

## **‘A Retrospective analysis of canine Meningoencephalomyelitis of Unknown Origin cases at the University College Dublin Veterinary Hospital 2014-2023’**

The term ‘Meningoencephalomyelitis of Unknown Origin’ - (MUO) comprises a collection of sporadic, idiopathic, non-infectious inflammatory brain conditions of notably young to middle aged, small breed dogs (Granger et al, 2010). MUO encompasses clinically indistinct, but pathologically distinct (Jeffery et Granger, 2023) diseases of the CNS; Granulomatous Meningoencephalomyelitis (GME), Necrotising Meningoencephalomyelitis (NME) or ‘Pug dog encephalitis’ and Necrotising Leukoencephalitis (NLE). While no definitive aetiology has been agreed on, there is strong evidence that the condition is immune mediated. These diseases can have dramatic clinical presentations which prove upsetting for owners and present both diagnostic and treatment challenges for veterinarians which further complicates the clinical picture (Cornelis et al, 2019).

Unfortunately, there is conflicting evidence on the prognostic indicators of this disease. It was thought originally that focal forebrain lesions were associated with a longer survival time (Munana et Luttgen, 1998, Coates et Jeffery 2014), however, more recent studies have not been able to replicate this theory (Cornelis et al. 2016, Lowrie et al., 2013). In a study by Cornelis et al., 2016, the presence of decreased mentation at time of presentation, seizures and increased neutrophil percentage in the CSF were all found to be significantly associated with death within 7 days after diagnosis, however, these results may be biased due to the inclusion criteria used which favoured animals that may have been more severely affected. Furthermore, this study also emphasised a need to evaluate short-term prognostic factors as twenty-six percent of the dogs in the study died within one week of diagnosis. Other prognostic indicators investigated included presenting symptoms, most notably seizures, MRI findings, CSF cell count and treatment efficacy (Cornelis et al. 2016, Lowrie et al., 2013). Coates & Jeffery suggested the need to further investigate the validity of MRI imaging and CSF abnormalities used as prognostic indicators which could facilitate more aggressive therapy in these patients. While there are promising results from these select studies, the current literature on prognostic indicators is scant which inspired this retrospective study of cases at the University College Dublin Veterinary Hospital (UCDVH).

The study which was completed during the summer of 2023 involved selecting relevant patients diagnosed with MUO at University College Dublin Veterinary hospital (UCDVH) between January 2014 and June 2023 and conducting a retrospective analysis of both paper and electronic case files. Information retrieved from the medical records included: breed, gender, presenting clinical signs, previous treatment, neurological examination & neurolocalisation, haematology & biochemistry results, infectious disease testing, any other relevant diagnostics, magnetic resonance imaging (MRI) & computed tomography (CT) reports, results of CSF analysis, treatment received (drug, dose & administration route) and long-term survival. The study also specifically documented the progression of ‘relapsed’ patients and possible causative factors that contributed to their deterioration as these are the hardest cases to prognosticate. This is the first retrospective study on MUO of its kind in Ireland and the data is also being used in a larger hospital study attempting to improve the current recommended 70-week cytarabine/prednisolone treatment protocol.

### **References**

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