Factors affecting the survival of dogs diagnosed with meningomyelitis of unknown aetiology: a retrospective study of 46 cases

Lorna Arrol¹, Rodrigo Gutierrez Quintana³, Thomas Maddox², Raquel Trevail⁴, Rita Goncalves²

- ¹ Cave Veterinary Specialists, West Buckland, Somerset, UK
² Small Animal Teaching Hospital, University of Liverpool, Leahurst, Wirral, UK
³ Small Animal Hospital, University of Glasgow, Glasgow, UK
⁴ Willows, Specialist Referral Service, Solihull, Birmingham, UK

The aim of this retrospective multi-centre study was to investigate factors influencing the outcome in dogs diagnosed with meningomyelitis of unknown aetiology (MMUA) causing signs of a myelopathy.

46 dogs diagnosed with MMUA were identified from two neurology referral centres in the UK. The mean and median age at presentation was 62.7 and 60 months respectively. Fifty eight per cent of dogs presented acutely and 70 per cent had spinal

pain. Toy breeds were the most common breeds affected. Magnetic Resonance Imaging (MRI) was performed in 45 dogs and was abnormal in 89 per cent of cases; 1 had a CT myelogram, which was normal. 40 per cent of dogs were euthanased or died as a consequence of their disease. The mean survival time was 1690 days from referral and 1698 days from disease onset. MRI features including the extent of the lesion and contrast enhancement had no influence on the survival time. The total cell count and protein level in the cerebrospinal fluid was not significantly associated with survival outcome. However, the predominant cell type found on analysis was significant, with a cell predominance of macrophages being negatively associated with survival outcome ($p<0.018$). Whilst treatment with an immunosuppressive drug had a positive influence on survival outcome ($p<0.02$), there was no difference in survival between dogs receiving prednisolone alone and dogs that received prednisolone with one or more additional immunosuppressant drugs. Dogs that showed an initial improvement in the first week had a significantly longer survival than those that showed no improvement in the first week ($p<0.0001$).

42 per cent of dogs had one or more relapse of clinical signs with the mean and median days to relapse 333 and 217 respectively.

The diagnosis of MMUA was associated with a variable prognosis and the clinician should be aware of factors that may influence survival and that relapses are relatively common.

Long term follow-up of 24 cases of steroid responsive meningitis arteritis (SRMA) in dogs

Fiona Whitworth¹, Sophie Adamantos², Vicki Black¹

- ¹ School of Veterinary Sciences, University of Bristol, Bristol, UK
² Langford Veterinary Services, Bristol, UK

SRMA is an inflammatory disease most commonly seen in dogs <2 years, usually with a waxing and waning course. Clinical signs typically comprise pyrexia, cervical spinal pain and depression. Relapse is common and information regarding long term outcome is limited. Previous studies have suggested that relapse occurs rarely beyond 2 years of age, and that immunosuppressive doses of corticosteroids are required for management.

Cases with SRMA were retrospectively identified using widely accepted criteria of neck pain, obtundation and pyrexia ($>39.2^{\circ}\text{C}$); neutrophilic pleocytosis on cisternal cerebrospinal fluid sample with absence of pathological organisms on cytology. Corticosteroid doses were obtained from the clinical record and referring veterinary surgeons were contacted for long term follow up.

Follow-up was available for 24 cases (median 27.5 months; range 2 months–5 years). 16 patients had history > 24 months after diagnosis. In three cases history was available

for <12 months following diagnosis; two of these patients were euthanased due to concomitant disease (metaphyseal osteopathy, renal failure) and one was lost to follow-up.

The median age of onset of clinical signs was 9 months (range 4–18 months). All cases received corticosteroid therapy following diagnosis. Three dogs received anti-inflammatory doses of prednisolone ($<1\text{ mg/kg/day}$) and two received immunosuppressive doses $>2\text{ mg/kg/day}$, the remaining 19 dogs received intermediate doses ($1\text{--}2\text{ mg/kg/day}$). The most frequently administered starting dose was 2 mg/kg/day prednisolone (14/24), with a range of $0.5\text{--}2.6\text{ mg/kg/day}$.

13 had no relapses following prednisolone treatment. Six (25%) had relapse whilst still receiving prednisolone. Three dogs relapsed beyond 2 years of age. One dog remained on corticosteroids until the last recorded clinical examination (33 months) due to relapse at withdrawal. Neither of the cases which were euthanased relapsed between treatment and euthanasia. The median age at last episode was 12 months (range 4–27 months).

There was no evidence that anti-inflammatory starting doses were associated with higher relapse rates compared to immunosuppressive doses ($\leq 1\text{ mg/kg/day}$, $n=3$, relapse rate 66%; $>1\text{--}2\text{ mg/kg/day}$, $n=19$, relapse rate 36%; $>2\text{ mg/kg/day}$, $n=2$, relapse rate 100%).

In contrast to previous reports, our findings suggest relapse may occur beyond 2 years old, and while receiving corticosteroids. This study also suggests that immunosuppressive doses of prednisolone may not be necessary to successfully treat SRMA.

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