International Poultry Production

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Gumboro disease III

Diagnosis

Acute outbreaks of Gumboro disease are distinctive and easily recognised and a provisional diagnosis can be made. Typically mortality has a rapid onset with a rapid recovery with the whole episode typically being completed in under a week. This is often referred to as spiking mortality.

Confirmation of one's suspicion of acute Gumboro disease can be confirmed by a post mortem examination that shows a congested carcase, renal changes and changes to the bursa of Fabricius – enlargement with inflammation early on, followed by atrophy.

Virus isolation

Confirmation can also be made by isolating and confirming the identity of the causal virus. For this exercise the organs of choice are the bursa of Fabricius and the spleen as these contain the highest concentrations of the Gumboro disease virus.

Nowadays, direct immunofluorescent staining of these organs is a useful additional test to confirm diagnosis.

It is prudent to periodically isolate the causative virus so that changes in virulence and other properties in the field can be defined.

Serology

Nowadays, the ELISA is probably the most popular test for assessing Gumboro disease antibody levels.

A great attribute of the ELISA test is that the quantitative results can easily be placed on a computer and then day-old or breeder results can be used to assess the likely depletion of maternal antibodies in progeny chicks. This information can be used to predict an optimal time for vaccination.

In essence, this needs to be as soon as the vaccinal maternal antibodies have reduced to a level that will not interfere with vaccination. If delay occurs the danger is that field virus will enter the birds and stay 'one step ahead' of the vaccinal virus and be able to cause disease.

Differential diagnosis

The presenting signs are similar to those seen in acute coccidiosis and, of course, with any case of high mortality one should satisfy oneself that neither virulent Newcastle disease nor virulent avian influenza is involved.

As was mentioned, nephrosis is often seen in Gumboro disease and other causes of renal pathology should be considered including water deprivation and nephrotoxic strains of infectious bronchitis. Marek's disease has been known to cause bursal atrophy.

Treatment

There is no treatment for Gumboro disease.

Prevention

Historically, before vaccines were available, controlled infection was practised with some success.

Today, vaccination is the way to control Gumboro disease infection and many vaccines, that vary in terms of virulence and antigenic diversity, are available.

Live vaccines are classically known as mild, intermediate and 'hot' vaccines. Their use basically depends on the type of virus causing the disease and the level of maternal antibody that needs to be overcome.

Vaccines containing an intermediate Gumboro disease virus and a measured amount of antibody have been used with success in day-olds and in ovo.

New vaccine technology based on live recombinant virus vectors has also been successfully used.

Killed oil adjuvanted vaccines are used to provide a prolonged immunity in table egg layers and breeders and these are often administered in a multivalent vaccine that also contains Newcastle disease and infectious bronchitis vaccines and, in the case of table egg layers, EDS 76 vaccine.

Gumboro disease vaccination is a dynamic and movable feast dependent on many factors. Veterinary guidance on the construction of your vaccination programme is to be recommended.