

# Ask the Vet May 2013

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# Ask the Vet with Dr. Steve Fisch, DVM

## Foal Septicemia



**S**epsicemia is defined as systemic disease associated with the presence and persistence of pathogenic bacteria and their toxins in the bloodstream. This sometimes occurs when a foal develops a bacterial infection and the younger the foal the more dangerous the situation. The infection can be in the intestinal tract, umbilicus, lungs, or any other part of the body. This condition is caused by the spread of bacteria throughout the system hence the infection is no longer localized. "Bacteremia" is the term for bacteria in the blood; septicemia occurs when both the bacteria and their toxins circulate through the body. It is mainly the toxins that do the damage.

The only way a foal becomes septicemic is when bacteria gain entry into the body, and the most common entry routes in young foals is orally (intestinal tract), respiratory tract (pneumonia), or through the umbilicus. Toxins from certain types of bacteria ingested by the foal can damage the gut wall and leak through into the bloodstream where they start attacking all the organs of the body. The foal soon goes into shock as various organs shut



down, and unless treated in the very earliest stages of shock, he generally dies. Once the foal goes into shock, it is very difficult to reverse the condition.

A foal can also become septicemic before birth in the mare's uterus if the mare has an infection. In the first day of life, the foal may suddenly develop a septic joint and the most common way to get the infection that quickly was before birth. The way an unborn foal becomes septicemic is through the bloodstream from the placenta. Infection enters the foal's bloodstream and can travel wherever it wants to go. Those foals are already sick when they are born. They can be very ill and may even act like dummy foals. If you look at them closely after they are born, they may have white blood cells or puss in their eyes. Those foals may have only a 50-50 prognosis for survival.

Once bacteria gain entrance into the body, they may start releasing toxins depending on the type of bacteria. The toxins cause a dysfunction in hemodynamics, which means that suddenly the foal has low blood pressure and is going into septic shock. The body is doing several things to try to protect itself. The blood pressure drops, the heart rate increases, and temperature rises to try to fight off the infection. The foal starts breathing heavily to lower the body temperature because of the high fever. The body starts using a lot of energy for this and the foal becomes weak since a young foal does not have energy reserves like an older horse.

This weakness causes abnormalities in heart rate and intestinal function. At the same time, there is poor circulation to the gut so it shuts down. This causes the foal to not nurse properly. If he tries to nurse, the stomach just fills up because nothing can move on through, so he quits nursing. Bacterial toxins then affect the liver and, eventually, the other organs of the body. There is multi-organ failure.

If septicemia is suspected, a CBC and blood chemistry may help confirm the diagnosis. If there is a low white blood cell count those blood cells are being used up as they fight the battle. There may be electrolyte abnormalities and low glucose levels. Blood cultures may be taken before antibiotics are given to determine exactly what kind of bacteria is causing the problems. The foal's chest, abdomen and umbilicus may be ultrasounded to get an idea where this infection may be coming from and further confirm the diagnosis.



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Whatever route the bacteria entered, the treatment is similar except if the entry route was the umbilicus. If the umbilicus is infected then it may be surgically removed. In all cases systemic antibiotics are given. With some foals hyperimmune plasma may be given because it is high in antibodies. This might help fight the infection. Antibiotics and supportive care are critical to recovery. We just try to keep the body going buying time for it to win the battle against the infection.

The main thing that is recommend for preventing septicemia is a clean environment. Clean foaling stalls, clean equipment, clean mare and clean handlers are all very important. Make sure the foal nurses very soon after birth but also make sure he doesn't lick up a lot of contamination as he searches for his mother's milk. The mare's colostrum is very important because it has the antibodies he needs to combat common infections. If the mare has been leaking milk beforehand make sure you have a supply of colostrum ready to give to the foal. Your equine veterinarian can also do a blood test to determine whether or not the foal received enough antibodies or whether his passive immunity should be increased by other means such as plasma.

Foal septicemia can be a deadly and costly disease. Foals should be checked at least twice daily for the first few months of life so that this condition can be caught in its earlier stages. If you get ahead of the bacteria and toxins in the race for the foal's life, the foal has a much better chance of winning the battle.

## Ask The Vet

We would like to help you get your horse health questions answered by a knowledgeable equine veterinarian.

Submit your questions to us via email, we will present them to a

qualified veterinarian that specialize in equine health and then publish the question along with the vet's response in a future issue of The Horse Resource.

Ask away..... Send questions to us at: [thehorseresource@msn.com](mailto:thehorseresource@msn.com) Subject line: "Ask the Vet"

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