Evolution of the Prevalence of *Dirofilaria immitis* in Gran Canaria Island, Spain

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9:00-9:15 am • Friday, April 16, 2010

The highest prevalence of *Dirofilaria immitis* in Spain has been reported in the island of Gran Canaria, where prevalence exceeded 67% in 1994. Most veterinarians on the island of Gran Canaria include heartworm disease as the first differential diagnosis in dogs with cardiopulmonary signs. During the last 15 years a complete investigation of the disease in Gran Canaria Island has been carried out by means of an epidemiological survey of the disease in dogs, cats, and humans.

The island Gran Canaria is a nexus between Africa and Europe as it is located closely to the northwestern coast of Africa (95 km) and is an endemic *D. immitis* area within the Canary Islands. The island has a truncated cone shape and a radius of 40 km from the highest central peak of the island (2000 metres high) to the coast. Whilst travelling a few kilometres on the island a significant change in climate, vegetation, and orography can be observed. The island's climate is oceanic-subtropical. Four different isoclimate zones are found in Gran Canaria, ranging from dry desert to humid forest: "Dry and Desert Climate" zone (DD), "Dry and Steppe Climate" zone (DS), "Temperate Climate with Dry Summers and Mild Winters" zone (TM), and "Temperate Climate with Cold Winters and Summers with Temperatures Below 22°C" zone (TC). One of the most important factors that affect the prevalence of the disease in Gran Canaria is the climate.

Six hundred ninety-seven dogs were sampled for this study, with the sample reflecting the distribution of the canine population throughout the isoclimatic areas; at present, the prevalence in dogs is below 19.5%, which is the lowest value reached for over 15 years. We have found the highest prevalence in the DS (25.47%) and TM (30.4%) zones. There are suitable conditions of humidity and temperature for the development of the intermediate host in these areas. Agriculture and livestock farming are very common activities, with average temperatures around 18ºC, and there being many ponds and reservoirs of water ideal for mosquito development. There are also many villages with large gardens where dogs, without prophylactic treatment, are kept. During the years of the study, the dogs most affected were those from rural areas (current prevalence of 41.6%). These dogs are kept mostly outdoors with little sanitary, hygienic, or nutritional care. In these areas, due to the lack of knowledge about the disease, animals are not treated with any preventative measures and, therefore, are a natural reservoir for the disease. We are satisfied with the decrease in the disease, which has been mainly due to the emergence of new chemoprophylactics and the highly effective work of veterinarians who have promoted public awareness. Furthermore, we have carried out a seroepidemiological study in cats, and over 18% of cats tested exceeded the limits of positive results established for the ELISA with peptides for *D. immitis*. This is also the case in humans. According to our data, the presence of *D. immitis* antigen is above 18% of the population studied; furthermore, canine prevalences and human seroprevalences found in each isoclimatic area were very similar.

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The Spreading of *Dirofilaria* Infections in Croatia

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9:15-9:30 am • Friday, April 16, 2010

The prevalence of heartworm disease (HWD) has been drastically increased in the last years in some regions of Croatia. *Dirofilaria immitis* and *Dirofilaria repens* are most prevalent in the region of the peninsula of Istria. In order to define the actual prevalence and to determine foci of high endemicity, a 3-month-long free-of-charge service was offered to the vets. A total of 480 blood samples were collected from owned dogs in this multicentre survey during the period from May to October 2009. Blood samples were examined by modified Knott's and PCR techniques to detect circulating microfilariae and DNA, respectively. Among the regions sampled in the study, the prevalence of the parasite varied. Higher prevalence was found in the northern part of the Istrian peninsula and in the Community of Labin. Up to 35% of the microfilaremic dogs were found in the Community of Buzet (Northern Istria), well known for the high number of truffle-hunting dogs. It is also well known that a truffle-hunting dog must have a keen sense of smell, and it must have good endurance because a real hunt can last 5 to 6 hours.

According to the results of the questionnaire that was distributed among truffle hunters, a considerable number of answers described the signs of fatigue that resemble the chronic pathway of the disease. Sudden deaths of dogs with signs of respiratory distress and cachexia were also reported. Among the regions surveyed, *Dirofilaria immitis*-infected dogs were found in areas not previously known to be endemic, such as Southern Croatia and Slavonia. Although up to now data are only available from 8 Istrian communities (of the 43 communities surveyed), the results suggest that *Dirofilaria immitis* may be present over a wider area than previously thought and thus poses animal and public health risks, justifying use of preventive medication. Final results of this survey in Croatia will be presented.

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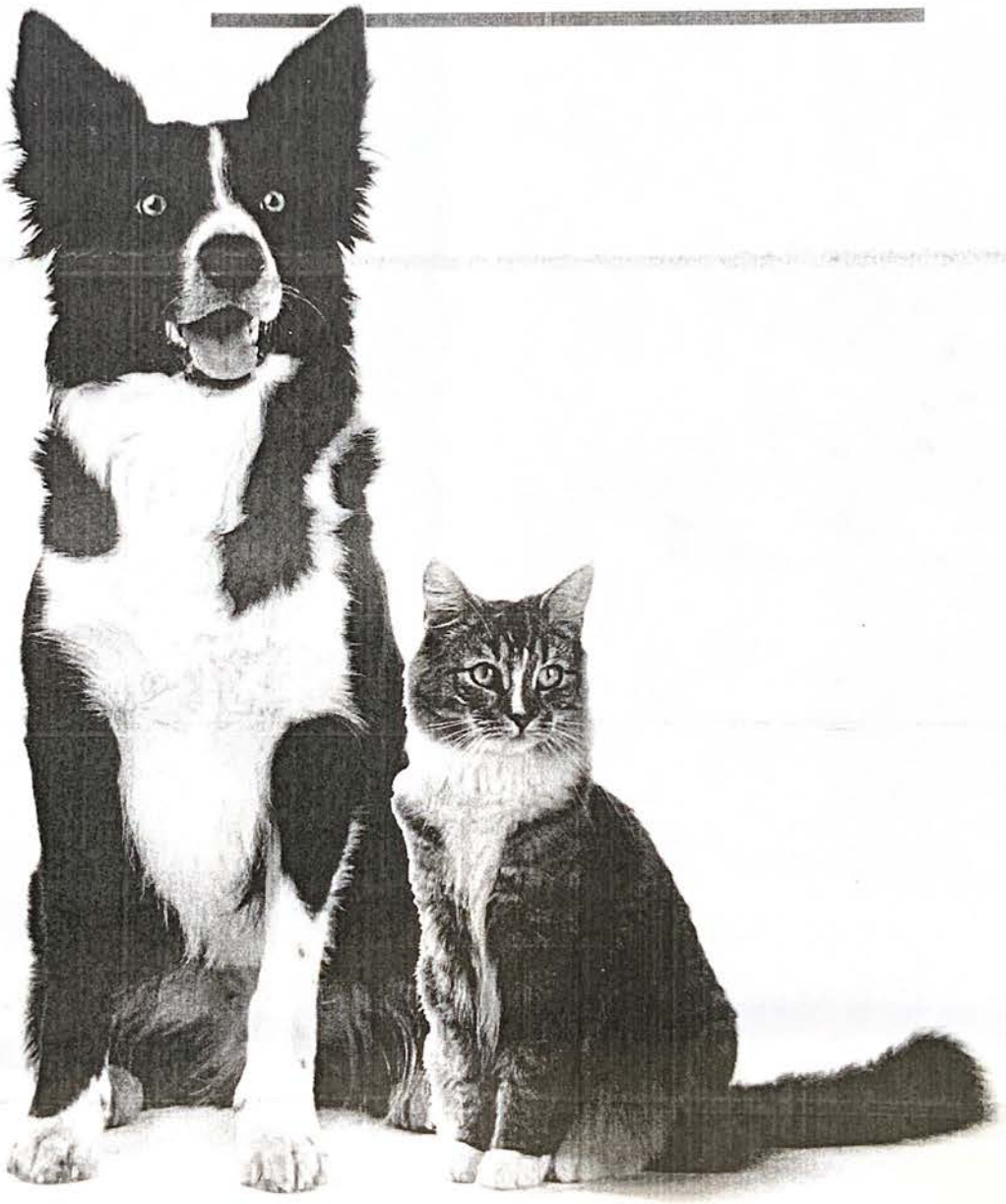

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CONTENTS

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