



# Procarbazine Therapy

*Procarbazine is a drug that crosses the blood brain barrier and enters the nervous system. This is an uncommon property that makes procarbazine an important drug for the treatment of central nervous system lymphoma and a similar disease called Granulomatous Meningoencephalomyelitis (GME). The application of procarbazine makes patients function and feel better, and reduces or eliminates the need for prednisone.*

## Response rates and timing of the response

In one study of 21 dogs with GME the use of procarbazine was an independent predictor of survival and doubled the survival time to an average of 14 months compared to dogs where a protocol was used that did not include procarbazine. Our experience has been that most patients respond well within 3 to 7 days of initiating therapy.

## Pharmacology

Procarbazine is a chemotherapy that binds or alkylates DNA and prevents inflammatory or cancerous cells from surviving. Procarbazine is metabolized by both the liver and kidney but is rarely associated with liver disease.

## Side-effects and toxicity

Side-effects, an unwanted effect of a medication, can be observed with procarbazine. In one study, 3/21 patients developed bloody diarrhea. This side-effect will improve with medication and a dose reduction. Procarbazine can cause a reduction in platelet production or white cell production and in theory, this could lead to bleeding or infection, respectively. Procarbazine is attractive because we have not seen liver or renal failure with this medication and these conditions are rarely reported. A complete blood cell count looking for drops in platelet counts or white cell counts is often recommended every week for four weeks when starting therapy, and then every two months along with a chemistry screen.

## Safety

You are to wear gloves when handling any chemotherapeutic agent. Gloves should also be worn when handling any of your pet's fluids or feces or materials having been in contact with your pet's fluids or feces up to 72 hours following the last dose administration. Anytime skin contact occurs, the area should be washed immediately with soap and water.

To reduce the risk of exposure the following precautions should be taken:

- The administrator should not be pregnant or trying to get pregnant or under 16 years of age.
- The administrator should wear the gloves provided while handling the medication.

Your pet should be directed to urinate in a confined area away from other pets and neighbors for 72 hours after administration. Direct sunlight will help to degrade the chemotherapy.

Side effects of procarbazine are uncommon but can include bruising, lethargy, fever, poor appetite, vomiting and diarrhea. If these are noted or you have any other concerns then please call BVNS.

#### Cleanup of Waste During Treatment:

If your pet vomits, regurgitates or drools excessively or urinates or defecates in the house within 72 hours of administering any chemotherapy drug, while wearing gloves please follow the instructions outlined below for cleanup recommendations:

1. If vomit – clean up food and fluid with paper towels to the point that only liquid is remaining.
2. Dilute remaining fluid (if vomit) or urine with 8-12 oz of water and absorb with paper towels.
3. Clean the area with a mixture of mild soap and water.
4. Clean the area (hardwood or carpet) with any standard cleaner.
5. Double bag all paper towels, rags, and gloves used and dispose of in the trash.



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