

55 – Aujeszky's disease III

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Immunity

The onset of an immune response to infection or vaccination is quick but variations in the development of immunity can be strain dependent and also depend upon route of infection and the immunocompetence of the individual animal.

Aujeszky's disease specific serum antibodies are usually present by the time clinical signs appear and, by the use of sensitive tests, these can be detected as early as 5-7 days post infection, whereas they will not be detected until 12 days post infection by virus neutralisation tests. Antibody dynamics can be detected in blood samples or oropharyngeal swabs.

Protective immunity following infection is durable and stable and gives protection against viraemia and disease. The virus is not easily shed in an infected herd.

In latently infected pigs, reactivation of the latent Aujeszky's disease virus by immunosuppression or new exposure to virulent virus can increase virus neutralising antibodies.

Aujeszky's disease maternal antibodies are transferred from infected sows to their offspring for years. Maternal immunity is present until up to 15 weeks postpartum. Maternally derived immunity prevents the transmission of Aujeszky's disease virus to newborn piglets and is able to protect against clinical disease by limiting virus replication in the central nervous system but this is viral strain dependent.

Maternal antibodies can reduce the ability of piglets to respond to vaccination but recombinant vaccines can avoid this effect.

Control and prevention

Aujeszky's disease increased significantly in the 1970s and eradication by testing and slaughter was practised in several countries and was successful in Denmark and the UK. In other countries the disease, but not the infection, was controlled by blanket vaccination with killed and live vaccines.

This situation improved in the mid-1980s with the advent of recombinant modified live vaccines. This allowed for the development of blood tests which could differentiate between vaccinated and naturally infected animals. This meant that the DIVA approach could be successfully used to eradicate Aujeszky's disease in many parts of the world.

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