

Emerging Pathogens in Canine Infectious Respiratory Disease Complex

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In the Literature

Mitchell JA, Cardwell JM, Leach H, et al. European surveillance of emerging pathogens associated with canine infectious respiratory disease. *Vet Microbiol.* 2017;212:31-38.

FROM THE PAGE ...

Canine infectious respiratory disease complex (CIRDC), a common cause of illness in dogs, is associated with a number of pathogens. Canine distemper virus, canine parainfluenza virus, canine adenovirus type 2, and *Bordetella bronchiseptica* have traditionally been associated with clinical disease related to CIRDC, but the importance of emerging pathogens is unknown.

This study* of European dogs investigated the prevalence of 4 emerging CIRDC pathogens (ie, canine respiratory coronavirus [CRCoV], canine pneumovirus [CnPnV], *Mycoplasma cynos*, influenza A [H3N8]) and their risk factors for exposure, infection, and clinical disease. Signalment data and samples from nasal swabs, oropharyngeal swabs, and serum were collected from 572 dogs from various sources (eg, shelters, households) and clinical groups (ie, clinically unaffected but exposed to acute CIRDC-affected dogs, acute and convalescent CIRDC-affected dogs).

Most study dogs (66.6%), including both pet and shelter dogs, had clinical CIRDC. Although CIRDC was noted in dogs vaccinated against CIRDC agents (ie, canine distemper virus, canine adenovirus type 2, canine parainfluenza virus), disease occurrence and severity were significantly reduced in these dogs. Overall estimated seroprevalence for CRCoV, CnPnV, and *M cynos* was high (47%, 41.7%, and 45%, respectively). Overall prevalence of CRCoV and CnPnV detected through PCR testing was 7.7% and 23.4%, respectively; presence of these pathogens was positively associated with clinical CIRDC disease

and severity. *M cynos* and influenza A were infrequently detected by PCR (0.9% and 0%, respectively).

Pathogen seroprevalence and detection varied by source and country of origin. Shelter dogs were more likely to be seropositive for *M cynos* and CnPnV than were pet dogs, but prevalence was high for both shelter and pet dogs. Dogs that were seropositive for CnPnV were significantly more likely to be seropositive for CRCoV (and vice versa) and *M cynos*; this suggests frequent coinfection or cocirculation of these pathogens in dogs.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** CIRDC and associated infection from pathogens should be considered in dogs with consistent clinical signs.
- 2** Vaccination against CIRDC agents is important to reduce disease occurrence and severity, although owners should be warned that dogs may still develop (most commonly) mild disease.
- 3** The emerging pathogens CnPnV and CRCoV appear to play important roles in CIRDC in both shelter and pet dogs and should be considered when diagnosing and managing CIRDC. Pathogen testing is offered by some commercial laboratories. Clinicians should be aware of current trends in local CIRDC pathogen prevalence (eg, outbreaks, emergence), as these vary by region and should influence clinical suspicion and response.

*Sample collection and analysis for CRCoV, *M cynos*, and influenza A virus was funded by Zoetis Animal Health.