Canine Infectious Respiratory Disease (Kennel Cough)
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Canine Infectious Respiratory Disease (CIRD), commonly referred to as “kennel cough” or “canine infectious tracheobronchitis”, is the number one infectious respiratory syndrome of dogs. It is a complex syndrome with a multi-factorial etiology (underlying cause) that results in an acute inflammation of the upper airways. This disease is characterized by high morbidity and low mortality, meaning that animals exposed often become sick, but the disease is rarely fatal. The diagnosis, treatment, management, and prevention of CIRD are not often simple and straightforward.

A complex of viruses and bacteria acting synergistically on the respiratory lining typically causes CIRD, however a single agent can also produce this disease in canines. CIRD is often referred to as “Bordetellosis”, due to the fact that the number one bacterial isolate for this disease is *Bordetella bronchiseptica*. It is important not to confuse these terms, as they are not synonymous. Although *Bordetella bronchiseptica* is a common cause of this disease, it is one of a multitude of bacterial and viral causes. This bacteria is found worldwide and targets the upper airways in dogs of all ages. It is considered a significant complicating factor in multiple-agent respiratory infections of dogs due to its ability to attach to and paralyze the cilia of the respiratory tract, making it difficult for the animal to rid itself of the bacteria and mucus. This mechanism enables the bacteria to persist for weeks in the airways and also predisposes the animal to other infectious agents. There are multiple other bacteria involved in CIRD, including mycoplasmas, *Streptococcus equi* subspecies *zooepidemicus*, and *Chlamydia phila*. Viral pathogens, including Canine Adenovirus Type 2, Canine Parainfluenza Virus, Canine Respiratory Coronavirus, Canine Herpesvirus, Canine Distemper Virus, and Canine Influenza Virus, also contribute to and complicate this disease in canine patients. The number one viral isolate in CIRD is Canine Parainfluenza Virus (CPiV), which typically only causes mild disease in the absence of *Bordetella bronchiseptica*. Environmental factors, such as ventilation and close confinement with other dogs, and the strength of an animal’s immune system also play vital roles in the development of CIRD. Unvaccinated puppies or puppies whose vaccination status is incomplete, debilitated adult dogs, and geriatric dogs are often more susceptible to CIRD.

The infectious agents involved in CIRD are highly contagious, and are rapidly spread by aerosolization of respiratory secretions and contact with contaminated objects. These agents survive in the environment only a few hours to a few weeks, and are successfully inactivated by most routinely used disinfectants. Infected animals may be contagious for up to 7-10 days after exposure and must be prevented from contacting unexposed dogs for 2 full weeks post-exposure.

A dog with CIRD typically presents with a dry, hacking cough that often sounds like a “goose-honk” or a “seal bark”. This often worsens with excitement and tracheal agitation, such as a leash pulling on the neck. Coughing may persist, despite therapy, as the airway attempts to rid itself of secretions. A dog may gag and wretch due to persistent mucus in the airway, and this can be mistaken for vomiting. In some cases, dogs may only present with a cough, and no additional symptoms.
However, in cases of complicated CIRD, symptoms may worsen to include fever, lethargy, anorexia, nasal discharge, ocular discharge, and difficulty breathing.

CIRD is typically a mild disease that is self-limiting in nature. Common treatment plans in cases of uncomplicated CIRD involve measures that minimize cough-precipitating situations: rest, avoidance of neck leashes, minimal exercise, and avoidance of excitement. Antibiotic therapy may be necessary if there is evidence of bacterial involvement. Cough suppressants may be prescribed to stop the coughing cycle.

The best protection against CIRD is prevention. There is not a vaccine for each individual agent; however, there are vaccines available for the most common offenders. The severity of the symptoms may be reduced by vaccinating your pet with current canine respiratory vaccines, such as Distemper, Adenovirus Type 2, and Parainfluenza. In some cases, disease can be entirely prevented. The *Bordetella bronchiseptica* vaccination is recommended for dogs that are boarding, travelling, or coming into contact with other dogs.

Although CIRD is the most common infectious respiratory syndrome of dogs, it is often self-limiting, readily treatable, and frequently preventable.

REFERENCES:


