

Melperone treatment of edema disease of pigs
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During the last two years we have seen an increasing number of cases with edema disease of swine in Sweden. The Swedish pig husbandry is characterized by strong specialization so that about 80 % of the pigs are reared in piglet-producing herds and sold to finishing herds when they have reached 20-25 kg bodyweight.

Edema disease has become a common cause of death especially in purchased pigs 1-4 weeks after transfer to the finishing unit. They used to be fed very carefully but today the breeding selection has achieved a rapidgrowing pig which is fed very intensively. Separate starter feeds with Mecadox[®] and extra vitamins have reduced the risk of scour. The pigs are now given 10-20 % more feed generally than a few years ago. Animal protein and essential amino acids are added to the feed for optimal growth. Ad lib feeding is rare in Sweden because of high demand of carcass quality.

It is common that 1-2 % of purchased pigs are hit by edema disease, most often 1-4 weeks after arrival. The diseased pigs often come from only one piglet producer. In 9 cases of 10 it is a small producer that weans the piglets late and gives only sow feed, which contains less protein and energy than what is used in the finishing herd. Those pigs are in good condition but they have probably not a fully developed enzyme-system for handling unaccustomed feed, especially proteins. Consequently they get an uncomplete digestion which is a good nourishment for harmful bacteria like hemolytic *E. coli*. Besides the pigs are stressed by being mixed with pigs from other herds.

The clinical symptoms of edema disease appear very rapidly. First you may see a swelling of the eyelids or a redness around the eyes. Ataxia and paralysis are soon developed. Many pigs show generalised tremors. These central nervous disturbances often develop into convulsions. The death is caused by acute, circulatory failure.

At gross necropsy a jelly-like edema is prominent most often in the mesenteric folds of the coiled portion of the large intestine and between the muscular and mucosal layers of the stomach wall. A characteristic finding in our material has been a network of fine fibrin-threads surrounding the intestine. Coprostase has been found in most cases.

Since earlier treatment with antibiotics and cortisone has had a most limited value, we have sought other unconventional medicines for therapy. It has been shown that some antipsychotic drugs are useful in the treatment of diarrhea, for instance those who are caused by *E. coli*-enterotoxin. We have used melperone, which since 15 years has been used as a neuroleptic in man. It sedates CNS activity and inhibits convulsion. In contrast to many other neuroleptics it has positive effects on the circulatory system. Melperone has antiarrhythmic properties and lowers the blood pressure both the pre-load and afterload, which is beneficial for an incompen-sated heart. Since collapse of the circulatory system seems to be the cause of death at edema disease melperone should be of value in treatment.

In cases of edema disease we used an i.m. injection of 4-6 mg melperone per kg bodyweight. If the treatment was performed in an early stage the result was successful in most cases. Even many pigs with convulsions were recovered. More than 100 pigs with edema disease were treated at 6 different farms. At these farms the recovery has been between 25 and 100 %. It is of course very important that the treatment is made at an early stage of the disease.

A double-blind, randomised, clinical test was performed. Farmers and stockmen who were well acquainted with edema disease got blind samples with either melperone or dihydrostreptomycin in adequate doses to treat edema disease in an early stage. (Melperone 5 mg per kg, dihydrostreptomycin 17 mg per kg). The diseased animals were examined by us as soon as possible to confirm the diagnosis. Dead pigs were necropsied. The code was broken after the first half of the trial.

A significant decrease of the mortality in the finishing units was found in the melperone group, in comparison with the dihydrostreptomycin group. However no difference in the mortality of the melperone- or dihydrostreptomycin-treated young piglets was found which may depend on the rapid course of the illness at weaning. These young piglets were often found moribund before the treatment. Consequently melperone has been found to cure edema disease of pigs in the finishing units whereas the effect in piglets after weaning must be studied further.