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# "Recommendations for Heartworm Therapy" and "Canine GDV: Heart Rhythm Disturbances"

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# Recommendations for Heartworm Therapy

In recent months, several articles have appeared in lay magazines espousing the use of "new" drugs for heartworm prevention and treatment. Because of the popularity of these magazines and the so-called infallibility of the printed word, you may be asked to answer numerous questions on this subject from your clientele.

Not only are these new treatments unreliable, but in some cases they may be injurious to the animal as well. One article recommended the use of piperazine as a heartworm preventive. Since the drug is cheap and safe to use, it could gain some popularity. This idea probably arose from the fact that piperazine is one of the breakdown products of diethylcarbamazine. However, research with piperazine has shown that it is *not efficacious* as a heartworm preventive.

Another article advocated the use of levamisole as a heartworm preventive. The author recommended that levamisole be given ten days out of each month. Because of the possible serious side-effects of this drug, this idea should definitely be discouraged.

The current recommendations for management of heartworm disease are as follows:

- a. Prevention: diethylcarbamazine citrate at 2-3 mg/lb daily from the start of the mosquito season until two months after the first killing frost.
- b. Treatment for adult heartworms: Sodium caparsolate at 0.1 ml/lb twice a day for two days.
- c. Treatment for microfilaria: with Dizan® currently off the market, there is no drug *approved* for use as a microfilaricidal agent in the dog. Because of this and the potential side effects of the drugs used, it is advisable to get written consent from the owner prior to treatment. Treatment with any microfilaricide should begin no sooner than six weeks after the treatment for the adults. Two drugs are currently being used to treat heartworm microfilaria:
  1. Levamisole: 5 mg/lb per os once a day for six days. It should be given shortly after a light meal. A blood sample is then tested for microfilaria. If the test is positive, treatment is continued at three-day intervals until the animal is negative for microfilaria. *Treatment should not exceed 15 days.*
  2. Fenthion (Spotton®): A pour-on organophosphate, 1 ml/10 lbs topically. Apply directly to skin of dorsal midline from tailhead region to midcervical area. If microfilaria are still present after one week, fenthion may be repeated up to two more times on a weekly basis. *No more than three weekly fenthion therapies should be given.*

## Canine GDV: Heart Rhythm Disturbances

William W. Muir, DVM, PhD\*

Gastric Dilatation Volvulus (GDV), otherwise known as bloat, is a critical and often fatal disease affecting dogs. A great deal of information relating to age, sex, breed, signs and symptoms associated with bloat in dogs has

been obtained from clinical observations. Within the last 10 years, veterinary clinicians have been able to gain greater insight into the mechanisms whereby bloat can result in death. One of the mechanisms responsible for the poor prognosis associated with canine bloat is the development of heart rhythm disturbances. Again, close clinical observation has indicated that a variable percentage of dogs with bloat

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develop heart rhythm disturbances. These abnormalities in heart rhythm can be responsible for the dog's poor response to conventional medical and surgical management.

During the past 4 years we have observed the development of heart rhythm disturbances in approximately 30% of 157 dogs with GDV admitted to the Ohio State University Veterinary Teaching Hospital. The heart rhythm disturbances observed have varied in type and significance. The most significant in heart rhythm disturbances are those that originate in the pumping chambers. Arrhythmias originating from these chambers result in inadequate pumping activity, thereby interfering with normal blood flow and circulation. Abnormal or poor blood flow can lead to a deterioration of the dog's physical status and compound other clinical diseases.

We have found that the timely use of appropriate antiarrhythmic agents will often reduce or eliminate these cardiac rhythm disturbances. One of the drugs most effective in this regard is the local analgesic, lidocaine hydrochloride. Dogs receiving lidocaine hydrochloride usually respond to its beneficial antiarrhythmic effects within the first three to six hours after the initiation of therapy. We feel that intensive clinical care and heart monitoring is essential for the first 48 to 72 hours after a dog with bloat has been admitted to our hospital. We also feel that close monitoring of heart rhythm is essential if the deleterious effects of heart rhythm disturbances are to be avoided. Furthermore, we suggest that the use of lidocaine hydrochloride as an antiarrhythmic is effective in the majority of heart rhythm disturbances that are observed in association with canine bloat.

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