

PSEUDORABIES**Aujeszky's Disease, Mad Itch, PR**

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Pseudorabies (PR) is a highly contagious Herpesvirus disease that is unrelated to common rabies. Swine are the natural hosts and serve as the primary reservoir and can transmit the infection to other swine and to cattle. There is no transmission between cattle which are frequently referred to as the "deadend" hosts. Other animals that may be infected or serve as reservoirs of PR include sheep, dogs, cats and wildlife such as racoons, foxes, skunks and rats. Man appears to be highly resistant to the PR virus with only one human case having been reported.

Based on surveys utilizing the PR antibodies in swine blood, it would appear that approximately 4 percent of Midwestern swine have had PR and apparently exhibited no serious symptoms.

ROUTE OF SPREAD

The pseudorabies virus is most likely spread by nose to nose contact of swine. The virus is present in the nasal secretions and saliva and may be inhaled in aerosol droplets. It is killed by drying and exposure to sunlight, but mechanical transmission on persons or objects is quite possible.

It has been observed that swine are more resistant to pseudorabies virus than are sheep, cattle, horses, dogs and cats. The highly susceptible species serve as monitors of inapparent infections in swine. This is particularly true of the infection due to the less virulent strains of viruses. Cattle fed in lots with swine can become infected from clinically normal swine. This is usually due to a bite wound on the vulvular-rectal area caused by swine attempting to entice cattle to get up and stimulate defecation, providing a food source for the co-

habitating swine. The practice of having swine follow cattle in the small farmer feedlot is not encouraged. Horses are very rarely infected.

The virus has been isolated from recovered immune swine. There have been many reports of outbreaks on farms which have purchased feeder pigs, although the source of infection may not be obvious in many herds.

CLINICAL SYMPTOMS

Adult Swine

Frequently, infected swine exhibit no symptoms but will transfer infection to cattle they have contact with. Young swine that have no maternal antibody to pseudorabies may exhibit a temperature elevation, paralysis and death. Mature swine frequently show no symptoms.

Signs observed in older swine include upper respiratory involvement which has been reported as the first sign of illness. The animals may cough, temperature is elevated and they may go off feed by the third day after exposure. Sows may become constipated and vomit during this period. Approximately half of the pregnant sows may abort. A higher percentage of abortions may occur during the early part of pregnancy than during the late pregnancy. Many of those in later pregnancy will retain the fetus which will become macerated (mummified) in the uterus. The signs of abortion observed may be mistaken for a SMEDI or enteric virus abortion. The PR virus can be isolated from the aborted fetus or placental membranes.

After six or seven days the animals will either begin to improve dramatically or central nervous system involvement will become severe and death may result in an additional two or three days.

Pigs Three to Five Months of Age

About 36 hours after exposure to the virus the pigs will show a temperature elevation up to 104 degrees F. It may continue to rise through 48 hours and by 72 hours it may range up to 107 degrees F. The pigs usually stop eating and may vomit. By the fourth day tremors of the tail or flanks may be observed. The animals are listless and prefer to lie quietly. By the fifth day the nervous symptoms become pronounced and incoordination is often present, particularly in the rear legs. Spasms of the legs may occur along with the convulsions.

As the pig raises his head the nostrils may retract, the head trembles and the eyes stare. The back is arched and the hair seems to stand on end over the neck and back. The animal loses its balance and pivots in a tight circle and often falls. The legs may stiffen and a spasm followed by paddling movements occurs. There may be excessive salivation from the open mouth. The convulsions may last for about 45 seconds and the animal then seems to relax, struggles to its feet and may walk away as though nothing had occurred. It may have three convulsions within a 10 minute period.

By the sixth day the animal may not be able to stand alone. It will become prostrate and die within 72 hours. The process following first symptoms may take as long as seven or eight days or may be as short as four days depending on the virulence of the virus and the susceptibility of the swine. Similar symptoms may be observed for pigs effected by gut edema, water deprivation (salt poisoning) or any other disease involving the nervous system, and veterinary aid should be obtained immediately upon discovery. Suspect cases should be sent to a diagnostic laboratory for a definite diagnosis.

Pigs Four Weeks of Age or Less

Newborn pigs from sows affected with pseudorabies may sicken within 36 hours of contact with the virus with scours and vomiting. This is followed by depression, trembling, incoordination, spasms and finally coma. Death may occur in 36 hours or less following the onset of symptoms. Some pigs can only move backwards, some may circle, others may lie on their side and exhibit running movements. Temperatures may be as high as 105 to 106 degrees F. The death loss among newborn pigs is severe and usually approaches 100 percent. In contrast, litters three or four weeks

of age at exposure suffer losses of 40 to 60 percent. Pigs of this age may be constipated rather than have diarrhea. The central nervous system symptoms are the same but they may survive a day or two longer than the newborn pigs.

Skin Irritation Is the Primary Symptom in Cattle

Skin irritation is at an infected wound site and results in self mutilation in cattle. Violent rubbing, biting and licking of the wound area will result in a complete denuding of the involved area (Mad Itch). The animal becomes so active at scratching the involved area that it interferes with eating. Excessive salivation may also occur.

In some instances the animals may become aggressive (appear much like common rabies) or there may be circling, muscular tremors and prostration. There may also be a twitching of the facial and neck muscles and flank muscles. The final signs include difficult breathing, convulsions and death.

(Approximately 50 percent of the involved herd will become infected with about 50 percent mortality.) There appears to be no difference in resistance due to breed, sex or age. Pseudorabies usually occurs in cattle that cohabitate with swine.

IMMUNITY

Passive immunity from recovered sows is not always effective in protecting nursing pigs. Baby pigs are susceptible to intranasal exposure and some will sicken and die even while nursing recovered sows.

Active immunity resulting from the infection has a high value in preventing re-infection in recovered animals. However, animals having an immunity may still become infected and may become shedders of the PR virus.

No vaccines are available for use in the United States. Hog cholera antiserum has demonstrated some promise by providing the antibodies from the gamma globulin pool from the wide base of swine used in the production of serum. It is of more value when administered at least 12 hours prior to exposure. Postimmunity from serum has traditionally been thought to be of value for approximately two weeks. Vaccination in countries permitting it has not been successful in eliminating PR and reportedly created numerous problems in some instances. Vaccinated and recovered swine may become carriers.

CONTROL OF INFECTION

A farm should be quarantined when pseudorabies is definitely diagnosed. Infected hogs should be isolated, especially from pregnant sows and young pigs. Care must be taken to avoid spreading the virus, and measures similar to controlling TGE should be adapted. Traffic from the infected farm should be rigidly controlled and care should be taken to burn the carcasses of dead pigs. Care should be taken so that dogs and predators do not drag the carcasses to other premises and do not eat from the carcasses. Dogs and cats may become infected by eating infected carcasses.

All new additions to the swine herd should be blood tested for PR before purchased. Keep new additions isolated for at least 30 days and retested by a veterinarian before adding them to the established swine herd.

Feeder pigs can be one of the primary sources of infection. Avoid having feeder pigs from an outside source on the same premises with breeding swine.

SOME FACTS TO REMEMBER

1. Pseudorabies is not related to common rabies and will usually not affect humans.
2. Death loss is highest in young pigs and decreases in older swine.
3. Abortion may occur in pregnant sows and may appear very similar to the SMEDI virus infection.
4. Recovered animals are not always immune to future attacks and often become carriers of the PR virus.
5. It is possible for clinically normal swine to shed the virus and may be spread to other animals such as cattle and sheep.
6. There is no vaccine or treatment available. Hog cholera antiserum may be helpful particularly if administered prior to exposure.
7. Control measures should include quarantine of the premises. Traffic should be controlled and infected hogs kept separate and isolated particularly from pregnant sows, young pigs and from cattle.
8. Notify your veterinarian if you suspect the PR infection in either swine or cattle.

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5M-5/77