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Owner Information Sheet – *Canine Epilepsy*

Background

Epileptic seizures are the most common neurological problem in dogs and we know how much distress and anxiety they can cause. All of the cells in the brain communicate via chemical and electrical signals. Epileptic seizures are the physical manifestation of uncontrolled and hyper-synchronous electrical activity in the brain. Different types of seizures can occur in dogs; most typically generalised seizures are seen. Generalised seizures cause a loss of consciousness, involuntary movement, urination, salivation and defecation. Smaller or 'focal' seizures involve more focal areas of the brain and may appear as muscle spasms/tremors, abnormal sensations or hallucinations. Dogs do not feel pain during a seizure and are largely unaware they are occurring, but they may feel disorientated and confused for a short period of time afterwards (usually not more than 24 hours).

Cause and diagnosis

Epileptic seizures may occur due to an identifiable cause; such as intoxication, kidney disease, liver disease, brain malformations, tumours or inflammation. When an underlying cause cannot be identified, primary or 'idiopathic' epilepsy is the presumed diagnosis. No single test can tell if an animal has idiopathic epilepsy. It is what we call a 'diagnosis of exclusion' as multiple tests are required to exclude all other causes (e.g. blood tests, brain imaging and spinal fluid analysis). Idiopathic epilepsy is most likely in dogs that are young (6 months to -6 years of age) at the time of their first seizure and are normal between the seizures.

Primary epilepsy most likely has a genetic cause, but it is rare that vets have been able to identify the gene responsible in individual breeds; however, several breeds are known to have a higher 'familial' risk of epilepsy. Most epilepsies are 'poly-genic', involving mutations in lots of genes. This means that breeding to prevent epilepsy is very difficult and idiopathic epilepsy can be diagnosed in any individual dog, of any breed, despite multiple normal generations and litters.

Treatment

It is possible for most epileptic dogs to have an excellent quality of life. However, epilepsy is a chronic and occasionally progressive disease that will need to be managed. Rarely, an animal may have a single seizure and not seizure again.

Despite treatment, epileptics are still likely to suffer from intermittent seizures. Full remission may occur with treatment, but our goal in the majority of dogs is to reduce the frequency and the severity of seizures by at least 50%. 25-33% of dogs with epilepsy will require more than one medication in order to control their seizures. There is some evidence in dogs suggesting an earlier initiation of treatment is associated with a better outcome.

We normally recommend epilepsy is treated when:

- More than two seizures occur in a six month period
- If there is more than one seizure in a 24 hour period (cluster seizures)

- If there is continuous seizure activity for more than 5 minutes, or recurrent seizures between which your pet does not fully recover (status epilepticus)
- The post-ictal signs are severe (e.g. aggression or blindness)
- The seizure frequency and severity is increasing

There are many different anti-epileptic drugs (AEDs) available for the treatment of epilepsy in dogs. Your veterinary neurologist or primary care veterinarian will determine which AED is suitable based on the type and number of seizures your pet has suffered, but also on licensing, formulation, and cost considerations.

With most AEDs side effects of treatment can be expected to occur. These side effects are normally at their worst when treatment is first commenced and their severity should decrease with time. Common dose-dependent side effects include increased thirst and hunger (consequently increased urination and weight gain), lethargy, panting, hyper-excitability and possibly wobbliness. Your veterinary neurologist or primary care veterinarian will discuss with you what side effects may be expected with each medication.

Monitoring an epileptic dog

It is very important to keep a seizure diary for your pet. The diary should include the date, the seizure frequency, the duration and appearance/severity of the seizure(s), whether there was any obvious trigger and whether abnormal behaviour was seen in the period after a seizure (post-ictal period). Sharing these diaries with your veterinary neurologist or primary care veterinarian will assist them in assessing whether treatment is reaching its goals.

During a seizure you should:

- Move any objects from around your pet that they may injure themselves on
- Turn off the lights
- Begin monitoring and recording the seizure duration and severity

Never be tempted to put your hands in or around your pets' mouth. Dogs may bite during or after a seizure as they will not recognise you. It is understandable that you will want to comfort your pet but only hold/pat them if they have stopped actively seizing and if they are seeking attention. If your veterinary neurologist or primary care veterinarian has prescribed rectal diazepam, this can be administered as instructed if it is safe to do so.

Contact your vet as soon as possible if:

- Your pet is actively seizing for more than two minutes
- Your pet has more than two seizures in a 24-hour period
- Your pet is showing recurrent twitching /tremoring

Occasional visits to your vet will be required during the course of treatment. Some AEDs will be metabolised by the liver. This metabolism can increase with time, meaning higher drug dosages may be required to maintain the same concentration of the drug in the blood. Your vet may suggest blood tests every few months to assess the concentration of the AED in the blood, or to assess the function of the liver. How often this is required will be dependent on the individual's response to treatment.

If you have any concerns about your dog or their treatment, do not hesitate to contact your veterinarian.

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