Urgent Infection Alert for Pet Owners

Serious illness and even death can come on faster than you ever thought possible, from a source you may completely trust. Happens every day. Be sure to insist your vet to get these two mission-critical pieces of information before handing out any remedies.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- Over the last decade, antibiotic-resistant infections have decreased in humans, but have increased at an alarming rate in companion animals
- A primary contributor to the increasing problem in pets is continued over-prescribing and indiscriminate use of antibiotics in veterinary clinics
- Treatment of antibiotic-resistant bacterial infections often necessitates the use of very powerful drugs that can cause liver and kidney damage
- As your pet's advocate, you need to insist that your veterinarian perform culture and sensitivity testing to determine what type of suspected bacteria has infected your pet, and the best drug to treat it
- Many integrative veterinarians have experience treating bacterial and other types of skin infections without antibiotics, using natural agents to reduce bacterial growth

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Unless you've been living on the moon, you've heard of MRSA — methicillin-resistant staphylococcus aureus. Staphylococcus aureus is a strain of bacteria naturally found in most animals, including humans. In your dog or cat, staph is naturally occurring bacteria on the skin, in mucous membranes, and in the gastrointestinal (GI) tract.

Occasionally, pets become infected by their own flora. These are typically relatively mild infections that are easily treated. But when a pet's normal flora develops resistance to antibiotics, things can get very dicey. When bacteria mutate and become resistant to even very powerful antibiotics, including methicillin, it can cause serious illness and even death in pets.

Over the last decade, the incidence of methicillin-resistant bacterial infections in people has decreased thanks to more responsible use of antibiotics in human medicine. One major contributor to the decrease is that fewer doctors are prescribing antibiotics for viral infections, which don't respond to them.

Currently, about a quarter of Staphylococcus aureus infections in humans are methicillin-resistant. This is a decrease of about 50% in recent years, but still affects more than 80,000 people per year.[1]

Antibiotic-Resistant Infections in Pets Are Increasing at an Alarming Rate

So the good news is cases of MRSA in the human population in the U.S. are down. The bad news? Nationally, rates of antibiotic-resistant infections in companion animals are rising at an alarming rate.[2] Almost every day, Dr. Jason Pieper, a veterinary dermatologist and veterinary clinical medicine professor at the University of Illinois College of Veterinary Medicine, sees antibiotic-resistant bacterial infections in cats, dogs and other pets.

One bacterial strain he's seeing a lot of is methicillin-resistant staphylococcus pseudintermedius (MSRP), which is found on the skin of dogs and cats. (S. aureus tends to live on humans and infect humans, while S. pseudintermedius tends to live on and infect dogs and cats.)

He's also seeing pseudomonas ear infections, as well as antibiotic-resistant strains of E. coli, enterococcus species and salmonella in pets' GI and urinary tracts. Sometimes these bacteria cause infections; in other cases, they don't.

According to Pieper, since 1999 when methicillin-resistant staphylococcus was first identified, it has increased in significance across the globe, with a reported prevalence in animals of up to 48% in China, 40% in North America, 20% in Europe and 12% in Australia.

Veterinarians Continue to Over-Prescribe Antibiotics

Pieper was asked by the Life Sciences Editor of the University of Illinois News Bureau what he thinks is contributing to the problem of antibiotic-resistant infections in pets.

> *"I think a big problem is people giving antibiotics to animals when it's not indicated, when it's not necessary," he replied. "If your patient is going into surgery and there's a huge risk, then it's prudent to give antibiotics. But in other circumstances, it's better not to."*

> *Pieper explains that unless there's already a diagnosed infection, he never starts antibiotics at the same time he takes a skin biopsy. "I have yet to have a biopsy site come back infected," he says. "I think a lot of people who take biopsies always give antibiotics, no matter what. Those practices need to change, to decrease the chance of resistance."*

Research shows that giving animals antibiotics for only a week or two can produce antibiotic resistance, and most antibiotic prescriptions for dogs and cats are for a minimum of 21 days.

> *"The other issue is that veterinarians are giving their patients more powerful antibiotics than are appropriate," Pieper continues. "Some of the more potent or broader-spectrum antibiotics induce mutations in the bacteria that spur resistance and cause more problems."*

There Are Significant Risks Involved in Treating Antibiotic-Resistant Infections

Pieper sometimes treats antibiotic-resistant infections in pets with what he calls "big gun" (highly potent) antibiotics that have the potential to damage the kidneys and liver. He cites an example of a patient undergoing treatment for liver problems created by a powerful antibiotic that was necessary because the dog's infection wasn't responsive to other treatments, including antibiotics.

Before administering the antibiotic that damaged the dog's liver, Pieper did his due diligence by performing a culture and sensitivity test to determine which antibiotic would be most effective.

> *"A different approach," explains Pieper, "is to use extremely aggressive topical antiseptics that are applied during bathing or as sprays, mousses or creams. These have to be applied to the affected areas up to two or three times a day, and sometimes help clear up infections without having to resort to using antibiotics."*

The Importance of Culture and Sensitivity Testing

Pieper believes the veterinary community needs to take a lesson from human medicine and start practicing responsible use of antibiotics. Skin inflammation in pets should be tested first to determine whether antibiotics are needed.

> *"I see way too many cases where such tests are not performed and the doctors give out antibiotics no matter what," says Pieper. "This is perpetuating the problem."*

As a pet parent and your animal companion's primary advocate, you also need to get involved. Insist that your veterinarian confirm the presence of a bacterial infection with culture and sensitivity testing before accepting a prescription for antibiotics. A culture and sensitivity test gives your vet two very important pieces of information: It identifies the precise organism causing the infection, and also the drug most likely to kill it.

A culture is simply a sample taken from the infected area. It can be a bit of urine, feces, infected tissue or earwax. The sample is incubated and regularly checked for organism growth. As colonies of organisms form, each is tested to identify the type of bacteria, fungi or yeast.

The sensitivity portion of the test involves placing minute amounts of different antibiotics on the organisms to see which drugs the bacteria are most sensitive (responsive) to. Treatment decisions need to also involve selecting an antibiotic that can be administered (by injection, orally or topically) for optimum result in the specific area of the body where the infection is located.

A culture and sensitivity test takes a few extra days, so it's important to understand and accept that you'll be leaving the veterinary clinic without a definitive diagnosis or a prescription. But the additional time it takes to identify the bacteria and the drug it best responds to will allow precise treatment of your pet's infection rather than a hit-or-miss approach.

As is clear from the rapidly rising rates of antibiotic-resistant infections in pets, that hit-or-miss approach has created a dangerous and deadly situation for our animal companions that need to be addressed.

Additional Recommendations for Pet Parents

- Remember: Viral and fungal infections do not respond to antibiotics. Prescribing antibiotics to treat a viral infection is a classic example of indiscriminate use of the drug, and it still happens all the time in veterinary medicine. Don't let it happen to your pet!
- Giving the proper dose of antibiotic at the proper intervals and using the entire prescription is extremely important, even if your pet seems to be fully recovered before the medication has run out. Finishing the prescription will ensure the infection is totally resolved and prevent your pet from having to take another full course of antibiotics because the first course wasn't fully administered, and the infection wasn't cleared.

- Make sure to provide your dog or cat with a high-quality pet probiotic during and after antibiotic therapy. Giving a probiotic will reseed the gut with the appropriate healthy bacteria your furry family member needs for a strong and balanced immune system.
- Work with an integrative veterinarian who has experience using natural substances to help reduce bacterial growth, including oregano oil, propolis and olive leaf extract. Consider using **essential oils**, colloidal silver, Manuka honey and Pavia cream to naturally treat MRSA and other types of skin infections.

Sources and References

[1, 2] University of Illinois News Bureau, October 3, 2017