More Concerning News Regarding Flea and Tick Products for Companion Dogs and Cats

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The US Food and Drug Administration (FDA) issued an alert in 2018 for companion pet parents regarding certain flea and tick products that contain drugs in the isoxazoline class. To this day, however, the FDA still considers these products to be safe and effective for the treatment or prevention of flea and tick infestations, but does caution that they have been associated with neurologic adverse reactions, including muscle tremors, ataxia, and seizures in some dogs and cats with or without a prior adverse reaction history.

The isooxazoline products are Bravecto (fluralaner) tablets for dogs, Bravecto (fluralaner) topical solution for cats and dogs, Bravecto 1-month (fluralaner) tablets for dog, Credelio (lotilaner) tablets for dogs and cats, Nexgard (afoxolaner) tablets for dogs, and Simparica (sarolaner) tablets for dogs. Other products have additional properties to cover heartworm and worms such as Bravecto Plus (fluralaner and moxidectin) topical solution for cats, Simparica Trio (sarolaner, moxidectin and pyrantel) tablets for dogs, and Revolution Plus (selamectin and sarolaner) topical solution for cats.

The Concerning New Information…

Many companion pet parents believe that adverse drug, chemical, or vaccine reactions have a limited time frame concerning when an adverse event could occur. For instance, if your companion dog does not have a reaction within two days of administration, you might assume your dog can tolerate these flea and tick products. This is clearly not always the case.

Research these days has identified the cumulative effect of this class of drugs in the body. In essence, a buildup of the drug in the body's system that can lead to the adverse event.

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Indeed, a 2023 study out of Argentina discovered that the fluralaner accumulates in fat. The researchers noted, "Our results confirm that fluralaner is capable of penetrating, holding, and accumulating in the lipid membrane and provide details on its precise location and orientation. These properties would allow fluralaner to reach high local concentrations in different membranes and organs, which could be dangerous for vertebrate organisms if its handling is not properly controlled."

While these researchers did not perform the test in companion dogs or cats, survey data from the European Medicines Agency (EMA) compiled over the years broaches the matter of accumulation in the body. EMA works similarly to the FDA in that it tracks the number of adverse events related to the isoxazoline class of drugs in dogs and cats. Project Jake conducted and published an independent survey in North America regarding adverse events and compared its data with those of the FDA and the EMA. A follow up publication in 2021 provided an update of these reported findings.

Project Jake noted, "The most serious adverse events as stated in the EMA cumulative reports were observed at 0–24 hr after the first dose, and then again after the second and third doses." The second or third dose would be 1-2 months after the initial dose.

Keep in mind that figure above is an attributable observation or cause and effect, because when they gave the flea and tick product three times, two months later the companion pet had an adverse event. So, we do see a cumulative effect.

One of the data limitations of the Argentinian study is that no one knew the number of treatments a dog had prior to the adverse event over the years. These flea and tick products are often sold in packages of 6 and are prescribed to be given monthly. Some companion pet parents may give them during the warmest six months of the year, others may provide only one or two per year to their companion pet during peak tick season, and others may administer it monthly. The EMA's data again touches upon this potential area of research.

According to Project Jake, EMA recorded the following adverse events based on age of companion dog from January 2013 – September 2017.

Total Dogs with Adverse Events N = 7,074

Dogs That Died (N=1603)

Age	Number	Percent
Less Than or Equal to 1 Year	168	10.48%
1-2.9 Years	111	6.92%
3-4.9 Years	143	8.92%
5-7.9 Years	286	17.84%
Greater Than 8 Years	718	44.79%
Unknown/Not Reported	177	11.04%

Dogs That Experienced Seizures (N=2,140)

Age	Number	Percent
Less Than or Equal to 1 Year	185	8.64%
1-2.9 Years	266	12.43%
3-4.9 Years	355	16.59%
5-7.9 Years	457	21.36%
Greater Than 8 Years	736	34.39%
Unknown/Not Reported	141	6.59%

Looking at the data for dogs over the age of five, one can infer that dogs are experiencing a cumulative effect of the drugs in the body if given over the years. Again, this drug association provides a good foundation for future areas of research.

Our Thoughts

Dr. Dodds does not recommend using any drugs of the isoxazoline class for the prevention or treatment of fleas and ticks. She prefers other and preferably all-natural options.

However, as the companion pet parent, you should make the choice. If you do choose to give these flea and tick products, we suggest not purchasing the flea/worm/tick/heartworm combination. Instead, give the flea/tick product 15 days separate from a monthly heartworm preventive. Additionally, only give during months with a heavy load or when your household may be compromised. For example, a heavy burden of ticks may only occur in your area in May or June, but not the rest of the warm weather months.

Dr. Dodds does still suggest monthly heartworm preventatives if the temperature is above 57 degrees for approximately two weeks and mosquitoes are prevalent. In Northern states, this would typically be between May – November. In Southern states, this would more than likely be year round.

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