

Meningoencephalitis of unknown aetiology (MUA)

What is MUA and what are the causes?

Meningoencephalitis of unknown aetiology (MUA) is the umbrella term for multiple diseases including granulomatous meningoencephalitis (GME), necrotising meningoencephalitis (NME) and necrotising leukoencephalitis (NLE). These different types of inflammation can only be distinguished by brain tissue biopsy or post-mortem, hence the normal descriptive diagnosis of meningoencephalitis of unknown aetiology (MUA).

The exact cause of MUA is unknown, however it is thought to be an immune mediated disease where the dogs own immune system attacks its brain tissue (and sometimes the spinal cord). There is likely a genetic factor and a 'triggering' environmental factor that leads to dogs developing this condition.

Which pets typically get MUA?

Dogs of any age and breed can develop MUA, however we typically consider young-middle aged toy and small breeds to be more likely to develop this condition. It is not contagious and therefore it is not spread from dog to dog.

What are the signs of MUA?

The signs seen from MUA can be very variable, and are dependent on the part of the brain and meninges that is inflamed. Signs that may be seen include seizures, changes in behaviour, reluctance to move the neck and changes in gait.

How is MUA diagnosed?

The diagnosis of MUA cannot be based solely on the clinical and/or neurological signs as other neurological conditions (e.g. tumours) can potentially cause similar signs. Diagnosis is usually based on a combination of history, neurological examination, imaging (such as MRI) and cerebrospinal fluid (CSF) analysis. We will usually take bloods as well to rule out any other causes of inflammation such as infections.

What treatment options are available?

The mainstay of treatment for MUA is immunosuppression with high doses of steroids (dexamethasone, prednisolone). Steroids have multiple side effects including weight gain, polyphagia, polydipsia, panting and muscle wastage. It is our goal to reduce the steroid therapy to as low as dose as possible to ensure that the MUA is controlled in remission. Many cases need lifetime treatment and relapse frequently occurs.

More recent evidence has shown that a combination of both steroids and a chemotherapeutic agent called Cytarabine may improve prognosis in some cases. Cytarabine is given by infusion over 8 hours. Each case is treated and managed as an individual.

What is the prognosis?

Unfortunately, the prognosis for MUA is highly variable: approximately 25% of dogs will die or be euthanised in the week following diagnosis. Others will enter full or partial remission from the disease and maintain a normal or very good quality of life for many months or years. Prognosis is often based on initial response to treatment.