DRUG CAUTIONS

Many sources helped to compile this information. Special thanks to Dr. William Thomas for his input and to Kathy and Roy Dvorak whose posts to the K-9 Epilepsy list appear here.

This is a list of medications which 'may not' be good for a seizure prone dog to take. As to be expected, what may be a problem for one dog isn't for another. Always share with your vet, a substitute vet, the emergency clinic, etc. exactly what current meds your dog is on and the fact (s)he has epilepsy.

NAME OF DRUG: **Acepromazine**
COMMON NAME: ace
USE OF DRUG: **tranquilizer**
Notes: There are several anesthetic protocols that are safe for dogs with epilepsy. In general, **phenothiazine tranquilizers** (such as **acepromazine**) and **ketamine** should be avoided.

NAME OF DRUG: **Ketamine**
USE OF DRUG: **anesthetic**
Notes: There are several anesthetic protocols that are safe for dogs with epilepsy. In general, **phenothiazine** tranquilizers (such as **acepromazine**) and **ketamine** should be avoided.

NAME OF DRUG: **Chloramphenicol**
USE OF DRUG: antibiotic
Notes: This drug will affect the metabolism of **phenobarbita**l (it slows it and could cause **phenobarbital** toxicity unless the dose is adjusted.)

NAME OF DRUG: **Baytril**
USE OF DRUG: antibiotic
Notes: (use may be for persistent urinary tract infection. comparable less expensive human equivalent is called **Cipro**. perhaps an alternate might be **Clavamox**)

NAME OF DRUG: **Keflex**
USE OF DRUG: antibiotic
Notes: (use may be for urinary tract infection. Maureen Sefter found the following warning in a book "About your Medicines" - let your doctor know if you have liver problems; let the pharmacist know if you are on **Valporic acid -Depakene**)

TYPE OF DRUG: **Antihistamines**
Notes: can potentially precipitate seizures, so should be used carefully.

NAME OF DRUG: **Carprofen**

COMMON NAME: **Rimadyl**
USE OF DRUG: Non-steroidal antinflammatory
Notes: Cautions recommends it should be used carefully in dogs taking **phenobarbital**.

NAME OF DRUG: **Metronidazole**
USE OF DRUG: control of diarrhea caused by bacteria

NAME OF DRUG: **Phenylpropanolamine**
USE OF DRUG: urinary incontinence

NAME OF VITAMIN: **B6**
Notes: "While it is true that B vitamins are water soluble and reasonably safe, almost any substance can be toxic at high enough dose. In dogs, massive doses of vitamin B6 causes spinal cord degeneration resulting in an abnormal gait." Wm. B. Thomas,DVM,MS.

A COUPLE OTHER COMMENTS:

Phyllis Walker said "key concern with the antibiotic, **Baytril,** is that its prolonged use may, in conjunction with the pb, compromise the liver--or, at least, such may have been what happened in our case". She went on to state "Apart from the possible (*speculated*) tie to liver damage, another concern with the use of the **Baytril** is that vets are going to start finding drug resistant bacteria if they use it without careful discretion.

Chris Mara wrote that the book "Principles of Medical Pharmacology" mentions **phenobarb** as a drug that affects how other drugs are broken down and used by the body, something to take into consideration when giving other drugs to our dogs who are also on pb.

Side Effects of KBr (Potassium Bromide)

A summary of the answers regarding side effects of KBR follows:

1.) According to the JAVMA, Vol 207, No. 2, July 15, 1995, adverse effects: "in human beings, the adverse effects of bromide are primarily neurologic (headaches, vertigo, halluncinations, delirium, ataxia, stupor), although acneform skin eruptions are also seen in about a quarter of these patients. In dogs, polyuria, polydipsia and polyphagia are common and apear to be magnified by concurrent administration of phenobarbital. Sedation, ataxia and hind limb weakness often are seen in the first few weeks of treatment, particularly in dogs given phenobarbital or in dogs that have received loading doses of bromide. These neurologic effects frequently resolve with a 10 to 30% reduction in the dosage of phenobarbital, usually without any need for a reduction in the dosage of bromide. Adverse neurologic

effects in dogs can also be seen with serum bromide concentrations greater than the recommended therapeutic range. In these dogs, a reduction in bromide dosage and an evaluation of renal function are indicated. Skin lesions have not been reported in dogs treated with pharmacologic doses of bromide. Although pancreatitis in association with the administration of bromide has been suggested by some investigators, there is no real evidence of a direct relationship between bromide administration and pancreatitis in dogs. Pancreatitis has not been observed in semichronic toxicity studies of bromide in rats even at massive doses. In these same studies, which included histologic and biochemical evaluations, there was no of the development of nephrotoxicosis. Dogs overdosed with bromide at 100 to 600 mg/kg/d for up to 25 weeks similarl had no clinical evidence of either renal or hepatic damage, although histologic results were not reported."

2.) The most noticeable side effect of KBr is sedation. Other side effects incluse hallucinations or mild skin irritation. The best thing about this drug are that the side effects are completely reversable once the drug is discontinued or the dose is reduced.

3.) KBr can cause pancreatitis, with vomiting, diarrhea, etc. Most cases don't show any side effects.

4.) The most common adverse effect of KBR therapy is polyphagia, recognized in about 25% of dogs on therapy. The polyphagia is usually quite striking, necessitating a change to a low calorie diet to prevent weight gain. Polydipsia and polyphagia are less common than with phenobarbital therapy, but are sometimes seen. About 1% of dogs experience an intolerable personality change, requiring a dose reduction or permanent discontinuation. Personality changes include irritability leading to snapping at people or other animals, seeking constant attention from the owner, aimless pacing, and most commonly, depressed mentation as a result of sedation. All dogs will show signs of bromide toxicity once the serum bromide concentration becomes too high for each individual's tolerance. Clinical signs of bromism are sedation, incoordination, and in dogs, most commonly pelvic limb weakness andlor stiffness is observed. This is a unique toxic effect of bromide and is easily misdiagnosed as osteoarthritis, etc. Initially, they may be slow to rise or have difficulty with stairs. If the signs are ignored and weakness progresses, they my be unable to stand. The best way to rule out bromide toxicity as the cause of weakness is to discontinue therapy for 5-7 days. Serum Br levels are useful, but cannot be used as the only way to diagnose bromism because of the wide range of sensitivity between individuals.

5.) KBr has a very narrow margin of safety -- signs of toxicity to be vigilant for are dizziness, ataxia (staggering), lethargy, depression (can progress to recumbency & stupor), hyper reflexes, and muscle pain.

6.) I have seen as the most common side effect, a crusting and drying of the nose in dogs.

SOURCE LIST FOR POTASSIUM BROMIDE (KBr) By State:

AZ	Sun City	Pet Health Pharmacy	(800) 742-0516

CA	Bellflower	B&BPharmacy	(800) 231-8905 fax (800)705-8964
CA	*	Rohnert Park Drugs	(800) 448-4355
IL	Naperville	Martin Ave. Pharmacy	(630) 355-6400
MD	Balitmore	Professional Arts Pharmacy	(888) 663-5686
PA	Emporium	Lundberg Pharmacy	(888) 792-6737 or (814) 486-3310
WI	Wood ruff	Island Pharmacy Service	(800) 328-7060

*Greg is on the list and has/had an epi dog. They will ship overnight if needed.
Medicine Shoppe Pharmacy - check local yellow pages
NOTE: All these pharmacies will require an Rx from your veterinarian to be mailed or fared.

PROTOCOLS FOR THE USE OF RECTAL VALIUM

THIS IS VERY IMPORTANT INFORMATION
FOR EPI'S ON PHENOBARBITAL

This was from a paper presented at the ACVIM (neurology)Forum in San Diego in 1998. It is titled "*High Dose Benzodiazepine per Rectum to Treat Cluster Seizures in Dogs*". It was presented by Michael Podell MSc, DVM, Dipl. ACVIM and Susan Wagner, DVM, MS, Dipl. ACVIM Ohio State University, Columbus Ohio
It talks about Lorazepam and Diazepam. Lorazepam, it says, appears to not be acceptable. **MOST IMPORTANT** it specifies that 2mg. per kg. of liquid valium (diazepam) is safe for epi's on phenobarbital. One kg. is equal to 2.2 Ibs.
NOTE ... You divide the weight of your epi by 2.2 to get the kilo weight, then times 2 (mg) for the amount for an epi on phenobarbital as recommended by Dr. Podell and Dr. Wagner.
ie. 100 Ibs. divided by 2.2 = 45.45 kgs. Your epi would need 90 mgs of liquid valium
75 Ibs. divided by 2.2 = 34.09 kgs. 68 mgs of liquid valium rectally
50 Ibs divided by 2.2 = 22.72 kgs. 45 mgs of liquid valium
25 Ibs divided by 2.2 = 11.36 kgs. 22 mgs of liquid valium

These are the conclusions from the article on diazepam:

CONCLUSIONS:
- Diazepam per rectum at 2mg/kg is safe to administer to primary epileptic dogs after seizure activity in the home environment.

- Owner compliance may be a limiting factor in the success rate to stop further cluster seizure activity.
- When owner compliance was present, diazepam per rectum was 72% more likely than placebo to stop recurrent seizure activity after the first injection

- Overall, diazepam per rectum at 2mg/kg should be used to treat cluster seizure events in the home environment for dogs on chronic phenobarbital therapy.

END OF QUOTE FROM ARTICLE

PROTOCOL FOR THE EMERGENCY MANAGEMENT OF CLUSTER SEIZURES IN DOGS

This protocol combines an approach for the emergency management of cluster seizures in dogs at home and has proven to be very effective. As always, consult with your Veterinarian before trying anything different.

The main approach this protocol is based on is described in Dr. Thomas' work with cluster seizures: WB Thomas DVM. Dipi.ACVIM (Neurology) University of Tennessee, Knoxville, TN e-mail: wthomas@utk.edu

Also used were observations of the use of rectal and oral diazepam successfully to stop cluster seizures by many list members and Dr. Podell's article:
Podell, M. The use of diazepam per rectum at home for the acute management of cluster seizures in dogs. J Vet Int Med (1995) 9:68-74.

It has been has been highly effective for list members to use oral valium, after the administration of rectal Valium, to maintain an anti-seizure level until the usual cluster time frame is past to be on the safe side. This can be 12, 24 or even 36 hours. Your vet can advise you on the proper time frame according to the usual cluster time period of your epi.

Another approach is to administer an extra dose of whatever antiepileptic drugs (AED) the dog is on after the Ist seizure and another dose in case of any successive seizures.

Some key points:

1.) You must hit the cluster as early as possible with administration of the liquid valium administered rectally to be most effective. Liquid valium should be administered rectally immediately after the 1st seizure or definitely after the 2nd seizure within a relatively short period of time, say, 30 minutes or less. The more seizures that they have in a cluster before starting treatment, the harder it is to break the cluster. Dr. Thomas' e-mails and Dr. Podell's article have guidelines of 1.0 mg/kg to 2.0mglkg. (if the epi is on phenobarb) A kg is equal to 2.2 pounds. (for example a 100 Ib. dog is 45.45 kg., 50 Ibs, 22.72 kg) It is important to use valium or the generic equivalent diazepam. There are other Varieties, i.e. oxazepam that have different half lives and periods of efficacy and do not apparently work as well.

2.) ABSOLUTELY necessary to be effective is to immediately use the recommended amount of rectal and oral valium. You are not going to kill them by giving them too much valium. It is almost impossible to overdose an epi.. There are guidelines in Dr, Thomas' e-mail (enclosed) and Dr. Podell's article on his research on the use of rectal valium on how much to use per kg of the dog'sweight. These guidelines are a low dose of 1.0 r-mg valium per kg of dog's weight to a high dose of 2.0mg valium per kg of dog's weight, a kg being equal to 2.2 pounds.

3.) This "safe" period would normally be at least Maintain valium administration with oral doses once the dog comes around and can swallow the tablets until you feel they have gone a "safe" period seizure free. 12 hours, perhaps as long as 24 hours depending on the individualcase. For a 100 1b. dog, this maintenance dosage would be about 30 -mg of valium every 3 hours, again needing to be adjusted for the individual case.

NOTE: The only difference with the use of the rectal and the oral valium is how quickly it gets into the bloodsteam and is effective. The liquid valium administered rectally is absorbed quickly and begins being effective within 10 minutes, whereas the oral valium could take 30 minutes or longer. Also, the liquid valium can be administered rectally eVen while the dog is having a seizure, which would not be possible with the oral valium. Therefore, liquid valium is used rectally for the Ist dose to start having an effect to break the cluster as quickly as possible. After the Ist dose of rectal valium, you can use the oral valium to maintain the level.

4.) Valium has a short life, therefore you need to give additional oral valium every 3 to 4 hours to keep the level up.

5.) After the 1st seizure and again after the 2nd seizure, (if the 2nd follows within 4 hours of the 1st,) an additional dose of the AED drugs is administered (in this case, Pb and Kbr).

In summary:

a) during the 1st seizure, administer liquid valium per rectum in a dosage at least equal to the recommended low dose. After your dog has started to come out of the seizure and you feel they can

once again swallow safely, administer additional oral valium tablets to bring the total dosage of combined rectal liquid Valium and oral valium tablets into at least the mid- range of recommended dosages. At the same time, administer an extra dose of the antiepileptic drugs that they are normally on.
b) if a 2nd seizure occurs within a fairly short period of time, say within 4 hours, repeat step a).
c) if there is not a 2nd seizure within 3 hours after the Ist, administer additional oral valium to maintain the level. Continue every 3 hours until you feel the emergency has passed, usually for the period of the next 12 to 24 hours

NOTE: Once again, you should always consult with your Veterinarian. The dosages and timing of administration would need to be adjusted to your individual case. The key point is use of the rectal valium early in sufficient dosage to be effective, followed by oral valium to maintain the level, and additional dosages of the AED that your particular dog is on.

PROTOCOL FOR RECTAL VALIUM,

submitted to the K-9 Epilepsy Mailing List
by Rich Brady & Joanne Carson Ph.D.
(310) 476-1235 Los Angeles, California

Here is a valium (diazepam) protocol that has proved to be very effective for stopping cluster seizures and being able to keep your dog at home, rather than having to rush them to the ER and perhaps leave them there. Look it over and let us know if you or your vet have any questions. Vets refer to diazepam which is the generic name but the brand name of valium is more commonly known by non-professionals.

Key points:
1.) use the liquid valium rectally as soon as possible and use enough valium (guidelines in the protocol - I.Omg. Per kg., 2.0 mgs per kg if your dog is on phenobarb - 1 Ib = 2.2kg.)
2.) maintain the valium level every 3 hours with oral valium until you think you are past the seizures (could also be maintained with liquid rectal valium, but oral valium is usually easier to obtain and the dogs when conscious do not particularly like the rectal administration)
3.) give an extra dose of the regular anti-epileptic meds also as soon as possible after the 1st. administration of valium, but just make sure they have come around enough to be able to swallow safely