Foal Mortality as a Result of Blood Groups: ICTERUS!

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Aa

It has been known for many years that foals can die when the difference between the blood groups of mare and stallion is too great. For a long time, this was a familiar problem among English thoroughbreds and riding horses such as the ones registered by the KWPN. It was not until recently that this problem was cropping up and possibly increasing among Friesian horses. This article is more practical than theoretical in nature. After all, it is more important to try to avoid this misery or to recognize it in the early stages.

HOW DOES IT DEVELOP?

In general, it is comparable to what happens among Rhesus monkeys and human babies. When the father is Rh positive and the mother is Rh negative, the baby can also be Rh positive and have problems even before birth. Although horses do not have an Rh factor, they do exhibit other blood group factors, e.g., Aa and Qa. The Qa has never been observed among Friesian horses, but the Aa has. Once fertilization has occurred, all the blood groups of the foal have been determined. When the stallion passes on his Aa blood group to the foal and the mother lacks this blood group, problems can occur. The unborn foal develops and grows inside the uterus which offers an effective barrier between mare and foal. There is no contact between the blood of mother and foal as long as no wounds occur. It can happen, however, that a foal can kick hard enough to cause a wound in the uterus so that blood cells from the foal have access to the mares circulation system. In itself, such an exchange of blood cells is not so serious: the wound will usually close, and the owners will not notice anything has occurred.

Inside the mare, however, something has indeed occurred. The blood cells from the foal contain the blood groups received from both sire and dam. The blood groups inherited from the dam produce no problems, but hose from the sire sometimes do if they are not the same as those of the mare. When the mare has no Aa blood group, and the foal does, the mare's body reacts to these 'foreign bodies' by developing antibodies as a form of protection against the Aa blood group. This is a process similar to the body's reaction to an invasion of germs that enter through a wound. Since these antibodies cannot reach the unborn foal because of the barrier formed by the uterus, nothing happens to the foal during the mare's pregnancy.

AFTER THE FOALING TAKES PLACE

These antibodies, however, show up in the mare's colostrum. When the foal starts to nurse, these antibodies enter his circulatory system and cause a reaction in which the red blood cells degenerate. The more antibodies he absorbs, the more and the faster the degeneration of blood cells. If it goes too far, the foal can even die.

WHAT SYMPTOMS DOES THE FOAL DISPLAY?

Usually, these are strong foals that quickly drink a lot of colostrum. It is not uncommon that the foal becomes weak within 12 to 18 hours and displays yellow in the white of the eye and mucous membranes. The foal will often die quickly. The yellow colour develops due to the products of decomposition from the damaged blood cells. In other cases, when it is not so acute, the foal becomes weak after 2 to 4 days, can no longer stand and then dies. In these less acute cases, the yellow colour is often less conspicuous.

WHAT TO DO?

Call your veterinarian! In a number of cases, the foal can be saved with a blood transfusion. For the donor, it is best to use a horse that has never been pregnant (yearling or gelding). Afterwards, keep the foal away from the mare for five days following the birth. During this time, the mare will have to be milked.

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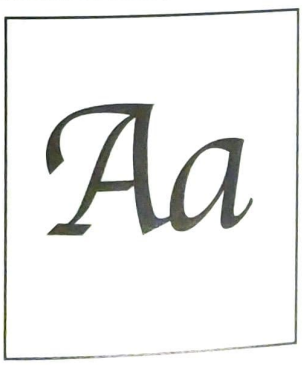


Foal Mortality as a Result of Blood Groups: ICTERUS! cont.

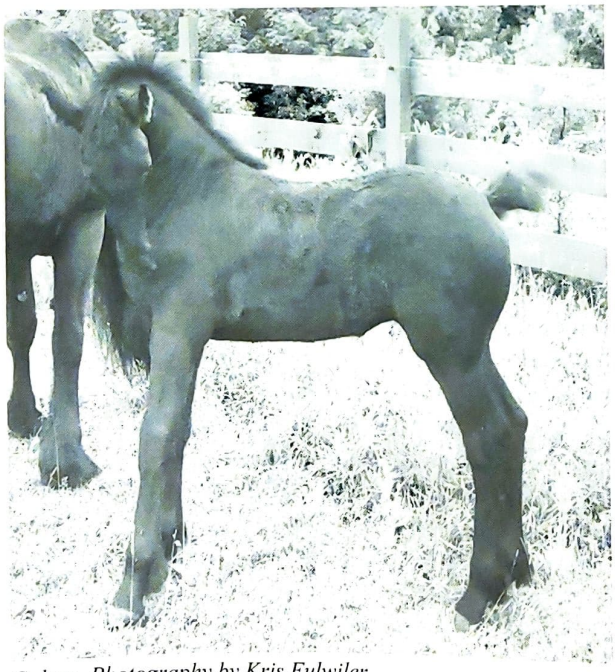
Not every foal that dies, however, dies as a result of a conflict in blood groups.

HOW CAN YOU BE SURE THAT THE CAUSE OF DEATH HAS BEEN A RESULT OF CONFLICTING BLOOD GROUPS?

Certain steps have to be taken to make sure of the diagnosis. Blood has to be taken from the mare (for your veterinary: Serum plus Heparine). The sample is sent to a laboratory. The diagnosis is made as quickly as possible, and you will be notified. Be sure to provide the name of the mare, her registration number and parent information, as well as the name of the father of the foal *(this is primarily for readers in The Netherlands, who have direct access to laboratories and clinics such as the Van Haeringen Laboratorium, that collect data and tissue for the studbook - Ed.).*

AN OLD WIVE'S TALE

It is true that foals born to older mares die more often. This is because an accumulation of antibodies occurs, year after year, until a deadly level is reached. Some people still believe that this problem does not occur among mares during their first pregnancy. This is absolutely not true!! Foals die every year because people still believe this old wives' tale. And, there is the chance that the correct diagnosis has not been made.



Galaxy. Photography by Kris Fulwiler.

WHAT TO DO TO PREVENT THIS PROBLEM?

Once it has been established that the foal(s) of a certain mare has/have experienced problems, it is possible to provide a service recommendation in which the blood groups of the mare are included. When she indeed possesses no Aa, the stallion selected must also lack Aa. The breeder is requested to supply a list with the name and studbook number of desirable stallions. Advice will be sent as soon as possible.

It can also happen that a breeder has a great desire to produce a foal with a certain combination of parents in which the blood groups are opposed (mare, no Aa - stallion, Aa). This is possible, but requires a lot of attention to detail and a lot of time. It also requires careful planning. The foal may under no circumstances be allowed to drink the mare's colostrum. The mare may attend to the foal after the birth but not allow it to drink! A stall equipped with a fence works fine so that the mare can still have contact with the foal over the fence. The foal has to drink, so try to get it the colostrum of another mare. This colostrum can have been stored for up to a year ahead in the freezer. But it is precisely this collecting of enough colostrum that proves to be a big problem. If not having blood tests done from the donor mare: Do not use any colostrum from a mare who's foal has died!

- Colostrum can be checked for the presence of harmful substances.
- A foal can drink fairly easily out of a bowl.
- Milk the mare! (for her relief and health)

It has been shown that the antibodies can still appear in the blood of foals even 4 days after birth. To be absolutely safe, keep the mare and foal separated for five days. Afterward, the mare will usually accept the foal without any problems.

CHECKING

Two weeks before the expected foaling, have another blood sample (serum) from the mare sent to the lab. Is this a 100% guarantee? What we are dealing with are not numbers but living animals. In addition to the Aa blood group, there are other ones which can occasionally cause problems. It is recommended, then, to keep a close eye on the foal of such a mare or to carry out blood checks ahead of time!