Oral Interferon for FIV

Recombinant feline interferon-omega (rFeIFN-ω), an immune-modulator drug licensed for use in Europe, Australia, and some Asian countries, is frequently used in the management of FIV and FeLV. The compound is thought to act on innate immunity. A recent study demonstrated clinical improvement and reduction of concurrent viral excretion in naturally retrovirus-infected cats in catteries. Some reports suggested that rFeIFN-ω may affect acute-phase proteins (APP) and serum levels of APP may be indirect indicators of innate immune system stimulation. APPs and concurrent viral excretion in naturally infected FIV-positive cats were measured for an oral rFeIFN-ω protocol, in comparison with a licensed SC protocol. FIV-positive cats ($n = 11$) were treated with oral rFeIFN-ω and results were compared with data previously obtained from 7 FIV-positive cats treated with the licensed SC protocol. Results indicated that rFeIFN-ω induced significant clinical improvement of treated FIV-infected cats regardless of route of administration. Overall clinical scores were slightly higher in the oral group as compared with the SC group, but not significantly. While the reason is unclear, it appeared the oral rFeIFN-ω protocol caused significant clinical improvement but did not change concurrent viral excretion and variation of APP. Oral rFeIFN-ω may be an option for treatment of FIV-infected cats as a follow-up after the licensed protocol.

Global Commentary

This European study suggested that oral rFeIFN-ω may be useful in treating FIV-positive cats and would be easier to administer and potentially less expensive than SC injections. Although not licensed for oral use in the U.S., Virbagen Omega (Virbac, UK [virbac.co.uk]) has been investigated in various viral disorders, including gingivostomatitis of cats and canine parvovirus.[1,2] The compound may prove to be invaluable in the improvement of innate immunity in select populations. *—Heather Troyer, DVM, DABVP, CVA*

Source

Oral recombinant feline interferon-omega as an alternative immune modulation therapy in FIV positive cats: Clinical and laboratory evaluation. Gil S, Leal RO, McGahie D, et al. *RES VET SCI* 96:79-85, 2014.

1. **Comparative efficacy of a recombinant feline interferon omega in refractory cases of calicivirus-positive cats with caudal stomatitis: A randomised, multi-centre, controlled, double-blind study in 39 cats.** Hennet PR, Camy GA, McGahie DM, Albouy MV. *J Feline Med Surg* 13:577-587, 2011.
2. **Immunological effects of recombinant feline interferon-omega (KT-80) administration in the dog.** Kuwabara M, Nariai Y, Horiuchi Y, et al. *Microbiol Immunol* 50:637-641, 2006.

Extended Release for Dragons

This study compared the pharmacokinetics of single IM or SC injections of ceftiofur crystalline-free acid (CCFA) in bearded dragons (*Pogona vitticeps*). CCFA is a sustained-release formulation of ceftiofur, a third-generation cephalosporin. Injectable extended-release drugs may be of particular benefit for reptiles, which may be difficult to handle and become stressed with frequent dosing.

A target minimum inhibitory concentration (MIC) of 1 µg/mL was based on studies of ceftiofur in other exotic species. The experiment used 6 adult male bearded dragons, with a randomized, complete crossover design. Each subject received 30 mg/kg of CCFA either SC in the left scapular region or IM in the left biceps brachii muscle. Blood samples were tested at 10 time points up to 288 hours postinjection. After a 28-day washout period, the experiment was repeated with the alternate administration routes.

Both routes resulted in plasma concentrations that were greater than the target MIC within 4 hours and maintained for >288 hours. No adverse effects were observed. The SC route showed less variability in plasma concentrations. This, coupled with greater ease of SC administration, made this route preferred. Further studies on efficacy, repeated dosing regimens, and other reptile species are indicated.

Commentary

Reptile medicine, as compared with its domestic species counterparts, is in its developmental stages. However, the days when enrofloxacin was the standard drug for infections in these species have long passed; many studies have demonstrated that its safety and efficacy are less than ideal in our herpetologic patients. Third-generation cephalosporins are already recognized as an excellent choice to consider once cultures have confirmed sensitivities. Regardless of how safe and effective these antibiotics may be, they require administration by injection, a difficulty for most pet owners. CCFA, a common form that may only require infrequent injections, however, could mitigate this problem.*—Adolf K. Maas, DVM, DABVP (Reptile & Amphibian)*

Source

Pharmacokinetics of subcutaneous versus intramuscular administration of ceftiofur crystalline-free acid to bearded dragons (*Pogona vitticeps*). Churgin SM, Musgrave KE, Cox SK, Sladky KK. *AM J VET RES* 75:453-459, 2014.