

Metropolitan Veterinary Hospital

Akron Veterinary Internal Medicine/Oncology Practice

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Phenobarbital

Client Handout

Available in 15 mg (1/4 grain), 30 mg (1/2 grain), and 60 mg (1grain) tablets

USES OF THIS MEDICATION

When animals have frequent seizures, medication becomes necessary. In dogs and cats, phenobarbital is probably the first choice for seizure suppression. It is effective, safe if used responsibly, and is one of the least expensive medications in all of veterinary practice. Since treatment with phenobarbital is generally life-long, periodic monitoring blood tests are recommended.

Most often phenobarbital is used to suppress epileptic seizures (i.e., seizures for which a cause has not been identified), but phenobarbital can also be used against seizures due to brain tumors, poisonings, or infection as well.

Phenobarbital is absorbed well into the body when given orally and peak activity occurs 4 to 8 hours after the pill is given.

When phenobarbital is started, it takes 2 to 4 weeks to reach a stable blood level and cannot be fully relied upon to prevent seizures until this period has elapsed.

It is usual to run a blood phenobarbital level at the end of this period to determine how the pet is absorbing the medication.

SIDE EFFECTS

Excessive thirst and urination and excessive appetite are not uncommon side effects of phenobarbital. If they occur, they do not generally go away as the patient adjusts to medication. If they are severe, medication may have to be changed.

It is not unusual for some patients to demonstrate depression or sedation when phenobarbital therapy is initiated. This effect is generally transient and resolves as the patient acclimates to the medication. If this problem has not resolved after two weeks, a phenobarbital blood level can be drawn to determine if the dose is too high for the individual in question. Running a blood level sooner may not be useful as it takes a couple weeks to achieve a stable and meaningful blood level.

Rarely, anemia (lack of red blood cells) can occur with phenobarbital exposure. Should this occur, a different seizure medication should be selected.

Chronic exposure to phenobarbital can lead to scarring in the liver and liver failure that can be irreversible. Proper monitoring tests are geared for heading off such an event in plenty of time to change medication.

MONITORING

Phenobarbital is able to induce the metabolic enzymes, thus making them more efficient at removing toxins. Part of this phenomenon involves elevation of liver enzyme tests on a blood panel. As previously mentioned, monitoring by periodic blood testing is important in catching any impending liver problems while they are still insignificant but this is complicated because elevations in liver enzymes occur with normal phenobarbital usage.

There are many monitoring protocols. Our hospital recommends a phenobarbital blood level drawn at the time of day when the level is the lowest (a trough level) 3 to 4 weeks after starting phenobarbital followed by a similar phenobarbital level every 6 months. We also run a liver function test called a bile acids test every 6 months to accompany the phenobarbital level.

INTERACTIONS WITH OTHER DRUGS

Phenobarbital is removed from the body primarily by the liver (75% is removed by the liver, 25 % by the kidney). As mentioned, in the liver, phenobarbital has a unique ability to induce the microsomal enzymes, which means in more simple terms that chronic exposure to phenobarbital makes the liver more efficient at removing other toxins. Other medications which will not work as well in the presence of phenobarbital include: Lysodren (treatment for Cushings disease), chloramphenicol (an antibiotic), corticosteroids (such as prednisone, dexamethasone), doxycycline (an antibiotic), cardiac beta-blockers, quinidine (a heart rhythm medication), theophylline (an airway dilator), and metronidazole (a multi-purpose antibiotic/GI medicine).

They will not work as well because they are removed from the body much faster than usual by the phenobarbital induced enzymes.

Phenobarbital's activity can be enhanced by concurrent administration of the following medications: chloramphenicol (an antibiotic), any anti-histamine associated with drowsiness, or any other sedative or tranquillizer.

If phenobarbital is used with griseofulvin(treatment of ringworm), the griseofulvin may not be absorbed optimally into the body and may not be as effective.

When unacceptable side effects develop with phenobarbital use, phenobarbital dose may be substantially cut back or even discontinued. Potassium bromide can be used as a seizure control medication in such cases.

Primidone is another anti-seizure medication that was once more popular in the past. The liver converts primidone to phenobarbital thus it is generally more efficient (and less expensive) to simply use phenobarbital. Further, if there is any question about liver function in a seizure patient, phenobarbital is likely to be a better choice.

CONCERNS AND CAUTIONS

MISSING EVEN ONE PHENOBARBITAL DOSE CAN BE ENOUGH TO TRIGGER A SEIZURE. It is important to comply fully with medication recommendations.

Because of the induction of microsomal enzymes previously mentioned, it is normal to see elevated liver enzymes (AST, ALP and ALT) on any blood chemistry that is performed. This makes interpretation of these values somewhat difficult.

The blood level of phenobarbital attained in an individual is not completely predictable by knowing the oral dose given. With time, the patient's liver becomes especially able to remove phenobarbital from the system and the level may go down. Or the opposite may be true and the liver becomes less efficient so that blood level goes up. For these reasons, blood levels of phenobarbital are periodically measured so as to periodically adjust the oral dose as noted above.

In patients with poor liver function or liver failure, phenobarbital may not be the best choice in seizure control.

The use of phenobarbital will interfere with thyroid function testing as well as with adrenal function testing. Monitoring hypothyroidism or Cushing's disease in patients taking phenobarbital is extremely difficult as test results will be difficult to interpret.