PAW HEALTH NETWORK INC.

SEIZURES

ABOUT THE DISEASE

Seizures are caused by disorganized electrical brain activity that cannot be controlled consciously. There are numerous potential causes of **seizures** in canine and feline patients, however they are often more severe in feline patients.

There are two main types of **seizures**, (with terminology often debated), which include:

- **Generalized** – Regular, easy to recognize, three distinct phases, loss of consciousness
  - Pre-Ictal Phase (Lasts minutes to hours) – Changes in behavior, pacing and anxiety.
  - Ictal Phase (Lasts seconds to minutes) – Active **seizure** phase, marked by a loss of consciousness
    - Falling to the side, paddling, rigidity; or extension of head/neck upwards
    - May include urination/defecation.
  - Post-Ictal Phase (Lasts minutes to hours) – Recovery phase
    - Disorientation, temporary blindness, panting, incoordination, vocalizing, staring.
- **Complex Partial Motor or Focal** – Irregular, difficult to recognize, no phases, no loss of consciousness
    - This type implies a more severe intracranial (brain) disease.
    - May include behavior changes (fear, aggression), excessive air licking, air/fly biting, twitches/tremors of facial muscles or one side of the body, and sometimes incoordination.

Broadly grouped, the causes of **seizures** are either:

- Intracranial diseases – those that are confined to the brain or within the skull.
  - "Idiopathic epilepsy" applies to generalized **seizures**, when the first started between 1-4 years of age.
  - **Seizures** starting <6 months of age or >7 years of age often suggest an intracranial lesion of severity.
- Extracranial diseases – those that are caused by problems affecting the whole body.

OBTAINING A DIAGNOSIS

Intracranial diseases can typically only be diagnosed with higher order imaging (MRI; CT) or with the aid of cerebrospinal fluid (CSF) testing. However, inconclusive results are often expected.

Routine laboratory testing, specialty hormone testing, radiographs (x-rays), urine testing, ultrasound, and other blood testing is often only beneficial in determining extracranial causes for **seizures** and **seizure**-like activity.

TREATMENT

Due to the expense and availability of testing, the underlying causes and subsequent direct treatment is often not found. The goal of anticonvulsant (anti-**seizure**) therapy is to reduce the frequency and severity of **seizures**, as it is often impossible to completely eliminate their occurrence. Treatment is usually life-long.

Anticonvulsants include:

- Levetiracetam – Effective immediately; must be given 3 times per day.
  - Poor treatment alone, so best used in combination with other medication.
- Zonisamide – Effective in about 3-6 days; must be given 2 times per day.
  - Newest management strategy with limited data on efficacy; comparably fewer effects on liver.
- Phenobarbital – Effective in about 3-6 weeks; must be given 2 times per day.
  - Older management strategy with more undesirable side effects; comparably more effects on liver.
- Potassium Bromide – Effective in about 3-6 months; must be given 2 times per day.
  - Oldest management strategy that is difficult to obtain with undesirable side effects and rarely used.

TIPS FOR SUCCESS

- Patients should be started on anticonvulsants or their management altered if they satisfy one of the following:
  - Generalized seizure ictal phase lasting longer than 5 minutes.
  - More than 3 **seizures** in a single 24-hour period.
  - More than 1 **seizure** per 3 weeks.
  - Any time cluster **seizures** are noted (no state of normal between back-to-back seizures).
  - Any time petit mal activity is witnessed (although very difficult to control).
  - Any patient who starts having **seizures** before 6 months of age or after 7 years of age.