Compound could be antidote to snake venom (STAT) 3/11

Initially developed to treat sepsis, the compound varespladib, may be an antidote to snake venom, regardless of the species of snake involved. Varespladib was found to block sPLA2, an enzyme in snake venom that causes tissue destruction, in biochemical models of 28 common venoms. In human studies it was found that if this drug was taken daily it increased the risk of heart attacks, but at doses used to treat snake bites it would likely be safe – the investigator is working towards a human study to prove this. The hope is to develop an in-field, easy to use antidote.

Comment: *Worldwide tens of thousands of people die of snakebites every year, who knows how many animals? Hopefully this antidote will be shown to work for animals as well as people as currently antivenoms are snake specific, require refrigeration and need to be administered by doctors. An easy to use, in-field antidote would be a terrific development. SEM*

Veterinarians test drug that could change cancer treatment for dogs and humans (Herald Sun (Melbourne, Australia) (tiered subscription model)) 3/15

A potentially revolutionary cancer treating drug is being tested on dogs in Australia and early results have been "mind-blowing". The drug suppresses T-regulatory cells - which suppress the natural cancer-fighting mechanism of other cells - leaving the dog's own T-effector cells free to target the cancer. Serial blood samples are taken, mapping the animal's immune system to determine the optimum time to give the drug. The treatment is a low-dose tablet with minimal side effects and a low cost. The investigators hope to be able to make this treatment available within 2 years and hope that it will lead to human trials as well.

Comment: *If the clinical trial results do prove out the initial result, this will prove to be a tremendous leap in canine, and potentially human, cancer treatment. What a great development it would be – a low cost, inexpensive cancer treatment with minimal side effects!! SEM*

E-cigarettes pose nicotine toxicity risk for pets (The Desert Sun (Palm Springs, Calif.) (tiered subscription model)) 4/27

E-cigarettes are now fairly commonplace. While ingesting a regular cigarette (which contains 12 milligrams of nicotine) can cause nicotine poisoning – signs can develop in a few hours - exposure to liquid nicotine – as in e-cigarettes (which contains 0-36 milligrams) and their refill cartridges (which can contain 360 to 2,160 milligrams of nicotine), can be more deadly to your pet due to the rapid absorption through the gums and skin and signs can develop within 15 to 30 minutes. Signs of toxicity include excessive drooling, vomiting, diarrhea, increased respirations, and agitation that can progress to disorientation, tremors, seizures, heart abnormalities, paralysis, coma and death. Prompt emergency care is essential.

Comment: *While smoking isn't good for anyone, nicotine for your pet can truly be deadly. To keep your pets safe, keep all nicotine containing products, especially e-cigarettes and their refills, out of reach of your pets – and children! SEM*

Research uncovers genetic link to obesity in Labradors, flat-coated retrievers (BBC) 5/3 (Gizmodo) 5/3

Cambridge University (U.K.) researchers found a mutation, in Labradors and flat-coated retrievers, that is associated with weight gain in those two breeds, but the findings did not apply to other breeds. The mutation, a deletion in the POMC gene, causes appetite suppressing molecules to be decreased which in turn fails to switch off feelings of hunger. The mutation is found in approximately 25% of dogs in each breed. Assistance dogs – of the breeds – were found to have the gene in 3 out of 4 dogs - possibly due to their food drive making them more trainable. The POMC gene works similarly in humans which may have implications for human health.

Comment: *This is an interesting study but obviously since this mutation was not associated with heavier weights in other breeds other genes or environmental factors – such as an owner who is easy with the treats –will need to be studied. SEM*

Owners' and dogs' heart beat in sync, small study finds (Tech Times) 5/6

In a very small study, dogs and their owners were separated and upon being reunited both dogs' and owners' heart rates dropped and synced rapidly. While a lower heart rate for the owners was expected but the fact that the dogs' heart rates decreased and almost directly with their owners' was surprising. Both dogs and owners experienced reduced stress levels when near each other. The researcher says this effect is not just seen with dogs but with any pet that a person may have a personal connection to.

Comment: *While only three dogs and their owners were studied, the results are very interesting showing that dogs and their owners mutually reduce stress. It's nice to know it is not just a one way street! SEM*

Severe human lung disease found in dogs for the first time (WWJ-TV/WWJ-AM (Detroit)) 5/13

A disease that has only been documented in people has been found in dogs. Pulmonary veno-occlusive disease (POVD) - a rare and severe type of pulmonary hypertension that causes death in humans and can only be treated with a lung transplant - has been documented in dogs by Michigan State University's College of Veterinary Medicine. POVD is caused by abnormal blood vessels in the lungs becoming blocked causing increased blood pressure and ultimately death by heart failure. This discovery could be important in studying the rare and deadly human disease by being able to use a canine dog model for research studies.

Comment: *This finding may help humans but at this time, since lung transplant in dogs are rarely if ever performed, this does not bode well for those dogs affected by POVD. SEM*

Researchers explore genetic drivers of gliomas in dogs and humans (BBC) 5/13

Researchers have identified three genes that may play a role in the development of gliomas, a deadly brain tumor, in dogs. These same gene sequences are found in humans. The

researchers are looking at the function of the genes and how they might contribute to the development of brain tumors in both dogs and humans.

Comment: *Gliomas are incurable brain tumors, finding answers to their cause will help lead to a possible prevention or treatment. SEM*

Longevity drugs shows early promise in dogs (The New York Times (free-article access for SmartBrief readers)) 5/16

Rapamycin, a drug used in human organ transplant patients and to treat some cancers, may improve longevity according to researchers. Possible heart-health benefits were seen when the drug was given to a small group of dogs and no significant side effects were seen noted. The drug appears to bolster the immune system in older patients. A larger study is planned. Outcome of these studies might help in the fight against aging by slowing aging and therefore possibly delay the onset of several major diseases at once.

Comment: *While probably not the Fountain of Youth, this study may have several health implications for our older pets and selves. SEM*

Lyme Disease Cure: New Tests Make It Easier To Detect (CBC News) 5/20

A new urine test for the early diagnosis of Lyme disease in humans has been found to be effective. Some active Lyme cases are missed by traditional testing but this new test is able to pick these up. Detecting a highly specific protein shed from the surface of the Lyme bacterium, the test can not only test for the disease but can also monitor treatment as the test becomes negative with successful treatment. The researchers are looking to apply the same technology to other deadly diseases such as Ebola, malaria and tuberculosis. Another breakthrough on the Lyme frontier is a new over-the-counter tick test, available in Canada, can determine if a tick is carrying Lyme disease. The Care Plus Tick Test gives results in ten minutes.

Comment: *What great new developments in our fight against Lyme disease. It will be interesting to see if the urine test is valid for dogs and if it will be developed for such use – especially for monitoring treatment! SEM*

Zoetis launches gel medication for dogs with noise anxiety (WCVB-TV (Boston), WKOW-TV (Madison, Wis.)) 5/23

Sileo, a prescription medication made by Zoetis, should be available in early June to help treat noise anxiety, such as to thunderstorms and fireworks, in dogs. The prefilled needleless syringes contain a gel medication that is placed between a dog's gum and cheek for quick absorption and must be given thirty to sixty minutes before the noisy event. Effects of the medication last two to three hours and while medicated the dog can still function normally unlike with other sedatives and drugs typically used to treat noise phobias.

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Comment: *This is a nice breakthrough in the treatment of noise phobia versus sedating or tranquilizing them. But just because the dog may be treated with this drug, it does not mean it is okay to bring your dog with you to fireworks or other events with loud noises – leave them home! SEM*