Pig Article

Actinobacillus Pleuropneumonia (APP)

A bacterium called *Actinobacillus pleuropneumonia* (APP) can cause clinical disease in grower and finisher pigs. It is a highly contagious disease, spreading easily between pigs and resulting in a mortality rate of 30-50% in an acute, sudden outbreak. Chronic disease can also result, leading to decreased growth rates.

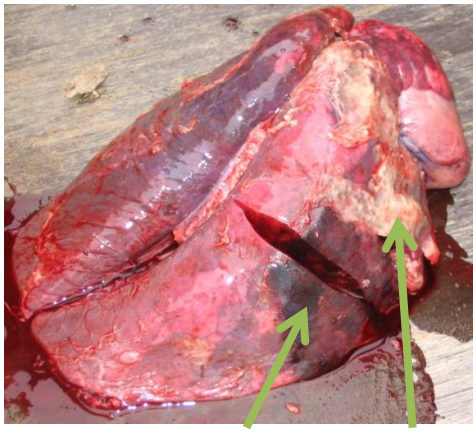
There are 15 different serotypes of APP, within which there are several different strains that cause mild or no clinical disease at all. APP is usually found in the tonsils, and even the presence of a pathogenic strain does not necessarily mean it will cause clinical disease. Although clinical disease can be seen with a simple infection of APP, outbreaks are usually triggered by stress, including other respiratory diseases such as EP (Enzootic Pneumonia) or PRRS ('Blue Ear' disease).

APP is an anaerobic bacterium, surviving in environments where there is no oxygen. The organism survives outside of the pig in mucous or muck for up to 5 days, and up to 30 days in clean water. It is predominantly spread from pig to pig, although it can also be transmitted short distances in the air, particularly in low temperatures and high humidity. Animals that recover become carriers, looking clinically well but shedding the bacteria for months – carrier pigs are often how APP is brought onto the farm. APP is sensitive to most disinfectants.

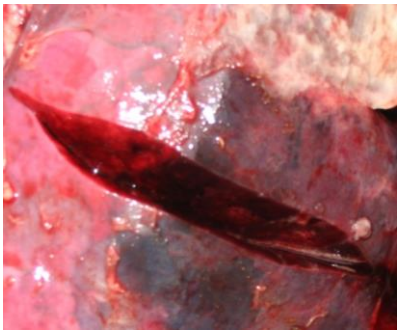
Clinical Signs

APP initially invades the tonsils while the pig is 4 to 12 weeks of age, and can remain there for a long period of time without causing any clinical signs. If it is a pathogenic, disease-causing, APP strain, the bacteria enter the blood stream and travel to the lungs. In the lungs, usually in the biggest lung lobe, the bacteria release toxins and destroy the surrounding lung tissue causing 'dark cherry-like lesions'. These lesions are dark red to purple, and penetrate deeply throughout the lung tissue. Over these lesions, APP causes inflammation of the lung surface, also known as pleurisy, that cab remain until slaughter.

In an acute outbreak of disease, sudden deaths are seen within 4-6 hours of the organism invading the blood stream that results in a septicaemia (infection in the blood). Due to the extensive lung damage caused by the toxins released, pigs may be found with a bloody mucoid discharge from their nose.



APP-like lesion with pleurisy



Dark red to purple APP-like lesion through cut surface of lung

Live pigs will be depressed, anorexic, reluctant to rise and will breathe with abdominal effort. Rectal temperature is very high at 42°C (107.5°F). Cyanosis, blue-purplish discolouration of the skin, can occur in severe infections as the body decreases blood flow to the skin and redirects it to vital organs such as the kidneys and brain.

In chronic long term disease, the lung lesions do not resolve but develop into abscesses as a result of the bacteria present and the dead lung tissue. In the abattoir, affected lungs will be condemned as a result of the abscesses and will also be affected with pleurisy. Due to the reduced functioning of the lungs, affected pigs will grow slower.

Diagnosis

As APP can be present but may not cause disease, diagnosis is made by post mortem and examination of the lungs where disease is suspected. The pig needs to be freshly dead or euthanased – if there is a suspect APP-like lesion present in the lungs, a sample is taken for the organism to be cultured at the laboratory and serotyped.

Regular abattoir monitoring is also useful for underlying subclinical disease (e.g. British Pig Health Scheme (BPHS)) since changing trends in pleurisy and APP-like lesions can be indicators of problems within the herd.

Treatment

The bacterium is usually sensitive to a wide range of antibiotics, but resistant APP strains do occur. Diagnosis by culture with antibiotic sensitivity testing will help identify resistant strains. In an outbreak, treatment is usually given individually since affected pigs neither eat or drink. When the outbreak subsides, medication of the feed and water with a suitable antibiotic can then be effective.

Treatment of animals will reduce clinical signs and mortality. Be aware however, that the animals may not build up immunity to the organism and so disease can re-occur at a later point.

Control & Prevention

As clinical and sub-clinical APP is a cause of pleurisy, regular abattoir monitoring (e.g. BPHS) can indicate whether there is an underlying APP problem on farm.

APP is difficult to control. It is important to reduce any stresses on the pigs that could trigger an outbreak of disease, such as temperature changes, high stocking densities, and ensuring that both food and water supply are regular and constant. Good pen hygiene and management (such as running pens all-in all-out) and good ventilation are also important to reduce stress on the pigs.

An acute outbreak needs to be identified early with prompt treatment. If other disease challenges, such as PRRS or EP are present on farm, it is important that they are controlled so that they don't complicate the clinical picture on farm.

Please speak to your Vet to discuss any questions you may have about APP on your farm