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## Septicemia

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Everyone is excited about the newest addition on the farm. Care of your neonate should be easy, since foals are just small horses, right? Well, not exactly--especially when it comes to certain medical conditions. For example, foals are more susceptible to septicemia than adult horses. Septicemia is defined as the presence of bacteria or bacterial toxins in the bloodstream, and it is the most common cause of death in newborn foals. Septicemia can manifest as pneumonia, diarrhea, meningitis (inflammation of the membranes of the brain and spinal cord), and joint and/or umbilical infections in the foal.

So why are foals at a higher risk for septicemia than adults? Foals have an "open gut" for about 12 hours after birth, which allows the large antibodies in the mare's colostrum to be absorbed into the foal's bloodstream. This is critically important because there is no transfer of antibodies from the mare to the foal in the uterus to protect the foal from infection. At the same time the gastrointestinal tract can absorb colostrum, it is also permeable to bacteria and other microorganisms in the foal's intestines. Nursing and consumption of colostrum helps stimulate intestinal closure. The average foal requires 1-2 liters of colostrum for adequate passive transfer (the passage of immunity from dam to foal), which is defined as an immunoglobulin (IgG, indicative of antibodies) level of 800 mg/dl or higher. Adequate passive transfer is not a guarantee the foal will be healthy and, conversely, partial or delayed failure of passive transfer will not result in septicemia in every foal. However, delayed or complete failure of passive transfer is one of the leading causes of septicemia and neonatal infection.

Ideally, the newborn foal should be standing within one hour of birth and begin nursing soon thereafter. If failure of passive transfer does occur, affected foals can be treated with colostrum (if they are less than 12 hours old) or hyperimmune plasma to ensure adequate immunoglobulin levels to protect against septicemia.

In addition to the gastrointestinal or oral route of infection, foals can also become septic after inhaling bacteria into their lungs, exposure in the uterus secondary to placental infection of the mare, or infection of the umbilicus. A clean foaling environment and appropriate treatment of the umbilicus can reduce the chance of infection and resultant septicemia. After birth, the umbilical cord should be allowed to break on its own. Once the cord has broken, the umbilical stump should be treated with dilute chlorhexidine (Nolvasan) three to four times a day for the first one to two days of life. An appropriate dilution is one part chlorhexidine to three parts water. The umbilicus should be allowed to dry out after two days of treatment, and it should be observed for urine leakage.

All foals should be evaluated by a veterinarian within 12-24 hours of birth to ensure their defenses against infection are adequate. Your veterinarian can check IgG levels with a simple, fast stall-side test to ensure the foal received enough colostrum. The veterinarian can perform a complete blood cell count (CBC) or additional bloodwork if any abnormalities are identified on physical examination of the mare, the placenta, or the foal. Treatment can be initiated with antibiotics if sepsis is suspected.

Septicemia can often be effectively treated with antibiotics and supportive care. The prognosis for survival varies widely from 30% to over 70%, and it is impacted by numerous factors that include early recognition and treatment. Complications of septicemia include infected joints, septic osteomyelitis (bone infection), meningitis, pneumonia,

and diarrhea. These complications might require expensive therapy and be life-threatening. Recognizing the clinical signs is critical for early treatment and the best outcome.

Early subtle signs of septicemia include decreased nursing (normal is four to six times an hour), lethargy, weakness, abnormal gum color (normal is light pink), and strange behavior. More obvious signs include fever (greater than 102°F), diarrhea, inability to stand, lameness, milk coming from the nose, colic, a swollen umbilicus, and a swollen joint or limb. If you have any concerns, call your veterinarian immediately for further evaluation.

Newborn foals certainly make springtime exciting and rewarding. The majority of foals will be born and grow up without complication. Early examination of your newborn by a veterinarian will ensure that everything is going in the right direction. If you do notice any of the warning signs of a problem, early intervention and treatment will provide the best outcome for your foal.

**Readers are cautioned to seek the advice of a qualified veterinarian  
before proceeding with any diagnosis, treatment, or therapy.**



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