CE FOR THE ONE WHO DOESN'T HAVE TIME FOR CE

"Pearls" of Veterinary Medicine

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AT A GLANCE

AnimalBiome recruiting dogs with atopic dermatitis..... 2
BOAS risk factors..... 3
BOAS surgery – avoid cut-and-sew procedure..... 4
Canine parvovirus may result in low-grade GI signs..... 2
GS-441524 for ferret systemic coronaviral disease..... 4
Is annual heartworm testing necessary for all dogs?..... 2
Lomustine and corticosteroids for CNS lymphoma in cats 3
Long-Term Sequelae of Canine Parvoviral Enteritis..... 2
Sedation for procedures in rabbits..... 4
Simple continuous suture for uterine closure in c-secs.... 3
Solensia updated product insert and client handout..... 3
Standard Process GI Soothing for acute gastroenteritis... 3
VacciCheck for canine and feline vaccine titer testing..... 1

Clinical Pathology – Infectious Disease

VacciCheck for canine and feline vaccine titer testing

In-house semi-quantitative serologic assays, such as VacciCheck, enable rapid point-of-care assessment of antibody titers against core viral pathogens: canine parvovirus, distemper, and adenovirus, as well as feline panleukopenia virus. Feline herpesvirus and calicivirus tests are available overseas, but not currently in the US.

Because modified-live core viral vaccines typically induce extended or lifelong immunity, routine revaccination is often unnecessary. In dogs, circulating antibody titers peak soon after vaccination, decline gradually over 6-12 months then tend to remain relatively stable over time. In cats, panleukopenia titers tend to be stable for 7 or more years whereas herpesvirus and calicivirus titers gradually decrease over several years after vaccination, although herpesvirus titers are seldom high.

Using titer tests rather than routinely vaccinating reduces cumulative antigenic exposure and the associated risks of acute hypersensitivity reactions, autoimmune sequelae, vaccine-associated sarcomas, and potentially other neoplastic conditions.

Titer testing may be performed at least 2 weeks after completion of the initial puppy or kitten vaccination series; the speaker tests at about 16 weeks of age and most patients have adequate titers so do not require the 16-week vaccines. Any detectable titer indicates functional immune memory and the ability to respond to a viral challenge, so the booster is not necessary. Negative titers in juveniles necessitate revaccination whereas negative titers in adults warrant consideration of revaccination, individualized according to patient lifestyle and regional epidemiologic risk. **In previously vaccinated adults, immunologic memory is frequently retained and may still confer a rapid anamnestic response upon exposure, even in the absence of detectable circulating antibody**.

VacciCheck generates semi-quantitative colorimetric ranges (negative, borderline, positive, high positive). Results are available in approximately 23 minutes via a 6-step protocol [quick guide]. The test requires a minimal sample volume (10 µL whole blood or 5 µL serum/plasma), is stable at room-temperature for ~ 1 year, is cost-effective (typical cost to client of $30-40), and is easily batch tested for up to 12 samples (Dr. Messonnier performs batch tests weekly and prefers VacciCheck to TiterChek due to lower cost and ease of use since the TiterChek wells are messy and require a positive control for each run).

Sensitivities (sens) and specificities (spec) for VacciCheck (VC) and TiterChek (TC), validated by gold-standard methods (virus neutralization or hemagglutination inhibition) [ref] [ref] [ref]:

Virus	VC Sens	VC Spec	TC Sens	TC Spec
adenovirus	96%	90%	n/a	n/a
distemper	96%	88%	88%	95%
parvo	97%	94%	98%	98%

Feline panleukopenia: sensitivity 89%, specificity 89%

Note that rabies vaccination remains subject to state or local legal requirements. Most U.S. jurisdictions do **not** authorize veterinarians to grant medical exemptions. **Measurement of rabies virus-neutralizing antibody (RVNA) cannot be used as a legal substitute** for vaccination documentation in the United States. [Richard Ford]

VacciCheck canine, list $341.43/12 tests



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