

Canine Coronavirus Infection in Dogs

A canine coronavirus infection (CCV) is a highly contagious intestinal disease that can be found in dogs all around the world. This particular virus is specific to dogs, both wild and domestic. The coronavirus replicates itself inside the small intestine and is limited to the upper two-thirds of the small intestine and local lymph nodes. A CCV infection is generally considered to be a relatively mild disease with sporadic symptoms, or none at all. But if a CCV infection occurs simultaneously with a viral canine parvo virus infection, or an infection caused by other intestinal (enteric) pathogens, the consequences can be much more serious. There have been some deaths reported in vulnerable puppies.

Causes

This intestinal disease is caused by the canine coronavirus, which is closely related to the feline enteric coronavirus (FIP), an intestinal virus that affects cats.

-The most common source of a CCV infection is exposure to feces from an infected dog.

-The viral strands can remain in the body and shed into the feces for up to six months.

-Stress caused by over-intensive training, over-crowding and generally unsanitary conditions increase a dog's susceptibility to a CCV infection. Additionally, places and events where dogs gather are the most likely locations for the virus to spread.

Pathogenesis :

Pathogenesis Virus infect the cells covering the upper two-thirds of the small intestinal villi. The infection is confined to the intestines and damage is limited further to mature cells – the intestine's ability to produce new, healthy cells remains uncompromised. The infected villi become damaged and blunted to such an extent that the small intestine can no longer effectively absorb nutrients. Healing of intestinal inflammation is generally complete within 1 week, so that the overall disease is normally quite mild. Despite its mildness when contracted alone, it is important to note that, infections along with CPV can result in illness that is far more severe than either CCV or CPV alone. Mortality rates in puppies simultaneously infected may approach 90 percent.

Symptoms and Types

The symptoms of a CCV infection vary.

-In adult dogs, the majority of infections will be inapparent, with no symptoms to show. Sometimes, a single instance of vomiting and a few days of explosive diarrhea (liquid, yellow-green or orange) may occur.

- Fever is typically very rare, while anorexia and depression are more common.
- Occasionally, an infected dog may also experience some mild respiratory problems.
- Puppies may exhibit protracted diarrhea and dehydration and are most at risk of developing serious complications with this virus.
- Severe enteritis (inflammation of the small intestine) in puppies will occasionally result in death.

Diagnosis

A CCV infection will usually have some symptoms in common with other bacterial, viral, or protozoic infections, or with general food intoxication or intolerance. Therefore, certain tests may have to be administered to determine the actual cause of the infection.

-Biochemical analysis and urinalysis will typically show normal physiology, so sometimes specific serologic tests or antibody titers (measurement of antibody strength) may need to be used

Treatment

Puppies that have been exposed to this infection and are showing symptoms will need the most guarded care.

- a small amount of diarrhea and vomiting can lead to a fatal condition for a puppy.
- Most adult dogs will recover from a CCV infection on their own and without the need for medication.
- In some cases, diarrhea may continue for up to 12 days, and soft stool for a few weeks. If the infection does cause inflammation of the small intestine (enteritis), respiratory problems, or blood poisoning (septicemia), antibiotics may need to be prescribed.
- If severe diarrhea and dehydration occur as a result of the infection, the dog may need to be given extra fluid and electrolyte treatment.
- Once the dog has recovered from the infection, there will usually be no need for further monitoring. But, keep in mind that there may still be remnants of the virus that are being shed in dog's feces, potentially placing other dogs at risk.

Prevention

There is a vaccine available to protect dogs from this virus. It is normally reserved for show dogs and puppies, since they have undeveloped immune systems and are most vulnerable.

- Because the canine coronavirus is a highly contagious infection, the best prevention for it is to immediately isolate dogs that either exhibit the common symptoms or have been diagnosed with it.

- It is also important to keep kennels clean and hygienic at all times, to clean after dog in both public and private spaces, and to protect dog from coming into contact with other dog's feces, as much as that is possible