



Horse Care

Improving Survival Rates Of Compromised Foals In High Risk Pregnancies

by HEATHER SMITH THOMAS

Sometimes a pregnant mare develops a problem that puts the fetus at risk for abortion or premature delivery. Some of these foals can be saved, however, if the problem is discovered early and the mare can be given proper treatment to reverse the condition or improve the fetus' chances for survival.

Michelle LeBlanc, DVM (Rood and Riddle Equine Hospital, Lexington, Kentucky) says one of the most common causes of premature delivery is placentitis (inflammation of the placenta). "First, we have to try to identify those mares who have a problem. Part of the challenge is that not all mares who have a compromised pregnancy will show clinical signs," she says. The mare may lose the foal before you realize she has a problem.

"Some of those mares, about 70 percent, will show clinical signs if they have a placental infection. Those signs will be udder development and vaginal discharge. These mares will show one or the other, or both. If this is noticed, the mare should be examined by a veterinarian. That exam should include trans-rectal scanning of the uterus (with ultrasound) to see if the placenta has separated or is thickened. The mare should also have a vaginal exam to look at the cervix, and a culture of fluids in the vagina, to determine presence of bacterial or fungal infection," she says.

Then the mare should have a trans-abdominal scan to measure fetal movement and heart rate, to see if the fetus is still alive or in trouble. "If the mare has become com-

promised before 310 days of gestation, the veterinarian may want to measure her hormone progesterin. When you measure that, you are looking at not what the number is, but rather a qualitative change," she says.

"Progesterins are produced by the placenta throughout pregnancy. But by 310 days, the progesterins are not only produced by the placenta, but are also by-products of the fetal adrenal glands. So after 310 days of gestation the progesterins go up, in a normal pregnancy. This is simply an indication the foal is maturing. If there is placental disease, however, the progesterins may go up sooner than they should. They go up because of fetal stress. So between 180 and 310 days the level should be steady. Normal is between two and six ng per ml. If you took a sample every other day for three times, the value should be between two and six, and it should not go up or down," says LeBlanc.

"In cases of chronic stress, it may go up into the fifties. If it's an acute stress that the fetus can't handle, such as if the mare has severe colic and is on the table for surgery and the fetus is not getting enough oxygen under anesthesia, the progesterins may go down very quickly. In this acute stress, the mare may abort." The veterinarian may also measure estrone sulfate, but this is only reliable until about nine months' gestation, and this is pretty early.

"If a mare has a vaginal discharge and/or udder development before nine months, my guidelines are to treat her, with caution. The foal who may be born may have enough abnormalities that it would never be a performance horse," she says. It might be better to just let nature take its course, losing the pregnancy.

"Mares that have twins may also bag up and make an udder early, but they rarely have a discharge. In those cases, I would do a trans-abdominal scan to see if they have twins, and if so, I would let those mares abort, or abort them with drugs," she says.

Twins who are allowed to go to term are usually a disaster, for both them and the mare. The delivery is often complicated (putting the mare and foals at risk) and the mare's future ability to carry a foal may be impaired, even if she does survive. This is a risk most breeders do not want to take.

Treatment

Mares with placental infection should be treated with the proper antibiotics, that are effective for the bacteria that were cultured. "Non steroidal anti-inflammatory drugs can also be used—either Bute or Banamine—and a double



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dose of Regumate. A single dose may not be enough to keep the uterus quiet,” says LeBlanc.

“Preliminary data, from when I was at Florida, indicate that placental infection is an inflammatory event in which the mare produces pro-inflammatory cytokines. Those are substances produced by white blood cells when there is inflammation in the body. That leads to generation of prostaglandin E2 (PgE2) and lower amounts of PG F2alpha. Those prostaglandins are found in the allantoic fluid (that surrounds the fetus). The levels of those hormones become very, very high—much higher than in a normal pregnancy. Those hormones, the prostaglandins, will cause uterine contractions, initiating labor, and it’s a very rapid event. The foal is unfortunately just going along for the ride and is being kicked out too soon,” she explains.

“In humans, we can block those cytokines with other cytokines that are not pro-inflammatory—such as IL10, which is a modulating cytokine. It’s an extremely expensive drug however, and not used in horses,” says LeBlanc.

The other thing that’s been done (in research) is to put dexamethasone inside the uterine fluids, she says. “It blocks all the cytokines and thus blocks the generation of prostaglandins—since cytokines are what make the prostaglandins. Dexamethasone is put into the uterus by amniocentesis (injection through the abdominal wall into the uterus), which is easier to do in women than it is in the

horse, because it’s a different type of placenta. I feel that this is what we might need to do in the horse, but the procedure itself can lead to abortion. So right now we don’t have a good way to do all the treatments that are needed, to possibly stop the inflammatory process. It think this is why, in many cases, it appears that the drugs don’t work,” she says.

“The other thing that should be mentioned is that it is extremely important to identify these mares early, and stop the spread of inflammation, before the process is too far along.” Monitoring pregnant mares closely is crucial, since you may only see a very subtle sign that anything might be wrong.

If you suspect a problem, your veterinarian can then measure the progestins. If those are changing, then you know that something truly is going on, says LeBlanc. “Always keep a very close eye on mares who have had a problem in an earlier pregnancy. They are much more apt to have a problem again.”

Most cases of placentitis are caused by invasion of bacteria from the outside—via the vagina. Older mares may thus be more at risk than young mares, as are any mares with a sunken anus or mares that aspirate air. A Caslick’s repair can be very important, to halt this problem.

“Often there isn’t much that we can do to keep mares from aborting or foaling prematurely. We put them on those drugs and we keep a very close eye on them. Sometimes we are lucky, and sometimes not,” she says. 🐾