PINMOORE ANIMAL LABORATORY SERVICES
BIRCH HEATH ROAD, TARPORLEY, CHESHIRE CW6 9UU

Common Rabbit Pathogens

Encephalitozoon Cuniculi

Enzephalitozoonosis is caused by Encephalitozoon cuniculi. About 80% of healthy rabbits carry the pathogen, without any clinical signs developing. Clinical disease can present with the following clinical signs: torticollis, ataxia, uveitis, posterior paresis and urinary incontinence. Other clinical signs can occur depending on the particular organs involved (such as hepatic and renal disease).

Transmission is by infectious spores excreted primarily in the urine but also in the faeces and transmission can occur both orally and nasally. Pregnant does can pass the pathogen on to her offspring in utero. The disease is a zoonosis and is an emerging human pathogen.

Detection is now available by two methods both the traditional serology, giving an antibody titre, to enable monitoring of clinical cases or detection of exposure to the agent.

The options available to help diagnose E. cuniculi are:

Serology – using a serum sample (not a gel tube) this gives an antibody titre.

E Cuniculi Serology Interpretation

- Titre of < 1:20 – Negative, no clinical signs present.
- Titres of 1:80 – 1:320 – Indeterminate Positive. Re-test in 4-6 weeks to assess rising or falling titre.
- Titres of 1:320 – 1:640 – High positive, if signs are present start therapy and re-test in 2-4 weeks.
- Titres of > 1:640: Very high positive. If typical signs are present then probably diagnostic. Treat and re-test after 4 weeks.

PCR – No special medium is required for this test, a sample of urine or faeces simply needs to be placed in a sterile universal tube. The sensitivity of this test is 96%, the specificity has yet to be measured but should be 100%. E. cuniculi is intermittently shed, so a 3 day pooled sample should be taken.

PCR vs Antibody Assessment

PCR	Antibody
Positive result is conclusive of infection but not necessarily disease.	Positive could mean an old infection
Negative result could be due to intermittent shedding	Negative result is significant
Stress-free collection	Stressful collection

To establish an E cuniculi free colony, rabbits should be treated and re tested until they are negative for a month.

Coccidosis

Coccidiosis is a disease of rabbits caused by a class of single-celled organisms known as protozoa. Coccidiosis is predominantly caused by the Eimeria species of protozoa of which there are twelve or more species, these primarily infect the intestinal tract.

Coccidiosis is spread through a rabbit eating the oocysts of the parasite which have been excreted by an infected rabbit. The oocysts can remain active for more than a year and thrive in warm, humid conditions. Common sources of infection are grass or green foods contaminated by infected wild rabbits.

Adult rabbits are often passive carriers of coccidiosis without showing any symptoms themselves.

Diagnosis of coccidosis can be based on demonstration of oocysts in faecal flotations.

Passalurus Ambiguus

Passalurus ambiguus (the common pinworm) is the most common helminth in domestic rabbits. The adult worms inhabit the caecum and colon, occasionally infested rabbits are obsessed with overgrooming of the rectal area. The worms are passed in faeces; reinfection occurs by ingestion of eggs. The worms can be seen in fresh faeces or eggs can be seen microscopically in faecal floats.

Viral Haemorrhagic Disease

VHD is caused by a calicivirus, which is highly infectious and virulent affecting rabbits 8 weeks or older. Morbidity is 70-80% of rabbits in an infected colony, within 2-3 days of viral entry. The symptoms of VHD include: fever, anorexia, depression, diarrhoea, cyanosis and death in most affected rabbits. In the terminal stages of the disease, rabbits may have epitaxis and develop convulsions, or may simply become comatose and die.

Diagnosis of the disease in an individual animal is based on gross post mortem examination and confirmed by histological examination. Serology tests for Calcivirus are also available for rabbits that recover or for other members of the colony.

The virus itself if extremely tough and can survive for many months in the environment, and can even resist temperatures of 60 degrees centigrade! As with myxomatosis, outbreaks of the disease in the wild rabbit population can be followed by transmission to domestic rabbits, either directly or via fomites.

Myxomatosis

Myxomatosis is a severe viral disease of rabbits that decimated the wild rabbit population when it arrived in Britain 50 years ago. Domestic rabbits are also susceptible to the disease and deaths in both indoor and outdoor kept pets are reported every year. Myxomatosis is usually spread by biting insects (fleas, mosquitoes) carrying the myxoma virus.

The number and severity of outbreaks varies over time: the myxomatosis virus is notorious for its ability to mutate from year to year and the background immunity in the wild rabbit population also varies. For example, in autumn 2000, southern areas of the UK (the south west, Hampshire, Suffolk, Cambridgeshire) experienced a severe outbreak of myxomatosis, thought to have been caused by a particularly virulent strain of the myxomatosis virus.

In acute cases, animals are lethargic, depressed and febrile. Oedema of the ears, eyes, lips and genitalia and anus is present and the disease rapidly progresses to death. In the UK all pet rabbits should be routinely vaccinated against myxomatosis and it is usually protective.

Serology tests for Myxomatosis are available to clinicians if required.

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