Future Combination Antiretroviral Treatment for FIV?

Unlike HIV/AIDS in humans, no specific combination antiretroviral treatment (ART) exists for FIV. Nucleoside reverse transcriptase inhibitors (NRTIs) do inhibit FIV replication, but other drug classes used have not, thus impeding the ability to use combination ART in cats. A promising new drug class, integrase strand transfer inhibitors (INSTIs), has been shown to have potent antiretroviral effects in human clinical trials. A study showing INSTI-binding sites in FIV and HIV-1 to be nearly identical also investigated the ability of INSTIs to inhibit FIV replication. In vitro experiments showed 3 investigational INSTIs designed for HIV-1 to efficiently inhibit FIV replication. These findings may lead to new FIV treatments and could provide a basis for the design of an ART for FIV.

COMMENTARY: For years, veterinary virologists and pathologists have promoted the use of FIV as an appropriate animal model for studying HIV. In this study, cats stand to benefit from the research done over the past 2 decades that has been immensely helpful in humans. Because the binding sites were found to be nearly identical in FIV and HIV, this mode of therapy could, in fact, be transferable to our feline patients. This would be an exciting breakthrough for veterinary medicine. — Margie Scherk, DVM, Diplomate ABVP


Bites, Licks, & Infections

*Pasteurella multocida* is a gram-negative coccobacilli that is a common cause of infection after cat and dog bites. This organism is found in the oropharynx of 70% to 90% of domestic cats and 25% to 50% of dogs. Infection can also be acquired via licks and scratches from dogs and cats. Respiratory infections have been reported in veterinarians, farmers, milkmen, and other people that work in areas where tissues from various animals are handled and processed. Wound infections, infection of the respiratory tract, and serious invasive infection are the 3 major types of infection in humans. The most common is wound infection, which is an important cause of septic arthritis and osteomyelitis, either from direct inoculation into the joint or extension via soft issue infection. Respiratory infections are rare and most common in people with underlying bronchopulmonary disease. The risk for invasive infections is of most concern in young and immunocompromised people. The most common presentation of this disease is a bite wound, which has a very rapid progression of swelling, erythema, tenderness, and pain in the first 12 to 24 hours. Treatment involves local aggressive management of the wound: flushing, debriding, evaluation of nerve function and blood supply, and surgical drainage and debridement. *Pasteurella* species are usually sensitive to penicillin, but β-lactamase—producing strains have recently been identified. Controlling contact with wild and domestic animals is the best way to prevent infections. Children should be taught pet safety and appropriate hygiene at an early age. Parents should be discouraged from allowing pets to lick infants and children.

COMMENTARY: Animal bites are a significant occupational hazard for veterinary staff. The cost of medical treatment and lost manpower can be significant, considering that over 50% of cat bites and up to 25% of dog bites require medical management. *Pasteurella* is the most common cause of infection. All bite wounds should be considered infected and be treated prophylactically with a broad-spectrum antibiotic. Proper restraint, muzzles when necessary, and trained technical staff reduce the chance of human injury as well as liability risks involving owners handling their own pets. — Sandra Sawchuk, DVM, MS