

CANINE HERPES VIRUS IN LITTERS

Canine Herpes Virus also known as CHV

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WHY ARE MY PUPPIES DYING?

You have lost (1) or more newborn to 3 week old puppies and you think you might have the canine herpes virus. Compare the physical symptoms & perform the diagnostic procedure recommended to confirm your puppies have the Canine Herpes Virus. Don't delay treatment because the virus advances quickly and the mortality rate is high.

PHYSICAL SYMPTOMS OF CANINE HERPES VIRUS IN PUPPIES:

- Yellow green stool becomes present (caused by a compromised liver).
- weakness, lethargy, crying, lack of suckle reflex & appetite
- painful abdomen, bruising of the abdomen
- respiratory difficulty, nasal discharge
- hemorrhages such as nose bleeds and small bruises
- older puppies may develop nervous system abnormalities, including blindness and seizures.

The first puppy's symptoms usually resembles fading puppy syndrome and all the puppies look normal just prior to onset. Many vets have diagnosed CHV as fading puppy syndrome. The symptoms of CHV can be similar to fading puppy once the puppy stops nursing.

Here is one breeder's scenario:

The first pup was five days old; I thought the mother laid on the puppy because it became sick during the night. It happened so quickly that I didn't know it was sick. After the second puppy became sick is when I knew.....

At the vet two pups looked fine and healthy. They were gone by the next evening.

STEP 1: HOW TO DIAGNOSE HERPES IMMEDIATELY

- 1) Don't send the deceased puppy away for a necropsy at Laboratory or University as that takes too long usually 4-7 days and by then you will have lost more puppies.
- 2) Ask your General Practitioner Vet to Open the deceased puppy and look for the appearance of red blotches (pin head in size) on the kidneys, liver or lungs (perform an informal necropsy). This method is 99% reliable as a herpes diagnosis.
- 3) Ideally you want to diagnose herpes in the first puppy that dies so you can start treating the others immediately.

Note: Because herpes in litters isn't that common, veterinarians don't have a lot of experience in diagnosing or treating it. Very often herpes goes misdiagnosed because it resembles fading puppy syndrome.

Additional diagnostic methods. (With each of these you can expect lengthy delays).

- 1) Tissue samples of the deceased puppy can be sent to the laboratory 4-7 days.
- 2) Blood samples of the bitch can be sent to the laboratory 4-7 days.

STEP 2: TREATMENT & SUPPORTIVE CARE

- Recommended medication, Acyclovir liquid (10mg per pound 3x daily) and Clavamox Drops (as prescribed on box).

Acyclovir is a human drug for herpes and can be found at most pharmacies; it's inexpensive and your vet can prescribe it. Acyclovir has been found to be a very safe drug for humans but although it has been used extensively on puppies, it has not been formally approved for use on canines by the FDA. Vets have extrapolated the human treatment and research and applied it to dogs. The dosage for puppies has been formulated from human pediatric recommended dosages.

- Give medication to all puppies, even the ones with no signs of sickness. This is imperative because when you see signs of sickness (breathing issues) the virus is already advanced and your chance of saving a puppy at this point is 50%.
- Medicate with the above until the pups are 3 over weeks old (when their temperature rises above 100 degree's and the virus can no long survive.)

"Yes" give Antibiotic's

- There is no bacterial infection initially when fighting this condition so antibiotics are not needed. BUT antibiotics are given because puppies can develop some secondary issues after several days, while fighting the virus. As a precaution antibiotics are recommended and administered immediately so they have a chance to become effective. Clavamox is the recommended drug because of its broad spectrum advantages.

Supportive Care:

- Temperature of the whelping box should be between 75-80 degrees and no warmer.
- I CANNOT EMPHASIZE ENOUGH "DO NOT OVERHEAT OR BAKE THE PUPPIES BY TURNING THE HEAT UP 80 TO 100 DEGREES to kill the virus". The Acyclovir will fight the virus. According to Dr. Bell the extreme heat is very hard on the puppy and leads to dehydration and exhaustion. Sub Q liquids and tube feeding will be required if the pup is not eating.

Possible Additional Drug Options:

Since Acyclovir was created a newer drug called Famcyclovir has been developed. Both drugs are in the same family and claim to do the same thing. It is not known if Famcyclovir is a better drug than Acyclovir for treating canine herpes because it has not been used extensively at this point.

COMMON QUESTIONS:

What are the symptoms of Canine Herpes Virus in Adults?

- Kennel Cough like symptoms
- Occasionally raised genital sores.
- Runny nose and eyes.
- Abortion
- Still birth
- Often there are NO symptoms

How Did My Bitch & Puppies Contract Herpes?

** See Exposure And Susceptibility Timeline at the end of this document. Page 5

- CHV lives in the reproductive and respiratory tracts of male and female dogs. In adults, the disease is transmitted via aerosol and direct contact, including sneezing, coughing, nosing, sniffing, licking and sexual activities between and infected and uninfected dog.
- Approximately one out of two or one out of three dogs have been exposed and carry this virus in their bodies; it's nearly impossible to avoid exposure.
- Puppies usually contract the disease in the birth canal or from nasal and oral secretions of the mother shortly after birth.
- If your litter is affected, then you know that your bitch had no immunity to herpes and was exposed either 3 weeks before or up to 3 weeks after delivery.

How Do I Prevent This From Happening Again?

Building immunity in your dog to canine herpes is the best way to combat it.

- Expose your dog to others that have been affected so your dog can get the virus and build and immunity (though, obviously not when they are about to be bred).

How Do I Know If My Bitch Has Immunity To The Virus Before I Breed Her Again?

- DO A TITER TEST through your GP vet where blood is taken and sent off to a laboratory for antibody testing. A titer test will evaluate within a range the amount of herpes virus antibodies your bitch carries. This is the only definitive way you will know if your bitch has the necessary herpes virus antibodies to pass on to her puppies during gestation and make them immune to the virus if they come in contact with it.
- Note the Herpes Titer test will come back with an antibody number. Ideally your bitch should be within the "normal" range listed on the test.
- If a bitch's titer comes back with 0 antibodies you will want to be very careful about exposing her to other dogs (including taking her to dog shows and even vet clinics, etc.) where she could come in contact with the virus, while she is pregnant.

How antibodies work (in very basic terms)

When vaccinated, a dog's body develops antibodies to fight the virus it was vaccinated for. Depending on a dog's individual immune system, antibodies can deplete over time. Vaccines must be repeated every so often so the antibodies remain in your dog. It is the same with herpes. Exposure to the virus builds immunity in an adult, but immunity can be depleted. Therefore, exposure to the virus every couple of years is required to maintain antibodies.

What are my chances of saving my puppies?

It depends on how quickly you diagnose and treat your puppies. ** See Exposure And Susceptibility Timeline. Page 5

Note: when puppies have the herpes virus in utero they are born sick making it more difficult for them to recover with medication. The mortality rate is also high because the virus is fast moving and the diagnosis and treatment is usually slow. Symptoms are not obvious at first. The virus attacks the kidneys, followed by the liver and the lungs. The circulatory system becomes backed up. When you see visual signs of respiratory trouble the virus is advanced. Those puppies have a 50% chance of survival.

My dog had herpes. How do I know when it's safe for the dog to be on my property again?

When does the virus die off? If you have one dog affected by the virus, it would usually run its course in roughly 30 days. It becomes complicated in multiple dog kennels because once the affected mother has run the course for the herpes virus another dog most likely has caught it, thus extending the active virus period on your property.

You have had herpes in a litter at your home. You are worried about having another litter. It is recommended that kennels with multiple dogs expose all dogs to the affected dog (but not to a another pregnant dog) so the virus can run its course and antibodies are developed.

FACTS ABOUT CHV

- A CHV vaccine exists in Europe, but is not yet licensed for use in the United States.
- Humans are not at risk for catching canine herpes virus.
- The herpes virus will not survive in dog/puppy whose body temp "naturally" regulates itself above 100 degrees.
- A dog's temperature usually rises naturally and regulates itself above 100 degrees at 3 weeks of age. This is why treatment is usually not needed in puppies over 3 weeks of age.
- Once exposed a dog (or puppy) who can maintain a body temperature of 100 degrees will be able to fight the virus naturally through their immune system and will build antibodies to fight the virus.
- Any dog who has contracted herpes virus and built immunity in their system prior to pregnancy can go on to have a normal healthy litter and will pass the immunity on to their puppies.
- Can I give Acyclovir liquid to a bitch who is pregnant and I think has herpes to help her puppies? Yes you can but it won't do any good. The liquid does not pass through the membrane to the puppies.
- Can I give Acyclovir to a newborn that might not actually have herpes? Yes, it is known to be safe in humans and to this point we haven't seen any side effects or overdoses in dogs. This information has been extrapolated by veterinarians from human testing.

Various Antibody Levels Possible Pre-Breeding	Pregnancy	3 Weeks Before Whelping	1 to 3 Weeks After Whelping
IDEAL: Bitch has herpes antibodies prior to breeding (can be confirmed with titer test)	* Bitch is exposed to herpes during this period & puppies will be immune to virus (bitch passes virus antibodies to puppies)		Healthy normal litter, unaffected.
Bitch with NO Antibodies to Herpes (can be confirmed with titer test)	* Bitch Is exposed to herpes virus very early in pregnancy. Bitch fights virus, builds immunity the turnaround time is quick & bitch is able to pass immunity onto puppies	Bitch passes immunity onto puppies prior to whelping.	Healthy normal litter, unaffected.
Bitch with NO Antibodies to Herpes (can be confirmed with titer test)	Bitch is exposed to herpes virus Bitch is unable to fight virus and build immunity in time to give to her puppies	Bitch still fighting virus Bitch has no immunity for puppies. Puppies become affected in utero	Puppies affected with Herpes Various indicators that the herpes virus is present: puppies are resorbed puppies born are stillborn puppies are sick in utero and born with the virus Treat sick puppies see page 2
Bitch with NO Antibodies to Herpes (can be confirmed with titer test)		Bitch Exposed to herpes virus - at show/another dog/vets office - at this point the bitch is fighting the virus but the puppies are usually not affected yet	Puppies born normal become affected from contact with mother (c-section or regular birth, the chances of exposure & susceptibility are very high) Treat sick puppies see page 2
Bitch with NO Antibodies to Herpes (can be confirmed with titer test)	Not exposed to herpes virus at this time.	Not exposed to herpes virus at this time.	Normal Puppies and mother at birth. Bitch is exposed to herpes virus 1-3 weeks post delivery Bitch passes virus to puppies Treat sick puppies see page 2
Bitch who's immunity has dwindled as a result of not being re-exposed to the virus. (can be confirmed with titer test)	same outcome as a bitch with no antibodies	same outcome as a bitch with no antibodies	same outcome as a bitch with no antibodies Treat sick puppies see page 2

This article will be updated as new information comes forward.

Last Edit August 29, 2014

The CHV virus in newborn puppies is not frequent enough to warrant funding for research. This document has been created in an effort to save litters.

The information in this article is compiled from the personal experience and successful treatment of CHV Canine Herpes Virus by several Labrador breeders. Please consult your own veterinarian for treatment.
