

Common Viruses in the Neonate Canine

There are numerous varieties and strains of viruses in the canine, just as there are for people. This is because a virus mutates easily, what does this mean? It means that each generation of cell division can be slightly different than the generation before, and because of how fast the division happens, as quickly as a new generation every 20 minutes! The faster a virus duplicates the more contagious it is considered and it is given a higher epidemic possibility rating. With this fast division it does not take long for the generations to fully distinguish themselves into a virus that the body no longer recognizes and antibodies no longer work for. When this happens it is considered a new strain and infection can happen again.

For the most part viruses are not inter-species compatible and are instead species specific. This means that a virus that effects a canine will not usually be able to infect a equine or a human. There are a few viruses that have, however, crossed the species boundary, and it is these that a lot of attention and research are put into because when you have a virus capable of crossing one species boundary that means that it has a higher probability of jumping to humans and if a highly contagious, and volatile virus ever jumped to humans it could be devastating before a vaccine was developed so Scientist focus a lot of their attention on these viruses.

The Canine Coronavirus is a relative new virus to canines and one strain is said to have come from Bovine, while the other pigs, its rate of division is very high so this virus has mutated often and occasionally jumped species and now has a strain that effects most animals. Each strain is, however, different enough that a bovine coronavirus will not effect a canine and visa versa, without another mutation anyways. It is considered a lesser virus and early causes death in healthy individuals and adults often express no symptoms. When death happens often another virus or bacteria is found which has allowed the coronavirus a weaker immune system.

The Canine minute virus, also know as Parvo type 1 or CMV is not as nice and it is capable of transplacental transmission to the fetus and is responsible for fetal resorption when it has been transmitted late in gestation, resulting in weak or dead pups. It said to be found in serologic prevalence in the US at 50% of all adult dogs, but in the adult dog symptoms may be as mild as a brief cough, or diahreach that could be confused with a bordetello infection. In puppies it may cause enteritis, pneumonitis, myocarditis, lymphadenitis, and may show diarrhea, vomiting, and dyspnea and have a continual cry. But unlike Parvo, which is its descendant, puppies have a much greater chance of survival.

Parvo, however, is a more verdant and destructive strain of the Minute virus. And has a 80% kill rate in unprotected pups and a 50% kill rate in antibody protected pups, but puppies that have immunities and are given ample round the clock fluids have a 90% survival rate. As death from the intestinal form of Parvo comes from dehydration from the constant vomiting and diaherah and treatment with intervienious fluids and stomach relaxers. The gestational form of Parvo, meaning that the puppies contract the virus in the last few days of gestation with tranplacental transmission or during birth, it effects the heart, and has a 90% kill rate, with surviving pups having possible heart, brain and kidney damage. Parvo is especially dangerous because it can survive long periods of time in the environment without damage. Up to and over 1 year and potentially over 6 years in the soil, or other protected place. Parvo is the most recognized of canine viruses because of constant outbreaks due to its ability to exist so long in the environment.

All of these viruses and all of the most common viruses can normally be prevented with puppy shots and up-dates that provide an immunity to the puppies past when the mothers immunities have worn off. Antibodies wear off in puppies between 6-16 weeks of age, and so long as puppies have received plenty of colostrum from their mom at birth, and so long as the mom has either received a shot or been exposed to the virus in the environment she will have antibodies that will protect the puppies at least till 6-16 weeks, during the 6-16 week period the puppies should receive a series of shots to ensure the shot is given after the moms antibodies have wore off, but before environmental exposure of the virus.

References

Canine Parvovirus Infections and Other Viral Enteritides

Jane E. Sykes, in [Canine and Feline Infectious Diseases](#), 2014

<https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/canine-minute-virus>

Canine Coronavirus Infection in Dogs

<https://wagwalking.com/condition/canine-coronavirus-infection>

Respiratory Viruses

H.F. Boncristiani, ... E. Arruda, in [Encyclopedia of Microbiology \(Third Edition\)](#), 2009

<https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/canine-minute-virus>

DNA-Containing Viruses

JAMES H. STRAUSS, ELLEN G. STRAUSS, in [Viruses and Human Disease \(Second Edition\)](#), 2008

<https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/canine-minute-virus>

Veterinary Vaccines and Diagnostics

M.J.G. Appel, in [Advances in Veterinary Medicine](#), 1999

IV.

Canine Parvovirus

<https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/canine-minute-virus>

Viral Infections

James F. Evermann, Melissa A. Kennedy, in [Small Animal Pediatrics](#), 2011

<https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/canine-minute-virus>

Infectious causes of abortion

Donald H. Schlafer, Robert A. Foster, in [Jubb, Kennedy & Palmer's Pathology of Domestic Animals: Volume 3 \(Sixth Edition\)](#), 2016

<https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/canine-minute-virus>