



JAUNDICE FOAL SYNDROME

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Neonatal isoerythrolysis (NI) or Jaundice Foal Syndrome is an uncommon but potentially life-threatening condition of newborn foals. It has been estimated to occur in 1 to 2% of equine births. The condition occurs when a foal ingests colostrum containing antibodies directed against its red blood cells (RBC's). Destruction of RBC's leads to release of a pigment called bilirubin that may cause the gums, white parts of the eye and feces to become yellow or jaundiced.

Horses have a number of blood groups, the most common of which are labeled 'Aa' and 'Qa'. A foal may inherit its blood group type from either the mare or the stallion. If the stallion and mare have the same blood group, the problem cannot occur. If a foal inherits the blood group type of its dam, there will also be no chance of developing this syndrome. The condition may occur only if the blood group of the foal is different than that of the mare (i.e. inherited from the stallion).

Exposure of the mare during pregnancy or at foaling to red blood cell antigens (blood group types) other than her own will cause her immune system to begin developing antibodies against the 'foreign' red blood cells. Typically only a limited amount of antibodies are produced during the first exposure to a foreign red blood cell group

and consequently the syndrome is rare in maiden mares.

However, if the mare is exposed a second time a far greater quantity of antibodies may be produced. The antibodies are concentrated in the colostrum over the last 2 to 3 weeks of pregnancy. Unfortunately, in most instances the presence of anti-RBC antibodies in the mare goes unnoticed and the foal is allowed to nurse colostrum from its dam. Antibodies are absorbed into the blood stream of the foal, where they attack the RBC's of the foal. Clinical signs can range from mild to severe depending on the amount of antibodies ingested and absorbed.

Affected foals usually begin to show clinical signs between 24 and 72 hours of life. Signs may include jaundice, weakness, lethargy, decreased nursing vigor, increased respiratory and heart rate, recumbancy, passage of red-colored urine and possibly death.

Treatment of affected foals may involve one or more blood transfusions from a cross-matched donor horse or washed red blood cells from the mare. Additional therapy may include administration of purified hemoglobin, antibiotics, and other medications.

In theory, the disease can be prevented by blood-typing the mare and prospective

stallion(s) and avoiding breeding a mare without the blood groups 'Aa' or 'Qa' to a stallion with those blood groups. However, this is not very practical.

It is far easier to test the blood of brood mares in the last 1 to 3 weeks of gestation for the presence of antibodies against the common red blood cell antigens. If no potentially offending antibodies are detected, the risk of development of NI is extremely low. However, if antibodies against one or more RBC antigens are present in the blood of the mare, the foal could be at risk of developing NI if allowed to nurse colostrum from the mare. The NI screening test is available through several diagnostic laboratories around the country.

Consequently, if a mare has had a foal affected by NI in the past, or if she is found to have antibodies in her blood against other equine blood groups, the newborn foal should not be allowed to nurse from her and should be provided colostrum or antibodies from another known safe source. The foal can be muzzled to prevent nursing and yet still allowed to remain with the mare. The colostrum of the mare should be stripped out every few hours and discarded. After approximately 36 hours, the mammary gland of the mare will no longer be producing colostrum and the foal can no longer absorb antibodies if they were present. The muzzle can then be safely removed and the foal allowed to nurse from the dam. It is critical that initially colostrum and then later on an alternative nutrition supply (i.e. mare milk replacer or goat's milk) be provided to the foal during the 36-hour period.

Consultation with your equine veterinarian can help with further understanding of the cause and medical implications of the disease, diagnostic tests, and prevention plans. As with many diseases, early recognition and treatment are the keys to survival.



Photo of a foal wearing a muzzle to prevent nursing