

### **Clinical signs of Seizure Activity - The 5 Losses**

- Loss of consciousness
- Loss of muscle tone
- Loss of autonomic control
- Loss of normal behavior (sensation)
- ??Loss of memory??

### **Idiopathic seizure activity**

- Age (1-5 years)
- Short generalized seizure activity (30-120 sec.)
- Low initial frequency / regular intervals
- Normal between episodes
- Non-interruptible

### **When to initiate therapy**

- Any status epilepticus
- Any seizure activity lasting > 5 minutes
- Any cluster activity
- 2 or more episodes within 3 months

## Causes of Seizure activity

### Intracranial / Symptomatic

Degenerative storage disease  
Hydrocephalus  
Lissencephaly  
Arachnoid Cysts  
Primary Neoplasia  
Secondary Neoplasia  
Bacterial infection  
Fungal  
Distemper, Rabies, FIP  
Toxoplasmosis, Neospora  
Parasitic larval migrans  
Ehrlichia, Rocky Mountain Spotted Fever  
GME  
Traumatic (6mths-3yrs post)  
Feline Ischemic Encephalopathy  
CVA

### Extracranial /

#### Reactive

Hypoglycemia  
Hyperkalemia  
Hypoxia  
Liver Dz  
Renal Dz  
Hypothyroidism  
Hypocalcemia  
Hyperosmolality (ketoacidosis)  
Hyperlipoproteinemia  
Cardiogenic syncope / cerebral hypoxia  
Porto systemic Shunts  
Beta-cell tumor (insulin secreting)  
Thiamine deficiency (cats)  
Strychnine  
Metaldehyde  
Organophosphates  
Chlorinated hydrocarbons  
Lead  
Ethylene Glycol

# Medications

## Emergent therapy

### Diazepam

- 0.5-1 mg/kg bolus IV ONLY

or

- 1-2 mg/kg per rectum
- Repeat as needed (x3)

Diazepam CRI rate: 1-2 mg/kg/hr

Mg of drug to add to base solution =  $\frac{(\text{Dose } mg/kg/hr)(\text{Wt } kg)(\text{Volume base } ml)}{\text{Fluid rate } ml/hr}$

- Monitor CAREFULLY!!
- Continue until seizure free 4-8 hours
- Taper off over same time frame

### Phenobarbital

- Load = 16 mg/kg
- Dose varies with drug history & severity
  - Typically use 4 mg/kg bolus
- Give what it takes
  - Anesthesia if necessary
- Be prepared to support ventilation

### Pentobarbital

- Load = 6 mg/kg

- Typically use 2 mg/kg bolus as needed
- Give what it takes
- Be prepared to support ventilation

### **Propofol**

- Load = 2-8 mg/kg
- Be prepared to ventilate
- Infusion @ 0.05-0.4 mg/kg/min

### **Maintenance therapy**

#### **Phenobarbital**

- Recommendations:
  - 2-4 mg/kg PO BID
  - Baseline blood work prior to treatment
  - Check blood levels at 3 weeks
  - Check blood levels, CBC, liver function at 6 months and q 1 year

#### **Bromide**

- Recommendations:
  - KBr, NaBr
  - 40-70 mg/kg PO SID
  - Liquid Bromide to reduce vomiting and for easier dose adjustment
  - Check blood levels at 3 months
  - Check blood levels, at 6 months and q 1 year

### **Zonisamalde**

■ Dose 5-10 mg/kg BID-TID

### **Topiramate**

■ Dose = 2.5-5 mg/kg BID-TID

### **Levetiracetam**

■ Dose = 10-30 mg/kg BID-TID