PREVENTION AND TREATMENT OF NEONATAL DISEASES IN KIDS/LAMBS

by Beth Johnson, DVM

You planned your breeding just perfect, and now the time has come to reap your rewards at kidding or lambing. There are several steps that should be taken to insure that these young offspring get off to the best start possible. Management efforts made towards adequate housing and monitoring after birth can increase the survivability of offspring.

ADEQUATE HOUSING

Prior to the start of kidding/lambing, a clean, dry, draft free area should be designed for the newborns. Newborn lambs/kids can become hypothermic very quickly and die when housed in a wet cold area. During the cold winter months, it is usually recommended to place the dam and her offspring in a pen to allow them to bond and provide warmth and nutrition as soon after birth as possible. These pens, sometimes referred to as "jugs", are 5'-7' square to provide enough space for the ewe or doe to lay down comfortably with her newborns, but not too much that allows her to avoid them.

FAILURE OF PASSIVE TRANSFER

Always be sure that the ewe or doe has an adequate quality and quantity of colostrum. If newborn ruminants do not receive adequate amounts of good quality colostrum in the first 12 hours after birth, they do not receive adequate amounts of life saving immunoglobulins resulting in failure of passive transfer. While drying the lamb/kid off and dipping the umbilical cord with chlorhexidine/7% tincture of iodine, reach under the ewe or doe and squeeze a little bit of colostrum out of each teat. This not only allows you to feel her udder but also allows you to evaluate the consistency of the colostrum. Some of the causes of agalactia (no milk) are: Caprine Arthritis Encephalitis/Ovine Progressive Pneumonia, scar tissue from previous mastitis, premature delivery, fatty tissue in the udder from obesity in the dam, or genetics. If you discover that the ewe/doe has very thick, small amount or no colostrum be sure to offer stored colostrum (frozen) or a colostrum replacer product. Be sure it is a colostrum replacer and not a supplement. It is recommended that newborn lambs or kids receive 2-3oz/lb of weight of colostrum at birth over the first 24 hours, i.e. a 10 lb newborn should receive 20-30 ounces of colostrum within a 24 hour period.

WHITE MUSCLE DISEASE/SELENIUM DEFICIENCY

One of the largest causes of death in newborns in the first 24 hours is hypoglycemia caused from not receiving an adequate quantity of colostrum. Just because you see a kid/lamb nursing doesn't necessarily mean that it is receiving the essential colostrum. White muscle disease, i.e. selenium deficiency, causes weakness in the muscles of newborn lambs/kids. These newborns with selenium deficiency are unable to control their tongue muscles. If you look closely, they appear to be nursing but the tongue is sticking out of the side of their mouth. Many of these lambs/kids experience difficulty in standing as well. Simply treat each lamb/kid with 0.5cc Bo-Se® subcutaneous injection at birth to help their muscles (both tongue and leg) perform properly.

HYPOTHERMIA/HYPOGLYCEMIA

If environmental conditions warrant, provide warmth to the newborn. If you decide to utilize heat lamps and/or heated huts, **Figure 1**, for the lambs/kids be sure that the lamps are secured so the electrical cords cannot be chewed on and that they will not fall down causing a fire hazard. Also, be sure there are enough huts available so that the lambs/kids don't pile up inside and suffocate the smaller, weaker ones. I utilize baby kid coats pictured in **Figure 2** that are easily made or purchased to place on the newborns to provide warmth for the first several days. Coats can also add an added advantage when trying to foster a kid onto a doe that has lost her offspring. Remove the coat from the dead kid and place it on the foster kid so she smells her kid's scent on the coat.

Now that you are past the first 12 hours after delivery, you are feeling fairly safe that everything is going to go smoothly. BUT, if you go to the barn and find a newborn unresponsive, then gather it up and place it somewhere warm. First thing you should do is take a rectal temperature. Almost always, its body temperature is low and it is suffering from hypothermia/hypoglycemia. Place it in a warming box- use a cardboard box with a heating pad placed under a couple of towels to prevent thermal burns and a warm towel to place on top of the lamb/kid. Milk colostrum/milk out of the dam and tube feed 60cc. In **Figure 3** you can see the tools necessary for tube feeding lambs/kids. Be sure the colostrum/milk is warm but not hot. Before too long the newborn will start coming around and you can take them back down to their dam after their

Figure 1. A securely fastened large plastic drum with heat lamp securely fastened is ideal but be sure there aren't too many newborns in the pen.

Figure 2. Picture demonstrating a very simplistic kid warming box with a heating pad under two towels. The kid is wearing a kid coat that was placed on it at birth. Notice the kid is not completely cleaned. We try to maintain as much natural odor as possible on the kid to make it easier for doe to claim the newborn when it is placed back with her.

Figure 3. A 60cc Cather tip Syringe and Lamb/kid Feeding Tube is all that is necessary to tube feed a weak newborn.

body temperature is normal (100-102°). Always try to diagnose the reason why it became hypothermic, i.e. lack of nutrition, diarrhea, pneumonia, sepsis, or meconial impaction. If the environmental temperature is extremely cold, you may not want to leave the newborn in the barn for an extended period until it appears that it can control its internal temperature.

MECONIAL IMPACTION

The first bowel movements of young lambs/kids, called meconium, are extremely thick, tarry and black. The colostrum they consume along with the dam's maternal instinct and nurturing will aid in evacuation of the meconium. For several reasons, delayed nursing, not enough colostrum, abandonment, or hypothermia, can cause impaction of the meconium in the intestinal tract. Most newborns with this condition appear full but fail to nurse and succumb to sepsis, hypoglycemia, and death within 72 hours after birth. If you notice a newborn that is weak or doesn't want to nurse, take its rectal temperature. If the stool on the thermometer appears dark and sticky instead of yellow, then they probably have meconial impaction. I utilize small animal or infant enemas applied once or twice rectally as an aid to evacuate the large colon.

Now that we have discussed ways to get the lamb/kid off to a good start, I will discuss some of the bacterial, viral and protozoal diseases and their symptoms.

Septicemia

When a lamb/kid develops septicemia, it has disease-producing organisms or their toxins in its blood. It is usually the result of a bacterial infection which can occur while the lamb/kid is in the uterus or during, at, or immediately after birth. The route of infection can be the blood of a sick dam, an infected placenta, the lamb or kid's umbilical stump, mouth, nose (inhalation), or wound. An early sign of septicemia is usually depression. Most young lambs/kids will rise when you come up to them and stretch. If they remain laying down and/or stand in a hunched position, appear weak, and reluctant to nurse then, they may be developing septicemia. Advanced signs of this are swollen joints, diarrhea, pneumonia, meningitis, cloudy eyes, and/or a large, tender umbilicus. When their rectal temperature is taken, they may or may not have an elevated temperature and in advanced stages, many have subnormal temperature. Most septicemic lambs/kids have a history of inadequate colostrum intake or failure of passive transfer. Unfortunately, most cases of septicemia are very difficult to successfully treat. Injectable antibiotics must be used and supportive care provided.

Diarrhea

Diarrhea is one of the leading causes of death in young kids/lambs from birth to one month of age. Contrary to older sheep/goats, diarrhea is not caused by intestinal parasitism until they are at least 6 weeks of age except with coccidiosis in severely mismanaged herds. Most of the causes of diarrhea in newborns is caused by bacteria, viruses, and/or protozoal organisms. The clinical signs develop as follows[1]:

Production of thin and watery feces
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Signs of dehydration appear (sunken eyes, dry mucus membranes, rough hair)
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Extremities become cold to the touch
↓
Loss of appetite
↓
Difficulty getting up
↓
Unable to rise
↓
Loss of consciousness

If it appears to be a herd/flock outbreak in newborns, it is essential to diagnose the cause of the diarrhea and develop a treatment plan. A fecal culture/exam may diagnose the cause but a thorough necropsy may also be necessary to determine the causative organism. Some of the causes of diarrhea include: *E. coli, Salmonella spp., Clostridium sp., Campylobacter, Rotavirus, Coronavirus, Cryptosporidium parvum, Eimeria spp.* (coccidiosis), *Giardia* sp.

Once a diagnosis has been made, consult with your veterinarian to develop the appropriate strategy for treatment which will involve antibiotics, electrolytes and probiotics. In the face of an outbreak, it is essential to thoroughly clean and disinfect the lambing/kidding area between animals.

Pneumonia

Many factors lead into pneumonia caused by viral and bacterial organisms. As with diarrhea, pneumonia in lambs/kids less than one month of age is usually attributable to lack of adequate colostrum intake or failure of passive transfer. Environmental conditions, i.e. bad ventilation, high ammonia levels, mold, fungus, and significant fluctuations in environmental temperature, may also compromise the respiratory tracts defense mechanisms allowing the bacterial organisms to develop pneumonia. Some of the more common bacterial organisms are Pasteurella multocida, Mannheimia haemolytica, Mycoplasma ovipneumonia, with *Trueperella pyogenes*, *Bibersteinia* trehalosi. Clinical signs include coughing, nasal discharge, depression, roughened hair coat, respiratory distress (usually rapid labored breathing), elevated rectal temperature or sudden death. Most of the effective antibiotics require extralabel use which requires a valid veterinary:client:patient relationship; therefore, consult with your veterinarian for the appropriate antibiotic treatment. Non-steroidal anti-inflammatories (i.e. Flunixin meglumine) should also be used but with caution to prevent gastric ulceration.

Starvation

Now that we have discussed most of the causes for neonatal diseases in kids/lambs lets be sure that we do not overlook the obvious: **Starvation**. I have seen many kids/lambs that never reach their full potential due to lack of nutrition from their dam. As stated earlier, be sure to check the dam's udder and milk production as soon after birth as possible. If you notice that the newborn kid/lamb is constantly nursing their dam, there is a good possibility that the ewe or doe is not producing enough milk or may have developed a case of mastitis. If you notice this, try offering a bottle of milk as a supplement and provide a creep area with a highly palatable ration. Then go to your record keeping system and mark the dam as a cull. Milk production is heritable and there is no sense in keeping an animal that cannot raise her offspring,

Soremouth in young kids/lambs may also cause starvation. If the lesions on the mouth are so severe, nursing may be too painful. Another concern is when the ewe or doe develops ulcerated lesions on their teat or udder from a nursing newborn with soremouth. If severe enough, the dam may not let her offspring nurse. It is easy to diagnose but these lesions take a while to heal. Apply an emollient antibacterial cream, i.e. chlorhexidine ointment, to the lesions to help decrease soreness and enhance healing. Supplement the newborn if necessary. **REMEMBER:** soremouth is zoonotic so wear gloves while treating or handling animals with soremouth.

To sum up the contents of this article, the **Five C's** provide an effective formula for managing and preventing diseases in any newborn:[1]

- Colostrum
- Cleanliness
- Comfort
- Calories
- Consistency

Footnote:

https://articles.extension.org/pages/15695/calf-diseases-and-prevention, Sheila M. McGuirk, DVM, PhD, and Pamela Ruegg, DVM, MPVM University of Wisconsin-Madison Extension Dairy Publication, January 14, 2011

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