



Treatment for Epilepsy in Dogs Fact Sheet

Can you cure epilepsy?

Epilepsy is unfortunately a condition that the animal is born with and as such cannot be cured. Treatment for epilepsy in dogs aims at 'controlling' the seizures. While anti-epileptic drugs will make some fortunate animals seizure-free, successful treatment more often implies reducing the frequency and severity of the seizures with acceptable side effects.

It is therefore important to understand that the animal will still suffer seizures despite being on treatment. Unfortunately seizure 'control' may not be obtained in up to one third of animals despite adequate therapy.

When should epilepsy treatment for dogs be started?

There are two schools of thought. Many dogs will have a single seizure episode in their lives, therefore it may not be feasible to treat every dog that seizes.

The first school of thought advises treatment of seizures as soon as a dog is diagnosed as having recurrent seizures (i.e. after the second seizure episode). Experimental evidence and a single study in dogs suggest that early treatment for epilepsy in dogs offers better long-term control of the seizures as compared to animals that are allowed to have numerous seizures prior to starting treatment.

The second school requires balancing the benefits gained from the introduction of anti-epileptic therapy with the adverse effects caused by the medication and the demands on the owner.

Although largely arbitrary, the following would be a reasonable guide to starting treatment for epilepsy in dogs:

- Where more than one seizure occurs per month and/ or the owners object to their frequency
- If the animal has a very severe seizure or a cluster of seizures, irrespective of the frequency of the seizures or seizure cluster
- The seizures increase in frequency or severity
- An underlying brain disease has been identified as the cause of the seizures

What drugs are commonly used to treat epilepsy in dogs?

Many drugs to treat humans with epilepsy are either toxic to dogs or are eliminated too quickly by the body to allow good 'control' of the seizure. The first line treatment in dogs is Phenobarbitone (also called Phenobarb, Pentobarbital or Epiphen), Potassium Bromide (may be prescribed as Potassium Bromide syrup, Epilease capsules, Libromide capsules) and Phenobarbitone, Diazepam (Valium) or Gabapentin in cats.

Phenobarbitone is often the preferred first choice as it takes effect more quickly (within 2 weeks) than Potassium Bromide (3 to 6 months). Potassium Bromide can be used as first choice in animals with pre-existing liver disease or animals with very low seizure frequency. Diazepam is

not suitable for maintenance treatment of epilepsy in dogs as the duration of its effect is too short.

Why are regular blood tests important to monitor the treatment?

More than any other drug, the concentration of anti-epileptic drug in the blood is more important to consider than the quantity of tablet given. This concentration determines not only the good effect (also known as therapeutic effects) but also the toxic and inefficient effects. Blood concentrations of Phenobarbitone and Bromide should be monitored to ensure that they remain within a certain range of concentration known as the therapeutic range.

Failure to be within this range (i.e. the concentration is too low or too high), requires the quantity of tablets to be changed and the blood concentration re-checked a few weeks later. Response to treatment for epilepsy is extremely variable between animals. Some will need to be on the low end of the therapeutic range while others will need to be at the top end to experience therapeutic effects. This means that checking the concentrations are within the therapeutic range is not enough and consideration must be given to what effects (beneficial or undesirable) it has on the animal.

Compared to Bromide, the concentration of Phenobarbitone tends to drop with time in dogs (more or less quickly depending on the dog) if the quantity of tablet is kept unchanged. This means that the quantity of tablets will likely need to be increased to keep the blood concentration at the same level. Again this does not imply the animal will be more likely to suffer side effects as the inefficient, therapeutic and toxic effects are related to the quantity of drug in the blood and not the quantity of tablet given.

When should the anti-epileptic blood concentration be checked?

Determination of the blood concentration of Phenobarbitone is indicated:

- 2 weeks after starting treatment for epilepsy in dogs or changing the dosage
- When the seizure frequency seems to increase
- Every 3 to 6 months to verify that blood concentrations do not drift out of the intended range
- When undesirable drug-related side effects are suspected

Determination of the blood concentration of Bromide is indicated:

- 3 months after starting treatment or changing the dosage
- When undesirable drug-related side effects are suspected

What are the side effects of anti-epileptic drugs?

Therapy for epileptic seizures may have side effects that, on rare occasions, can be worse than the seizures themselves. Mild side effects are common when first starting treatment for epilepsy in dogs (or increasing the dose) with Phenobarbitone or Bromide and include increased thirst and appetite, more frequent urination, mild sedation and mild wobbliness in the back legs.

Phenobarbitone can have, on very rare occasions, more serious side effects such as liver toxicity and blood abnormality (low red blood cells, low platelets and low white blood cell count). It is however important to be aware of two points regarding side-effects:

1. Dogs on Phenobarbitone will frequently show some abnormal liver and hormonal parameters without significance for the animal's health and
2. Chronic liver toxicity is mainly observed in dogs for which the blood level of Phenobarbitone is above the recommended range.

Complete blood profiles (liver function test and haematology) are recommended on a six monthly basis to monitor for the animal for potential side effects. Bromide is a much safer drug by its nature (form of salt) despite still causing increased thirst and appetite. It is absorbed, distributed within the body and excreted without interfering with the liver. Its use as a second choice therapy is attributed to the long time it takes to reach efficient blood levels (around 3 to 6 months).

What are the options if the animal is not responding anymore to anti-epileptic drugs?

There are several reasons why an animal may stop responding to epilepsy medication:

- incorrect diagnosis (causes of epileptic seizures other than epilepsy)
- inadequate choice of anti-epileptic drug for the species treated (e.g. diazepam in dogs)
- inadequate dosage of medication
- animal becoming 'resistant' to the therapeutic effect of the drugs (also known as becoming refractory).

An animal having been diagnosed with epilepsy is defined as refractory to anti-epileptic treatment when its quality of life is compromised by frequent and/or severe seizures despite appropriate choice and blood concentration of the drug.

The first choice drug for use in refractory epilepsy is Bromide in dogs, used in conjunction with Phenobarbitone. Some dogs may need to be started on a loading dose (five times the usual daily dose per day for five days) to rapidly get the blood levels within the therapeutic range.

If the dog receiving epilepsy treatment is already on Phenobarbitone and Bromide, Gabapentin and Levetiracetam are two newer human anti-epileptic drugs that can be added to the treatment. Rectal Diazepam can be used at home in dogs with a tendency to severe cluster seizures to reduce the total number of seizure events during a cluster.

Can you take the animal off anti-epileptic drugs in the long-term?

It is important not to alter or stop the treatment for epilepsy in dogs without veterinary advice. As epilepsy is a condition that cannot be cured, it is very likely that the animal will have to stay on treatment for the rest of its life. Dosage reduction should only be considered if the animal remains seizure-free for at least a year and should be very gradual over many months to prevent precipitating seizure.

If you are concerned about the health of your pet you should contact your veterinary surgeon.