



## Leishmaniasis Fact Sheet

Although not currently common in the UK, Leishmaniasis is a prevalent disease in much of Europe and warmer areas of the world. It may not be cured but veterinary treatment can lead to remission and effective long-term control of the disease with no impairment in quality of life.

Leishmaniasis does not need to be a death sentence for dogs and it is important to find a vet who has up-to-date knowledge of the disease and its treatment.

Leishmaniasis is a serious disease and mismanagement can lead to a decline in health of the animal, but provided owners are aware of the symptoms and treatment protocols, dogs should be able to lead happy, normal lives. We hope that with more education more people will consider adopting dogs with Leishmaniasis and give them a chance for a normal happy life.

### What is Leishmaniasis?

Leishmaniasis is an infection of leishmania protozoa (unicellular organism) that can affect humans and mammals. The disease is found all over the world except in Australia and is transmitted by bites from phlebotomine sand flies only. - At the moment it seems the ongoing infection is limited in Europe to the 48th - 50th northern degree of latitude due to the dissemination of the sandfly. The infection produces a wide range of symptoms including hair loss around the eyes and muzzle, inappetence, weight loss, nose bleeds and eye problems, weeping lesions, lethargy, anaemia, dermatitis and overgrown claws. Severe infections can also lead to internal problems, mainly affecting the bone marrow and the kidney up to kidney failure. If left untreated, severe infections can be fatal.

### How do dogs catch leishmaniasis?

Dogs become infected through bites from a blood-sucking insect called a sand fly (Phlebotomine). Female sand flies suck blood for protein to make

their eggs. If a fly bites an infected dog, the Leishmania parasite develops into an infectious stadium in the digestive tract of the sand fly and, later, when the fly bites again, infective forms of the parasite are injected into the skin of the animal which may then develop Leishmaniasis. Under ideal circumstances the phase in the sand fly takes 5-8 days but can be much longer.

The only proven ways of infection are with the vector (sandfly) in between. However there is a theoretical transmission possible if an infected dog with severe cutaneous form would bring his wet wound (where the Leishmania live) in direct contact to an open wound of another host (dog or human). But this method of infection is so far only theoretical and has not been proven.

Where the disease is managed, any risks of spreading the disease are significantly lower and reports of transmission are from severely infected, untreated dogs. A vector is usually necessary for any transmission of the disease so in countries where there are no sand flies, there is little risk of any spread of the disease. The vector involved in the transmission of Leishmaniasis is not found in the UK.

## **Can Leishmaniasis be transmitted to humans?**

Although some forms of the disease can be carried by humans, direct dog-to-human transmission has never been reported, even among veterinarians who have handled hundreds of dogs with Leishmaniasis. Where the disease is managed at low levels there is a negligible risk of any kind of transmission and the canine strain of the disease is different to the strain that affects humans in other parts of the world.

Human patients seem to respond much better to treatment than dogs, and infections are very seldom life-threatening, responding well to the same drugs used to treat dogs, provided they are treated promptly. Many infectious in humans seem to happen without symptoms or complications.

## **Where are dogs at risk?**

Dogs are at risk from the disease anywhere where there are sand flies present. They are most abundant in gardens, around houses in the

countryside, parklands and woodland. The period of activity of all sand fly vectors is from sunset to sunrise. The dangerous times of year are different in different countries. Around the Mediterranean, Leishmaniasis is transmitted from May to September, or later if there is an Indian summer, to October. It is endemic in most of Greece, much of Italy, the Balkans, Malta, southern France, many parts of Portugal and Spain (particularly in the south east and the Balearic Islands) and in the humid parts of North Africa. Among the safe places are the Scandinavian countries, the UK including the Channel Islands, Belgium, Luxembourg, the Netherlands, Germany, northern France, and the mountains of Switzerland. There have also been recent reports of cases in warmer parts of the USA.

### **How can Leishmaniasis be prevented?**

A vaccination against Leishmaniasis has been available for the last few years (CaniLeish) . It can have a few side effects and these should be discussed with your vet.

Prophylaxis include chemoprophylaxis (Domperidon - leishguard to activate the immune system) and prevention of bites from the sand fly by using a Deltamethrin-impregnated collars. (Scalibor®ProtectorBand, Intervet International) These collars effective in killing sand flies that feed on dogs and also have a strong anti-feeding effect on the flies. The collars slowly release insecticide onto the skin and retains efficacy for many months. There is also spot on medication available (Advantix, Exspot). To minimize the risk of infection dogs should sleep inside in affected areas.

### **How is Leishmaniasis diagnosed?**

The common clinical signs of canine Leishmaniasis may be enough to suggest Leishmaniasis to an experienced veterinarian, especially in an endemic area yet it is important to confirm clinical diagnosis with laboratory test. Diagnosis can be made by direct or indirect proof of the leishmania. (microscopic examination of a bone marrow or lymph gland sample, serological detection in blood samples, or DNA tests in circulating blood cells or skin.)

Recent information from Leishmania conferences indicates that for lower level dogs, an annual general health profile should be taken. From these

results a veterinarian will be able to detect whether the Leishmaniasis is active. Globulin will be raised and Albumin will be abnormally low on Biochemistry results and Eosinophils may be flagged on Haematology results. If all results are normal then there is no reason to have a titre test done. If there are abnormalities with the results then a titre test can be taken to determine whether Leishmaniasis is the cause. Titre tests are not necessarily useful in isolation and are usually taken before and after treatment in order to assess the effectiveness of treatment protocols.

In addition to the titre test, Electrophoresis tests can be requested from an external laboratory and will help with identifying whether the dog requires treatment. This test accurately maps the protein levels of the blood and will detect any changes caused by Leishmaniasis.

For dogs with high levels of infection, electrophoresis, titre and a general health profile should be taken in order to adequately map the status of the disease.

## **What are the clinical signs of Leishmaniasis?**

Leishmaniasis will progress slowly in the dog's body and it can take up to seven years from infection to the point when the dog owner starts to notice Leishmaniasis symptoms in the dog. The symptoms are often vague and the vet might treat the dog for other more common diseases before realising that the cause of the problems is Leishmaniasis. There are also quite a lot of dogs that seem to be naturally resistant to the parasite - they are infected but they never develop any symptoms of Leishmaniasis.

Common symptoms of Leishmaniasis in dogs are weakness, listlessness, intolerance to exercise, and loss of appetite (often leading to weight loss). In some dogs, these symptoms are accompanied with hepatosplenomegaly (enlargement of the liver and spleen), local or generalized lymphadenopathy (swollen lymph nodes), and/or a fever. Up to 90% of dogs suffering from symptomatic Leishmaniasis have both visceral and cutaneous lesions. Cutaneous Leishmaniasis lesions are normally dry and the dog will lose its hair. The head is usually the first place for lesions to show, especially on the muzzle and pinna. Lesions originating on the footpads are also quite common. Eventually, the Leishmaniasis lesions can spread to the rest of the dog's body. Articular involvement is not uncommon when it comes to Leishmaniasis in dogs, and can lead to swollen joints and a stiff

gait. Other symptoms of Leishmaniasis in dogs are chronic diarrhoea, deformed and brittle nails, and ocular lesions.

If any of these symptoms present then owners should take the dog to see a vet in case they need to be put back on medication or on a higher dose of medication. Although these clinical signs seem severe, the initial stages are easy to spot and there is a good window of opportunity to get treatment and get the disease back to a managed level.

## **What is the treatment for Leishmaniasis?**

Currently there is no cure for Leishmaniasis but the disease can be very successfully managed with simple drug therapy and the dogs can go on to lead normal lives. The earlier the infection is treated, the better the chance of controlling the disease. Once treated, the clinical signs can go in remission but the dog will probably still be infected at a very low level for life, and may relapse. Dogs should be afforded a good diet, regular worming and flea treatments in order to reduce challenges on body systems. The healthier the dog, the lower the chances of a relapse occurring.

There are different possibilities for the drug therapy. Please check with your vet to find out the best treatment for your dog as it depends on individual blood results and clinical symptoms.

The drugs that are used for therapy are leishmanicidal (killing the leishmania), leishmanistatic (inhibiting the growth of the leishmania) or they modulate the immunesystem.

Leishmanistatic: Allopurinol, Azol

Leishmanicidal: Miltefosine (Milteforan), Antimoniate (Glucantime), Amphotericin B (AmBisome®), Paromomycin (Aminosidin®), Pentamidin (Lomidine®)

Immunesysteme modulation: Domperidon (Leishguard®, Motillium®), Levamisol (Concurat®)

Especially the group of leishmanicidal working drugs can have serious side effects so where possible our infected dogs are mainly treated with immunomodulation (Domperidon® twice a year for a month) and Allopurinol® (ongoing treatment). Both drugs can be given in tablet form very easily and are cheap to purchase.

But again, pending on blood results and clinical symptoms in some occasions an initial therapy with leishmanicidal drugs might be an option.

Even many dogs with clinical symptoms may after initial stabilisation of the disease never need further treatment whilst others may need an ongoing treatment of allopurinol in the form of a twice-daily oral tablet/tablets. Allopurinol can be given to the dog by the owner. The dose range for allopurinol tablets is 10-30mg per kg of bodyweight. As low a dose as possible is used with the highest dose reserved for active cases and dogs with high levels of the parasite. Initially doses may be at the higher range with gradual reductions to the lowest effective dose.

It is important to note that the lowest effective dose of allopurinol is 10mg per kilogram of bodyweight twice a day. Medications should be given 12 hours apart in order that there is a regular level of the medication in the dog's system at all times.

Treatment is relatively inexpensive and provided owners are aware of the early signs of a relapse and regular blood tests are carried out, the dog may never show severe symptoms. Regular blood tests can assess the level of Leishmania infection and also indicate the health of the animal, therefore helping to reveal the need for allopurinol tablets before clinical signs appear. Some dogs have such low levels that they do not ever need treatment whilst other dogs may need to stay on a low level allopurinol dose for life. In either case it should be possible for the dog to have a normal quality of life.

There is still a lot of research going on and medication possibilities might change in future.

## **What support is available?**

There is always help and support available for every dog that has been rehomed from AAR. There are many volunteers and supporters who are keen to share information on Leishmaniasis and its treatment and are happy to help with any problems or questions that may crop up. Please contact us for any further advice. We can also put you in contact with other 'new parents' who have adopted Leish positive dogs.

This information is not intended as a replacement or substitute for veterinary care. Please see a vet immediately if you are worried about your dog

Useful FB links for more information and support:

Living With Leish -

<https://www.facebook.com/groups/447077055372021/?fref=ts>

Canine Leish - <https://www.facebook.com/pages/Canine-leishmaniasis/253815474643017?fref=ts>