Rabies Boosters

This study compared the anamnestic antibody responses of dogs and cats with current and out-of-date rabies vaccination status to gain insight into rabies post-exposure management for exposed pets with out-of-date rabies vaccination. Study animals (74 dogs, 33 cats) had either been exposed to rabies (suspected or confirmed) and presented for proactive serologic monitoring or had presented for booster rabies vaccination with no exposure. Blood samples were analyzed for anti-rabies antibodies on day 0 (just prior to booster rabies vaccination with no exposure. Blood samples had antibody titers ≥0.5 IU/mL 5–15 days after booster vaccination, indicating anamnestic responses similar for pets with both current or out-of-date rabies vaccination status. Unlike fold rise or absolute increase in titer, absolute titer should provide good indication of protection. The booster response for study dogs with an out-of-date vaccination status was not inferior to that of dogs with current vaccination status. The authors thus suggest that post-exposure management of pets with current and out-of-date rabies vaccination status should be the same regardless of severity of exposure; that is, even pets with out-of-date rabies vaccination status should receive booster vaccination with a 45-day observation period instead of being euthanized or quarantined for 6 months. Titers measured prior to and 5–7 days after the booster can be used to assure that an anamnestic response has occurred.

Global Commentary

Although this study was designed to specifically address a question about rabies control in the United States, the findings have global significance for veterinarians practicing in rabies-endemic countries. Veterinarians often ask why determining a serum rabies antibody titer cannot be used as an indicator of protection in the same way that seropositivity for canine distemper virus, canine adenovirus, or canine parvovirus indicates the presence of protective immunity against those infections. Rabies vaccination leads to seropositivity immediately post-vaccination, but these vaccinal titres may not necessarily be maintained throughout the entire 3-year period of protection. In the early days of European pet travel, when positive post-vaccinal rabies serology was required by some countries for pet movement, many animals failed to meet the requirement (a minimum titre of 0.5 IU/mL) because serological testing was done too long after vaccination. The finding of the present study negates correlation between protection and antibody titre for rabies. More importantly, study results confirm that a single rabies vaccine booster leads to elevation of titre 5–15 days later, irrespective of whether the rabies vaccination status is regarded as current or out-of-date. If these results mean that rabies-exposed animals with out-of-date vaccination in the United States are no longer euthanized or quarantined, there are clear benefits for animal welfare. Additionally, this further demonstration of current international rabies vaccines’ efficacy should provide confidence in these products for veterinarians using them in countries with high canine rabies prevalence.—Michael J. Day, BSc, BVMS(Hons), PhD, DSc, DiplECVP, FASM, FRCPath, FRCVS

Source


Research Note: Ferreting Out Neoplasia

Neoplasia is common in ferrets and dosing of chemotherapeutic agents is often determined on a mg/m² basis, which requires an estimated body surface area (BSA). In ferrets, BSA is usually approximated from a feline formula, BSA = 10 × (body weight [BW] in grams)²/³. This study sought to create a ferret-specific formula for determining BSA using computed tomography (CT) and to validate the CT-derived measurements against a more traditional method of determining BSA. Nineteen anesthetized adult ferrets and 6 adult ferret cadavers were measured by 3 observers who recorded BW, body length, head circumference, and other parameters. CT was performed using a 16-slice helical CT scanner, from which surface area was calculated. BSA was then determined for the 6 cadavers by the traditional tape method as follows. The 6 cadavers were cleanly shaven and covered completely with medical tape. The tape was then cut off with scissors and affixed to paper. The surface area was analyzed using a conventional scanner and commercial software. Nonlinear regression models were used to optimize standard BSA formulas using BW with or without a second body measurement as independent variables. Results showed that CT was an accurate and minimally invasive method of measuring ferret BSA as compared with the traditional tape method. The optimized BSA formula for ferrets was found to be 9.94 × (BW in grams)²/³. The authors concluded that the difference between the feline-derived and ferret-specific formulas is small enough to have minimal practical impact on drug dosages.

Source