

THE PET PHARMACY

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Methimazole

The most common medication prescribed to treat feline hyperthyroidism is called methimazole (trade name Tapazole). This medication has virtually replaced the older medication PTU because methimazole is effective without as much tendency for side effects. In Western Europe, methimazole is not available and a related drug, carbimazole, is used.

All these medications block the production of T4 and T3. It is important to understand what the potential side effects of methimazole and its relatives are and the monitoring that is generally recommended.

Advantages of Using Methimazole/Tapazole

- Medication is inexpensive relative to radiotherapy or surgery.
- Control of thyroid disease is achieved only while the pet is on medication so that if there is any problem with exacerbation of poor kidney function, treatment can be discontinued.
- No hospitalization is required.
- Side effects are relatively uncommon.
- If an occasional dose is skipped, no harm is done.
- If after the first 3 months of therapy no side effects have been encountered, the chance of side effects occurring thereafter is substantially reduced.

Disadvantages of Using Methimazole/Tapazole

- Medication must be given at least daily (usually twice daily). Some cats simply will not take oral tablets at this frequency. Methimazole is readily made into a flavored liquid for easier

administration by a compounding pharmacy or it may even be possible to convert methimazole into a gel administered on the hairless inner surface of the cat's ear (see below).

- Approximately 15% of cats will experience some kind of side effect. The usual side effects are: **lethargy, loss of appetite, and vomiting**. If one of these side effects occurs, medication is discontinued until the symptoms resolve. Medication is then restarted at a lower dose and gradually increased to the former dose. These side effects do not generally recur if medication is increased gradually in this way.

- Facial itching is a more serious side effect. This side effect also resolves with anti-itch medication and discontinuation of methimazole. Cats who have this side effect can be expected to have it again if medication is restarted and another form of treatment should be instituted. Facial itching occurs in less than 4% of cats on methimazole.

- Serious liver failure results in an extremely small number (less than 4%) of cats taking methimazole. This toxicity can be expected to resolve after discontinuation of the medication but, again, alternative therapy should be considered.

- Bone marrow changes can also result from methimazole administration. Blood tests evaluating white blood cell patterns should be periodically performed to monitor for these changes. This side effect occurs in less than 4% of cats on methimazole and necessitates a change in therapy.

- A study published in the February 15th, 2006, Journal of the AVMA by Milner et al found that when one excludes cats with pre-existing renal disease from the group and compares cats treated with radiotherapy vs. those treated with methimazole, those treated with radiotherapy had a much longer median survival time (4 years vs 2 years). This may be due to difficulties in regularly medicating cats with oral medication and ultimately leading to periods of incomplete treatment.

Most side effects occur during the first 3 months of methimazole therapy. Periodic blood testing to examine T4 level, white blood cell patterns, kidney function, and liver enzymes should be periodically performed. Be sure to ask your veterinarian to review an appropriate schedule for your cat.

Transdermal Methimazole

Many cats remain untreated for this ultimately debilitating disease because their owners cannot administer the medication. For many cats even converting the medication into liquid does not yield a comfortable alternative. Yet another choice has become available to make methimazole a viable choice for fractious cats: a gel of methimazole administered to the hairless skin of the inner ear flap. It is important to realize that the GI tract (whereby orally administered medications enter the body) is designed to absorb while the skin (whereby transdermal medications enter the body) is designed to serve as a barrier. This fundamental concept has raised many questions about the efficacy of transdermal medications. A study by Sartor, Trepanier, Kroll, Rodan and Challoner published in the September/October Journal of the American College of Veterinary Internal Medicine compared T4 levels (and other parameters) in 17 cats receiving oral methimazole vs. 27 cats on transdermal methimazole. They found fewer GI side effects (vomiting, diarrhea etc.) in the cats receiving transdermal methimazole but other side effects were the same in both groups. After 2 weeks of therapy, more cats on oral methimazole had responded to medication than had the cats on transdermal medication but by 4 weeks, the transdermal cats seemed to have caught up. This study had enough cats drop out of the study by 4 weeks, however, that whether the closing of the gap was truly of statistical significance. This means that the jury is still out on the effectiveness of transdermal methimazole though it looks like there is less potential for stomach upset with this route.