

Ancient Practice Shows Promise for Treating Deadly Virus

Parvovirus is a deadly, infectious and difficult-to-treat disease that attacks the GI tract of puppies and dogs. Death can occur within 48 to 72 hours, so prompt veterinary attention is key even though no antiviral therapy for parvo exists. This ancient practice may now be used to help dogs survive.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- A recent news item from Tyler, TX told the story of 11 shelter puppies with parvovirus, nine of whom thankfully survived
- As most dog lovers know, parvo is a deadly infection that attacks the GI tract of puppies and dogs; historically, treatment for the virus has been purely supportive
- A study of fecal microbiota transplantation (FMT) to treat parvo in puppies concluded the procedure significantly reduced mortality rates and recovery time; the study also showed that FMT is a safe procedure with no adverse effects
- Despite its effectiveness, safety, and low cost, FMT isn't yet a widely used veterinary procedure to treat parvo or other GI-related conditions
- FMT has been used by indigenous cultures around the world for centuries as a means of controlling potentially life-threatening gastrointestinal infections

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Not long ago, the Nicholas Pet Haven shelter in Tyler, TX had to close its doors for two weeks due to a parvo outbreak affecting 11 puppies. The pups were taken next door to the Spence and White Veterinary Hospital, a critical care facility, where they were isolated and received treatment.

Veterinarian Dr. Gary Spence, owner of the hospital, had never seen an outbreak like it in his six years of operation. In an interview with local news station KLTV, Spence explained the deadly activity of the virus once it enters the gastrointestinal (GI) tract:

"You've got your intestinal wall, but then you've got thousands and thousands of villi that line your intestinal wall where all your absorption takes place. And as the parvovirus replicates, the tips of the villi rupture, and each of those tips has a vessel in it that sits there and just spurts blood and they bleed to death."¹

Sadly, two of the pups didn't make it, but the other nine were showing great improvement at the time the story made the news. According to Spence, "... it looks like we've turned the corner. The puppies that we've got now are all starting to eat again." Here's hoping the remaining pups continued to improve and were adopted into loving homes.

Why Parvo Is Such a Frightening Disease

For all of us who love dogs, the fear of parvovirus is real, because it's a deadly, difficult to treat, and highly contagious disease. Canine parvovirus type 2, or CPV-2, is an infection that attacks the GI tract of both domesticated and wild puppies and adult dogs.

The virus damages intestinal crypt cells, which results in increased gut permeability and profuse, bloody diarrhea. And in addition to the GI effects of parvo, in very young and unborn puppies, the virus can damage the heart muscle as well.

Parvo is passed by direct dog-to-dog contact and contact with infected feces, environments, and people. The virus can contaminate everything a dog comes in contact with, such as food and water bowls, collars, and leashes — even the humans who handle the dog and their clothing.

Parvo is very resilient and can survive extremes in temperature and humidity levels. It lives in the environment for long periods of time. Even tiny amounts of parvo-infected stool can contaminate an area and transmit the disease to other dogs entering the area. Parvo can be easily spread from one location to another on a dog's hair or feet, on a contaminated pet carrier and on shoes and other objects.

Symptoms and Conventional Treatment Options

Parvo causes similar symptoms in all infected puppies and dogs, including:

- Vomiting
- Severe and often bloody diarrhea
- Lethargy
- Fever
- Loss of appetite

In dogs infected with the virus, dehydration is a constant concern and can occur very quickly as a result of the vomiting and diarrhea. This is especially dangerous in very young puppies.

Most deaths from parvo occur within 48 to 72 hours after the onset of symptoms, which is why it's critical that you take your dog to a veterinarian or emergency animal hospital immediately if he shows any signs of the infection. And since the disease is so contagious, affected dogs must be isolated to minimize spread of infection.

There is no specific anti-viral therapy for parvo. Treatment of an infected dog is typically supportive in nature, including replacing fluids and electrolytes, controlling vomiting and diarrhea, and preventing secondary infections. The goal is to successfully support the dog's organs and body systems until the immune response can conquer the infection.

Microbiome Restorative Therapy

Fortunately, a procedure known as a fecal transplant, also called microbiome restorative therapy or fecal microbiota transplantation (FMT), is gaining traction as a way to help dogs survive parvo. I've personally used FMT for many patients dealing with severe GI infections and chronic conditions over the last several years, with incredible success.

You can learn about one of my parvo puppy FMT patients here: Felix's story.

FMT is an ancient practice many cultures around the world have used to effectively treat outbreaks of potentially life-threatening GI infections. Simply stated, it replaces unhealthy or infected microbiomes in diseased humans with healthy ones. The procedure is also being used in top human hospitals around the world to help people recover from C. Diff infections and other potentially devastating intestinal disorders, with impressive success.²

Study: FMT Saves Puppies With Parvo

Researchers at two veterinary teaching hospitals in Brazil conducted a year-long study to evaluate the safety and effectiveness of FMT in a group of 66 puppies diagnosed with parvovirus.³ The pups were under one year of age and suffering from acute hemorrhagic diarrhea syndrome (profuse bloody diarrhea).

Upon admittance to the hospital, the researchers performed bloodwork, fecal exams, and parvo testing on all the puppies, and each pup received a physical exam daily while hospitalized. Half the patients received standard supportive treatment for parvo, including intravenous (IV) fluids, antimicrobials, and anti-nausea and gastric protectant medications. The other 33 puppies received the standard supportive treatment protocol plus FMT.

The feces donor was a healthy adult American pit bull terrier whose poop was collected daily for 2 weeks and frozen. The transplantation dose for each pup was 10 grams of feces blended with 10 milliliters of dilute saline. The doses were given in the rectum using a syringe and catheter, and the pups had to remain lying on their left side with their pelvis elevated for 2 minutes following administration.

The puppies who received FMT weren't restrained, sedated, or anesthetized for the procedure, which was performed six to 12 hours after hospital admission, and then every 48 hours until the diarrhea resolved, or they had undergone five transplantations. The study results were extremely encouraging:

- Puppies who received FMT had a lower death rate (21.2% vs. 36.5% in the group that received only standard supportive care)
- Diarrhea resolved within 48 hours in 61.5% of puppies who received FMT vs. only 4.8% of pups who received the standard treatment
- Average hospitalization time was much shorter for puppies who received FMT (3.3 days vs. 6 days)

The study authors concluded that FMT is a safe procedure with no adverse effects, and that it decreases the mortality rate and recovery time in puppies with parvo.

If, God forbid, your puppy or dog develops parvo, I encourage you to ask your veterinarian about fecal transplants. You might also try contacting an integrative or holistic veterinarian in your area.

FMT isn't a widely used treatment yet, though it's proving effective for a wide range of GI and other health issues in pets, and there isn't much research for vets to refer to, but fortunately there are a few practitioners out there blazing a trail for other veterinarians interested in giving this natural, common sense, nearly free therapy the attention it deserves.

Protecting Your Dog From Parvo Through Vaccination

Since many puppies and dogs who develop parvo don't survive the infection, it's important to do everything possible to prevent it. This disease is nothing to fool around with. It's very much alive and thriving in our environment, and it frequently ends the lives of dogs who become infected.

Over-vaccination is an ongoing problem in the veterinary community, but in my professional opinion, providing baseline protection (usually two well-timed puppy vaccines) against parvo provides your dog with lifetime immunity — and provides you with peace of mind. I have seen far too many puppies acquire parvo unnecessarily in my career to not recommend this basic, highly effective strategy against a potentially fatal virus.

The protocol I follow in vaccinating puppies against parvo (the vaccine protects against all strains) is a parvo/distemper shot before 12 weeks of age (ideally at nine weeks), and a booster between 15 and 16 weeks.

Two weeks after the second round, I perform a vaccine antibody titer test to ensure the dog has been immunized and not just vaccinated. This is a core vaccine protocol that provides the basic minimum number of vaccines to protect against life-threatening illnesses, without over vaccinating.

Since the job of vaccines is to stimulate antibody production, if a puppy is exposed to parvo (or another virus for which he's been vaccinated), he has some level of circulating protection. Vaccines stimulate antibody production, but it takes 10 to 14 days after the vaccination for adequate protection to occur.

A small percentage of dogs known as "non-responders" will not develop immunity and will remain susceptible to parvo for a lifetime. This is very important information for pet parents to have, which is another reason I titer after the second round of shots — I want to ensure the animal is protected, or if not, that the owners are informed their pet is a non-responder.

In addition, some puppies retain a level of immunity from their mother's milk that interferes with the effectiveness of vaccines. Titering gives us the information we need to be confident the pup has been immunized effectively, or if he hasn't, to determine why, and what further action should be taken.

Recently, a "mystery virus" killing dozens of dogs in Michigan has been identified as parvo, and a lack of protective immunity from dogs that were not adequately immunized is thought to be the cause, further highlighting the importance of performing antibody titers.

Sources and References

¹ [KLTV Channel 7, July 22, 2022](#)

² [Time, November 28, 2017](#)

³ [Journal of Internal Veterinary Medicine, February 20, 2018](#)
