

Diagnosis : The diagnosis is based on

- (i) History of an outbreak
- (ii) Characteristic clinical manifestations.
- (iii) Pathognomonic post – mortem lesions: “button ulcer” of the intestine and “turkey egg” appearance of the kidneys.
- (iv) Histopathologic examination - brain tissues show peri vascular cuffing.
- (v) Animal inoculation test.
- (vi) Gel diffusion precipitation test.
- (vii) Conglutinin complement fixation test.
- (viii) Haemagglutination test
- (ix) Indirect haemagglutination test
- (x) Virus neutralization test
- (xi) Iodine reduction test
- (xii) Fluorescent antibody technique.

Treatment

There is no specific treatment against swine fever virus. Hyperimmune serum is the only treatment at the dose level of 50-150 ml per animal in the very early stages of the disease.

Control

- The effective control measure is the slaughter of the affected animals. They should be buried or burnt. The premises should be properly disinfected. Persons handling the affected pigs should not be allowed to handle the healthy one. Garbage should be properly cooked before offering as food to the pigs. In enzootic areas, annual vaccination programme with suitable vaccine should be made as a routine schedule.
- **Immunization:** Immunity against swine fever occurs in three ways viz.
 - Natural immunity : It is acquired after recovery from infection
 - Passive acquired immunity: can be obtained : By injection of hyperimmune serum, and Passage of antibodies from the dam to the foetus through placental circulation, or newly born through the colostrums.
 - Active acquired immunity can be acquired by
 - o Sublethal exposure
 - o Injection of immunologically active form of agents by various ways:
 - Lapinized swine fever vaccine: Dose 1 ml through subcutaneous route. Duration of immunity is 1-2 years.

- Tissue vaccine: Dose 5 ml through subcutaneous route. Duration of immunity is 10 months.
- Attenuated lapinized virus vaccine: Dose 1ml through subcutaneous route. Duration of immunity is 1 year.
- Swine fever vaccine : Dose 1 ml intramuscularly.

References

- (1) A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats and Horses. Seventh Edition 1989 by D.C. Blood and O.M. Radostits.
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- (3) Diseases of swine. Sixth Edition by A.D. Leman, Barbara Straw, Robert D. Glock, William L. Mengeling, R.H.C. Penny and Erwin Scholl.

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CLASSICAL SWINE FEVER



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Classical Swine fever

Synonyms

Hog cholera, Schweine pest, Peste dupore, Peste suina, Peste porcine, Peste porcina.

Introduction

It is an acute highly contagious viral disease affecting pigs of all ages, characterized by rapid and sudden onset, high morbidity and mortality with generalized haemorrhages. The disease may have a chronic course followed by recovery after treatment or new born piglets may be born with congenital defects. The disease shows wide diversity of clinical manifestations when caused by virulent strain of the virus. In the chronic form due to low virulence of the virus, the disease is associated with low mortality in mature pigs and abortion and still birth of pregnant sows.

Etiology

The disease is caused by a pestivirus (family Flaviviridae). The virus is closely related to the bovine viral diarrhoea. The virus is abundantly present in all secretions and excretions. The virus is destroyed by heat at 60-70°C. Some strains are partially resistant to moderate heat (56°C). Susceptible to 5% cresol, 3% sodium hydroxide, 1% orthophenyl with virucidal effect. The virus can survive in frozen pork for several months under refrigeration. Survives in meat during salt curing and smoking for 17 to >180 days depending on the process used. It can survive about a month at room temperature, 27 days in infected bacon, 17 days in the skin and muscles of slaughter animals, 14 days in fluid state and bone marrow, 15 days in decomposed blood, 3-4 days in decomposing organs. The virus can be preserved by salting and freezing for 2 months, and 1 month in meat. The virus may survive for 4 years in frozen pork. The virus can be preserved in 50% glycerin saline for 7 months. Virulence of disease is related to strain of virus isolate, age of pig and immune status of herd. Virus is highly contagious. Acute disease is still the prevalent form in younger animals, with subacute and chronic forms often observed in older animals.

Susceptible Hosts

All breeds, sex and ages of pigs are susceptible to this infection. Wild pigs often remain as inapparent carriers of the virus and thus act as a menace to domestic pigs. The virus can be passaged experimentally in rabbits, dogs, mice, pigeons.

Mode of transmission

Direct contact with the infected pigs is the principal way of disease transmission. The virus may enter through ingestion of garbage or contaminated feed and water. The virus used to gain access through the mucosa of the pharynx. The virus enters the respiratory

tracts through inhalation. The urine, nasal and ocular discharges are generally regarded as most infectious materials for disease transmission. In pregnant sows, the virus can cross the placental barrier and thus infect the foetus leading to still birth or abnormal piglets dying soon after birth. The virus may be transmitted in an indirect way through breeding and feeding appliances, human boots and vehicles. Mechanical transmission of the virus is through insects, pigeons, flies, mosquitoes and humans. The virus may be transmitted through the egg of a lungworm.

Clinical findings

The disease may appear in three clinical forms, viz Per-acute, acute and chronic form

Per acute form

- (i) This form is mostly noticed in young pigs.
- (ii) The disease develops quickly and terminates fatally in about 24 hours.
- (iii) There is a high rise of temperature (106-107°F) and erythematous patches in the non-hairy parts of the skin.

Acute form

- (i) Sharp rise of body temperature even up to 107°F and may persist up to 8th day or till death.
- (ii) Animals show dullness, depression, droopiness, anorexia, vomiting, constipation, severe diarrhoea, dehydration, loss of body weight.
- (iii) Hyperaemia of the skin with purplish discoloration of snout, ears, abdomen, inner side of the legs.
- (iv) Conjunctivitis and discharges from the nostrils are evident.
- (v) Central nervous system may be affected. The signs are wobbling gait, ataxia, tremor, convulsion, paralysis, circling and coma.
- (vi) When the reproductive system is involved then there are births of mummified, stillborn and abnormal piglets.



Skin discoloration piglet

Chronic form

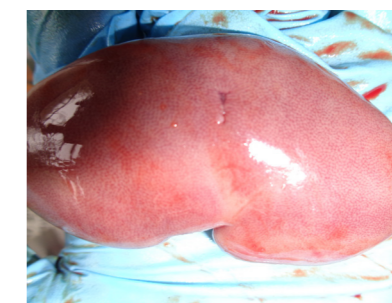
- (i) In this form morbidity is 90% and mortality is 60-70%.
- (ii) There are signs of chronic diarrhoea and pneumonia.

Clinical pathology

Pigs in the early stages of swine fever show a pronounced leukopenia. Leukocytosis may develop in the late stages of swine fever due to secondary bacterial invasion. Baby pigs less than 5 weeks old normally have low leukocyte counts.

Lesions

- (i) Petechial and echymotic haemorrhages in all serous surfaces.
- (ii) Liver is dark, congested, swollen and shedded with mottled appearance.
- (iii) Kidneys on removal of capsule show petechiae in the cortex. These give rise to 'turkey egg' appearance.
- (iv) Spleen, skin, lungs show infarction. Brain tissues show haemorrhage, oedema. Caecum and colon show "button ulcer" appearance.
- (v) Mucosa of the gall bladder may also show "button ulcer" appearance.



Button ulcer in intestine



Petechial haemorrhages in Kidney



Splenomegaly