A Quick Update on Taurine

A few weeks ago, I posted about taurine and, more specifically, about some breeds which might be less efficient in producing it (you can read everything here).

As taurine deficiency can lead to DCM (dilated cardio miopathy) I think all those owning a breed at risk should assess their dogs. I eventually tested Briony and her results fell in the normal range: she eats an homemade diet and, apparently, despite my poor cooking skills, she is getting enough methionine and cysteine that she can convert into taurine.

As said above, her results are within the normal range, but I showed them to a nutritionist (Lucia Casini, Professor of Veterinary Nutrition at the University of Pisa, School of Veterinary Medicine) asking her whether Briony should benefit, like other athletes, from any taurine supplements during the hunting/shooting season and she said yes, to supplement with **500 mg a day** (she weighs around 20 kgs) in these periods.

Some of the laboratories testing for taurine in Europe are: Idexx, Laboklin and San Marco.

Considering that most of my readers own working dogs (read about the Gundog Research Project!), let me also add that these athletes might need more taurine than the average dog. The web is full of articles on taurine and DCM in dogs, go and read them if you want to know more, I am just here to spread the word and raise some awareness.

Taurine, English Setters & other breeds

Last week the server crashed after I published an article on tyrosine and dark coats. I stayed away from the admin panel for ten days because I was afraid I could crash it again, but now I am back discussing another amino acid. A couple of days ago, an English Setter owner living in the USA posted on FB about her dog's being diagnosed with congestive heart failure. The dog had developed DCM (dilated cardiomiopathy) and the cardiologist suggested testing his taurine blood levels. She tested him and her other dogs and the tests confirmed that some of them had indeed very low levels of taurine. Curiously, those with lower levels were fed a grain free, high protein, trendy dog food while the other ones, eating what would be considered an "average" dog food, were doing better.

Taurine has multiple functions, as you can read here, but can taurine deficiency in the diet lead to DCM? We know this can happen in cats: taurine is, for cats, an essential amino acid which means they cannot synthesize it and that it must be introduced with the diet. When it comes to dogs, instead, taurine is not considered essential as they can produce it by themselves. But… to do so, they need to convert dietary sulfur amino acids (SAA, methionine and cysteine) to taurine.

I decided to speak again with Lucia Casini, Veterinary Nutrition Professor at the University of Pisa, and she

confirmed what I just wrote above, adding that a lack of methionine and cysteine could, however, cause taurine deficiency. So, are some dog foods lacking of methionine and cysteine? Maybe, or it could also be that some animals are less efficient when it comes to transforming them into taurine. There are several breeds of dogs that have a lower than normal ability to convert SAA: American Cocker Spaniels, Cocker Spaniels, Golden Retrievers, Labrador Retrievers, St Bernard, English Setters and Newfoundlands (and probably more we still do not know about). In their cases, taurine supplementation could have a preventive, rather than curative role.

So… What should we do? I think further research is needed but, personally, owning an English Setter, I am investigating on laboratories which can assess taurine levels and trying to collect information about the cost of this service. Would I advise you to do the same? Probably, and I am also wondering if other breeds, especially those related to the aforementioned breeds and those prone to DCM, should be tested: more research is certainly needed!

Update: in Europe at least 3 labs test for taurine in dogs: Idexx, Laboklin and San Marco. Prices are around 40-50 euros. Update on my test here.

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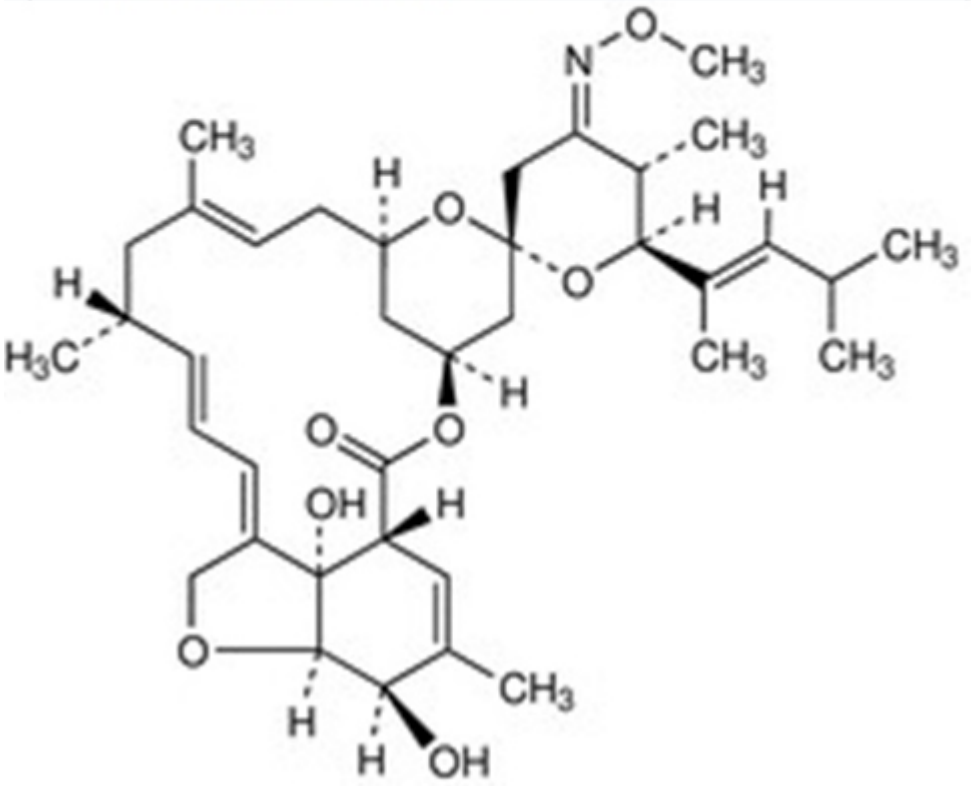
Heartworm “vaccines” are not vaccines!

These words came out of my keyboard a couple of days ago. It was one of the same old discussions in which vets end up being blamed for everything that goes wrong. Along the years, I have learnt to ignore them, but sometimes I cannot ignore the sacrifices I had, and I have, to face in order to graduate in veterinary medicine. Summarizing, the story was about an Australian Shepherd, younger than a year old, who died after being given the annual heartworm preventive (moxidectin, commercial name Proheart 6). To be honest, it is still not clear whether the dog died because of this drug, or by accidentally eating some poisonous plants in the garden. But, according to people, he died because of an ignorant vet. A mass revolt with more than 200, very confused, comments, exploded.

People refuse to believe that avermerctins (ivermectin, moxidectin, milbemycin selamectin….) used for heatworm prevention, hence at extremely low dosages, are perfectly safe for dogs who are MDR1- Multi Drugs Resistance Gene (affected). The dosage is too low to intoxicate them: it would be a whole different story if they were given the dosage to kill demodectic or sarcopctic mites. If you do not believe me, instead of listening to “your cousin”, read the scientific paper “Toxicology of Avermectins and Milbemycins (Macrocylic Lactones) and the Role of P-Glycoprotein in Dogs and Cats”. Furthermore, they are all the same: it is plain nonsense to give moxidectin, because ivermectin is tossic to MDR1 dogs…. These molecules belong to the same class. [I am not listing here the products commercial names, as they tend to be changed in different countries, just check your tablets box for the active component].



(Translation: *So… let's me figure this out, you just said vets are ignorant goats and now you call vaccine a macrocyclic lactone? I am a bit partial, you know…*)

Confusion number two surrounds the Guardian SR (Pro-Heart 6) which is given to dog as an injection, once a year. It is moxidectin and it is supposed to stay in the dog's body for at least 6 months, or more, thus protecting the dog during the whole mosquito season. This is a DRUG, not a VACCINE. Vaccines are another thing: you do not vaccinate the dog against heartworm (filariasis or *Dirofilaria immitis*, immitis means cruel in Latin), there are no vaccines against heartworm. What vets often reccomend, is the same drug you can give to your dog in tablets each month. Many people, however, and many

veterinarians, prefer the long lasting formula, because it is more “convenient”.

I personally do not like it, I do not really like the idea of giving to an animal anything that is going to remain in his body for months. Why? It is very simple:

- I do not know how long it will actually last;
- I do not know how and at which speed it will be metabolized;
- I am afraid of adverse effects. Albeit deemed safe, some dogs can experience side effects and, in this case, I will not be able to contrast them, there are no antidotes and these side effects could last for months….

So, what happened with the Australian Shepherd? First of all, as far as I know, he had never been tested for the MDR1 gene so we do not know if he really had a multi drugs resistance. Second, he was given Pro-heart 6, the long lasting moxdectin. I said above that moxidectin tablets are safe for MDR1 dogs. Is it the same for the injection? It should be safe but, for reason number 2 and 3 I would not recommend this product in a breed known for MDR1. Washington State University, on its website, gives this same advice. And neither I would recommend it for a pup/growing dog as you might need to give him a dose for “adult weight” and because younger dogs can be more sensitive to some drugs. When in doubt, err on the safe side!

I hope this can clarify some of the doubts, but please do not go around stating that “vets are ignorant goats” while, at the same time, trying to look smart by defining “vaccine” a macrocyclic lactone.