good policy, as I have never had a serious colic in a horse that was oiled before shipping. However, there are other groups that believe that oiling horses is not necessary and does not change the risk of colic.

Season / Temperature changes

I have noted a rash of colics that seem to occur every year in the late fall. This may be associated with large swings in temperature, large changes in barometric pressure, eating frozen grass, or the maturation of certain worms at this time. One study showed that temperature changes of more than 25 degrees F. were associated with an increased risk of colic; other studies have failed to find any association.

Stress / Injuries / Stall Rest

Horses that are highly stressed, for any reason, are at a higher risk for colic. It may be the stress of the injury, or the change in exercise, or the change from a grass diet back to hay. At the track, some trainers feed beet pulp to increase the bulk in the diet. It is a good idea to set up a special feed regime for horses that are on stall rest.

Cribbing

A recent study identified a strong association between cribbing behavior and colonic obstruction and distention.

Summary

There are a lot of different factors that might be associated with colic in your horse, on your farm, or in your region of the country. Work with your veterinarian to determine the best management program for your horses.