Meeting Guide

Vector-borne Diseases 2016

19–20 October 2016

Southern European Veterinarian Conference, Granada, Spain

ESCCAP

EUROPEAN SCIENTIFIC COUNSEL COMPANION ANIMAL PARASITES®

Introduction

ESCCAP is delighted to be holding this conference on emerging vector-borne diseases at the Palacio de Congresos in the beautiful city of Granada in Spain. We would like to take this opportunity to thank you for your interest in ESCCAP and for your participation in this unique event.

We hope that this guide will give you an overview of the city and the conference venue, making it easier for you to find your way around.

If you have any questions or comments about the conference before Friday 14th October 2016, please email info@esccap.org and we will endeavour to resolve your query. If you need assistance during the conference, please approach one of the event organisers (listed below) or ask one of the conference stewards for help.

We look forward to seeing you in Granada and hope that you enjoy the event.

Organising Committee: Professor Guadalupe Miró Corrales, Professor Paul Overgaauw, Ruth Pedder and Diane Richards.

Acknowledgements

ESCCAP would like to take this opportunity to thank Professor Guadalupe Miró Corrales for her involvement in the organisation of this important scientific meeting. The directors and members of ESCCAP very much appreciate the contribution she has made.

ESCCAP would also like to thank all of the guest speakers for giving their time to take part in this event.

The directors and members of ESCCAP also extend their sincere appreciation to all their sponsors, without whom these important events would not be possible.

Inside This Guide

Useful Contacts

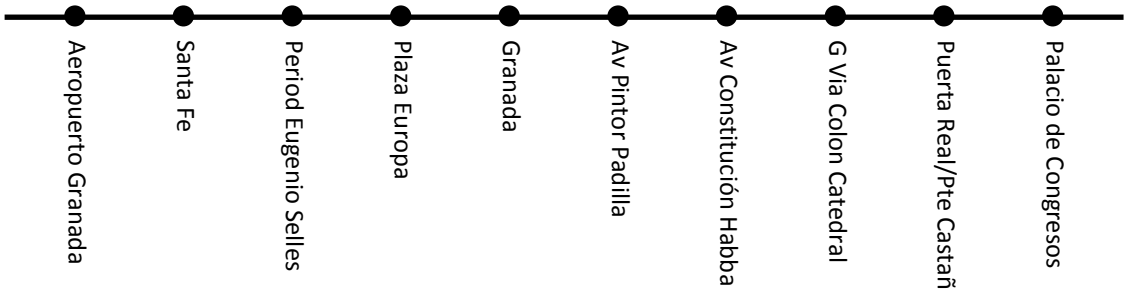
Organising Committee	
Diane Richards	+44 (0)7967 754170
Ruth Pedder	+44 (0)7796 111311
Paul Overgaauw	+31 653 260 696
Scientific Committee	
Guadalupe Miró Corrales	+41 (0) 79 8320902
Southern European Veterinarian Conference (SEVC)	
SEVC Headquarters P. San Gervasio 46-48 E7 08022 Barcelona Spain	+34 932 53 15 22 www.sevc.info General Information: secre@sevc.info Speakers: info@sevc.info Registrations: registrations@sevc.info Exhibition Hall: sponsors@sevc.info
Palacio de Congresos de Granada	
Paseo Violón S/N 18006 Granada Spain	+34 958 24 67 00 palacio@pcgr.org www.pcgr.org
Senator Granada Spa Hotel	
Paseo Violón S/N 18006 Granada Spain	+34 958 13 10 00 senator.granada@playasenator.com www.senatorgranadaspahotel.com

Travel

Granada Airport

The Palacio de Congresos de Granada is approximately 20 kilometres from the Federico García Lorca Granada-Jaén (GRX) airport. There is a shuttle service 20 minutes after each flight arrival from the airport to the convention centre for 2,90€ per person.

The timetable can be found at www.alsa.es by putting *Aeropuerto Granada* as the point of departure and *Granada* as the destination.



Málaga Airport

The SEVC organisation offers a free shuttle service from Málaga Airport to the Granada Convention Centre for attendees of SEVC 2016 which takes approximately 1½ hours. A maximum of 4 seats can be reserved per registered person.

To reserve your transfer, please go to www.sevc.info/index.php/en/granada-en?id=132

Please note that as the ESCCAP VBD symposium is part of a pre-conference programme, there are no free shuttle departures until 19th October. The free shuttle times will be as follows:

Málaga to Granada	19 October:	10.30, 13.00, 16.00, 18.00 and 21.45
	20 October:	10.30, 12.00, 14.00 and 18.00
Granada to Málaga	22 October:	16.00
	23 October:	8.00, 11.00 and 14.00

For bus transfers at other times, please refer to the ALSA website at www.alsa.es. This company operates 17 daily services from Málaga to Granada running between 7.00am and 9.00pm. A return ticket costs around 30,00€.

Accommodation

Many delegates will be staying at the Senator Granada Spa Hotel:

Paseo Violón
S/N
18006 Granada

Tel: +34 958 13 10 00
E-mail: senator.granada@playasenator.com
Website: www.senatorgranadaspahotel.com

Senator Granada Spa Hotel

Hotel Check-in
The official check-in time is 12:00 and the departure time is also 12:00. Should you require early arrival or late departure, please contact the reception team at the hotel. Late check-out depends upon availability and incurs additional fees (19,00€ for a 15:00 check-out and 29,00€ for a 18:00 check-out).

Rooms
All rooms are equipped with a mini bar, welcome tray with tea and coffee, mineral water, TV, music system with CD player, safe, telephone (at an additional charge), hair dryer, air conditioning and complimentary WiFi access.

Breakfast
A buffet breakfast is served from 7:30 to 10:30 Monday to Friday and from 8:00 to 11:00 at weekends.

Restaurant
Inside the hotel is the In the Café de la Rivera (open from 8am to 12am) which serves drinks, tapas, hot food and sandwiches.

Other Facilities
There is a luggage store, gym, spa and private car park (surcharge, subject to availability, no advance bookings allowed).

Please note that hotel expenses such as newspapers, mini bar, telephone, snacks and drinks need to be paid before you leave the hotel.

Conference Venue

Registration, presentations and refreshment breaks will be held at the Palacio de Congresos de Granada.

Palacio de Congresos de Granada

Registration

The scientific programme will begin on the afternoon of Wednesday 19th October 2016. Please arrive in good time to register and collect your pass at the main SEVC desk. You will then need to proceed to Room Machado on the second floor to collect your ESCCAP delegate pack. Event stewards will be on hand to help direct you.

Presentations

Presentations will begin promptly at 14:00 on the Wednesday and 09:00 on the Thursday in Room Machado on the second floor.

The scientific programme can be found on p.10.

Map

Hotel Senator Granada Spa

Palacio de Congresos de Granada

Map data ©2015 Google

Useful Links

ESCCAP
www.esccap.org
www.esccapevents.org

Airports
www.granadaairport.com
www.malagaairport.eu

Bus Information
www.alsa.es/en

Rail Information
www.renfe.com

Tourist Information
www.visitagranada.com
en.granadatur.com
www.andalucia.org
granadainfo.com

Granada Taxis
www.lovegranada.com/transport/granada-taxis
www.granadataxi.com
www.radiotaxigenil.com

Downloadable Maps
en.granadatur.com/planos-mapas

Conference Venue
www.pcgr.org

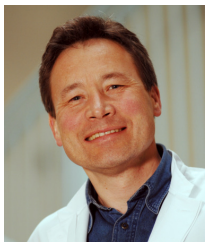
SEVC
www.sevc.info

Senator Granada Spa Hotel
www.senatorgranadaspahotel.com

Meeting Programme

ESCCAP Emerging Vector-Borne Diseases 2016: Epidemiology and Clinical Management

DAY 1: Wednesday 19th October (afternoon)

14:00–14:30		Reinhard K. Straubinger	Lyme disease: state of the art
14:40–15:10		Gad Baneth	Canine babesiosis: epidemiology and control of old and new species
15:20–15:50		Refreshment break	
15:50–16:20		Laura Kramer	Wolbachia, doxycycline and macrocyclic lactones: new prospects in the treatment of canine heartworm disease
16:30–17:00		Patrick Bourdeau	Fleas and flea-borne diseases: questions and facts

DAY 2: Thursday 20th October (morning)

09:00–09:30		Barbara Kohn	Canine anaplasmosis and ehrlichiosis – similar infectious agents, different diseases
09:40–10:10		Michael Lappin	Feline vector-borne diseases
10:20–10:50		Refreshment break	
10:50–11:20		Maria Grazia Pennisi	Feline leishmaniosis: is the cat a small dog?
11:30–12:00		Guadalupe Miró	Canine and human leishmaniosis: status quo in Europe

Please note the information was correct at the time of print but is subject to change due to unforeseen circumstances.

Guest Speaker Paper Abstracts

Lyme disease: state of the art

Straubinger, Reinhard K.

[1]Bacteriology und Mycology, Institute for Infectious Diseases and Zoonoses, Faculty of Veterinary Medicine, LMU Munich, Veterinärstraße 13, 80539 München, Germany.

Lyme disease is a tick-transmitted inflammatory disease induced by spirochetes of the *Borrelia burgdorferi* sensu lato complex. The infection of susceptible hosts is common in moderate climate regions of the northern hemisphere; specific antibody prevalence against borrelia organisms in dogs is in general up to 10 %, but regional prevalence may exceed this rate.

At least three closely interrelated elements must be present in nature to spread Lyme borreliosis: (i) the Lyme-disease-causing bacteria, (ii) *Ixodes* ticks as transmitting vectors for the pathogens, and (iii) mammals, birds and reptiles that provide a blood meal and transportation for the ticks through their various life stages.

Although a high proportion of dogs and other hosts are positive for specific antibodies in endemic areas, only a fraction of the infected animals develop clinical signs. Therefore, serologic testing is absolutely essential to support clinical diagnosis. Nowadays, a selection of assays is available for specific antibody detection. However, only antibody tests (Western blots, line immunoassays, rapid tests), which include VlsE or C6 as capture antigens, are recommended for routine diagnostic procedures.

Therapy consists of antibiotic treatment with doxycycline or amoxicillin for four weeks. Several vaccines for animals, which block the spirochetes' transmission from the tick to the host by the effect of antibodies directed against the bacterial outer surface protein A, are available for several European countries and the USA.

Canine babesiosis: epidemiology and control of old and new species

Gad Baneth[1]
[1] Koret School of Veterinary Medicine, Hebrew University.

Babesia are tick-borne protozoan parasites of erythrocytes that infect vertebrates. Canine infections are caused by different *Babesia* species. These include the large form species *Babesia rossi, B. canis* and *B. vogeli* which have a similar morphology but differ in the severity of clinical manifestations which they cause, their tick vectors, genetic characteristics, and geographic distribution. Another unnamed *Babesia* species most closely related to *B. bigemina* infects immunocompromised dogs in the USA. The small *Babesia* spp. include *B. gibsoni*, *B. conradae* and *B. vulpes* (*Theileria annae*, *B. microti*-like). The geographical distribution of the different *Babesia* species are largely dependent on the habitat of their tick vector species, with the exception of *B. gibsoni* where evidence for dog to dog transmission indicates that infection can be transmitted among dogs independently of the limitations of vector tick infestation. *Babesia vogeli* and *B. gibsoni* are present in Europe, Africa, Asia, America and Australia, whereas *B. rossi* and *B. canis* have been mostly restricted to Africa and Europe, respectively. *Babesia conradae* has been reported only from North America whereas *B. vulpes* was reported in Europe and North America. Large *Babesia* spp. of dogs are commonly treated with imidocarb dipropionate or diminazene aceturate. Small *Babesia* spp. are considered more resistant and treated with the combinations of atovaquone and azithromycin or clindamycin, metronidazole and doxycycline. Prevention of babesiosis relies on acaricides and vaccines available in some European countries.

Wolbachia, doxycycline and macrocyclic lactones: new prospects in the treatment of canine heartworm disease

Laura Kramer
University of Parma, Italy.

Melarsomine dihydrochloride is the only approved adulticidal drug for treatment of HWD. However, according to the American Heartworm Society (AHS) guidelines, in cases where arsenical therapy is not possible or is contraindicated, a monthly heartworm preventive along with doxycycline for a 4-week period, which targets the bacterial endosymbiont Wolbachia, might be considered. There are published reports on the efficacy of ivermectin and doxycycline in both experimentally and naturally infected dogs, but no data on the use of moxidectin with a similar treatment regime. Preliminary results of an on-going study show that moxidectin, the only macrocyclic lactone (ML) registered as a microfilaricide, is also adulticidal when combined with doxycycline. It is not yet known if the efficacy of these combination therapies is due to pharmacokinetic synergism. A recent study showed that serum levels of doxycycline in dogs treated with the combination protocol were not statistically different, however, compared to dogs treated with doxycycline alone.

Fleas and flea borne diseases – questions and facts

Patrick Bourdeau
DVM, PhD, Agrégé de Parasitologie, Dip ECVD, Dip EVPC*(np).*
Dermatology/Parasitology/Mycology Unit. Ecole Nationale Vétérinaire - ONIRIS. LUNAM ; Nantes - France.

The fleas form an original group of haematophagous insects, ectoparasites at adult stage, associated with an important risk of transmission of pathogens to domestic animals or humans. Amongst the numerous agents suggested to be transmitted, not all of them have really been demonstrated. Sometimes their role is only anecdotic without epidemiological significance. The most historically famous flea-transmitted bacteria is *Yersinia pestis* ("plague"), still present in many countries. *Ctenocephalides* spp. are considered a poor vector for plague. Amongst other species, *Bartonella henselae,* responsible for human "cat scratch disease", is frequently transmitted among cats by *Ctenocephalides felis* (or flea faeces). *Rickettsia felis* infects fleas with a transovarial and transstadial transmission. It is an agent in humans of the likely misdiagnosed "flea-borne spotted fever". Feline hemotropic mycoplasmas (prev. *Haemobartonella*), initially thought to be flea transmitted, have other more important modes of transmission. Fleas are vectors of protozoa like *Trypanosoma* in rodents but not *Leishmania* as recurrently suggested. *Dipylidium caninum* is highly prevalent in companion animals and contracted from ingestion of cysticercoids-containing fleas, infested at larval stage. A mildly pathogenic filaria *Acanthocheilonema reconditum* uses fleas as an intermediate host. Fleas (*Spilopsyllus*) play an important role in the transmission of myxoma virus in rabbits. Although suspected to transmit Feline Leukemia virus, *Ctenocephalides* has only a transient, non-significant, role and the risk is no more than a short residual syringe effect.

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Canine anaplasmosis and ehrlichiosis – similar infectious agents, different diseases

Barbara Kohn
Clinic for Small Animals, Freie Universität Berlin, Germany.

E. canis causes canine ehrlichiosis (CE), *A. phagocytophilum* granulocytic anaplasmosis (CGA); both infectious agents are tick-transmitted (*Rhipicephalus sanguineus* and *Ixodes* ticks, resp.) and belong to the family *Anaplasmataceae.*

Monocytic ehrlichiosis

After an incubation period of 8 - 20 days, fever, depression, anorexia, lymphadeno- and splenomegaly, pale mucous membranes, ocular abnormalities, surface bleeding and rarely polyarthritis and CNS signs may occur. Laboratory abnormalities include thrombocytopenia, anemia, leukopenia, neutropenia, lymphopenia, rarely granular lymphocytosis. Pancytopenia typifies the chronic CE. Hypergammaglobulinemia (poly-, rarely monoclonal), hypoalbuminemia and mildly elevated liver enzymes are common. Diagnosis is based on (travel) history, clinical signs, laboratory abnormalities, and *Ehrlichia*-specific testing (serology, PCR). Doxycycline is effective in acute cases, but inconsistent in eradicating the infection in chronic forms. Supportive treatment (e.g. infusions, blood transfusions, short-term glucocorticoids) is often needed. Prognosis is good in acute but may be grave in chronic CE.

Granulocytic anaplasmosis

Most dogs are diagnosed during the acute stage after an incubation period of 1 – 2 weeks. Clinical and laboratory abnormalities resemble the ones in acute CE. Many naturally infected dogs probably remain healthy (subclinical disease / silent elimination). Diagnosis is based on 1) morulae in granulocytes; 2) a positive PCR test; 3) a four-fold increase / decrease in the antibody titre within 4 weeks. Treatment of choice is doxycycline combined with supportive treatment. Prognosis is good; if the pathogen induces chronic infection is unknown.

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Vector borne diseases in cats

Michael R. Lappin, DVM, PhD, DACVIM
College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins Colorado, USA.

There are multiple vector borne diseases in cats, the most prominent being those transmitted by mosquitoes, sand flies, fleas and ticks. Many of the agents vectored by fleas or ticks have been grown or amplified from blood or have induced serum antibodies in the serum of normal cats or those with clinical signs like fever. As high as 80% of fleas collected from cats contain at least one organism that could induce illness in cats or people.

Anaplasma phagocytophilum, *Bartonella* spp, *Borrelia* spp., *Ehrlichia* spp., hemoplasmas, and *Rickettsia* spp. infect cats and can be associated with clinical illness. *Anaplasma phagocytophilum* and *B. burgdorferi* are transmitted by *Ixodes* spp., *Ehrlichia* spp. and *A. platys* are transmitted by *Rhipicephalus sanguineous*. Fleas vector *Bartonella* spp., hemoplasmas, and *R. felis*. Recently, *R. typhus* was detected in cats in Spain.

Lethargy and fever are common findings in cats with flea and tick borne diseases. Hemoplasmas are associated with hemolytic anemia. Moderate thrombocytopenia is associated with the tick-vectored agents. Polymerase chain reaction assays performed on blood collected in the acute phase of infection can be used to prove presence of the organisms. Doxycycline at 5 mg/kg, PO, twice daily or 10 mg/kg, PO, daily can be effective for resolving the clinical signs. If doxycycline is ineffective or not tolerated, fluoroquinolones can be effective for treatment of clinical illness associated with *Bartonella* spp, hemoplasmas, and *Rickettsia* spp. Use of flea and tick control products is effective for blocking transmission of many of the agents.

Feline leishmaniosis: is the cat a small dog?

Maria Grazia Pennisi
University of Messina, Italy.

Leishmaniosis is caused in Europe by *Leishmania infantum*, agent of visceral leishmaniosis, a potentially fatal disease for humans and dogs transmitted by sand flies.

This *Leishmania* species is also isolated from cats in endemic areas. Pathogenesis of leishmaniosis in cats is not known but some experimental data supported the hypothesis that cats are less susceptible than dogs to Leishmania infection.

Information on feline leishmaniosis is derived from single case reports or case series in which diagnosis was confirmed by serological, parasitological and/or molecular methods.

About half of cats developing the disease could have had an impaired immune competence because of retroviral infection or immunosuppressive therapies. On the other hand, FIV infection was found to be associated to Leishmania in some epidemiological studies.

The most common clinical findings included skin or mucosal lesions (ulcerative or nodular), lymph node enlargement, ocular (uveitis) or oral lesions, weight loss. Anaemia, hyperglobulinemia, proteinuria and chronic renal failure occurred. Leishmania amastigotes were found by cytological or histological examination of lesions or tissues. Diagnosis was confirmed also by detection of anti-Leishmania antibodies or parasite DNA.

Therapy was empirically carried out in cats with drugs conventionally used for canine leishmaniosis, mainly allopurinol or meglumine antimoniate, and clinical cure was usually obtained.

In conclusion, clinical features of feline leishmaniosis show strong similarities with the canine disease but there are main issues that need to be addressed by means of prospective controlled trials.

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Canine and human leishmaniosis: status quo in Europe

Prof. Guadalupe Miró Corrales (DVM, PhD, Dipl. EVPC)
Animal Health Dept., Veterinary Teaching Hospital, Veterinary Faculty, Universidad Complutense of Madrid, Spain.

Leishmaniosis is caused by *Leishmania infantum* in dogs and human beings is currently a well known disease in Europe, being considered dogs the major reservoir of the parasite for humans and other mammalian hosts.

Reported human leishmaniosis (HL) case figures are widely acknowledged to represent gross underestimates of the true burden, but active searching promoted by WHO provides yearly reported visceral and cutaneous leishmaniosis incidence worldwide. Concretely, the European countries with high incidence for HL in the last decade were: Spain, Italy, Albania, Greece and Portugal.

New distribution of canine leishmaniosis (CanL) in northern areas of Europe due to the great activity of re-homing pets from southern endemic countries to non-endemic areas is a fact. Most of all, new alternative routes of transmission in the absence of competent phlebotomine vectors may be the cause of the spread of this important zoonosis.

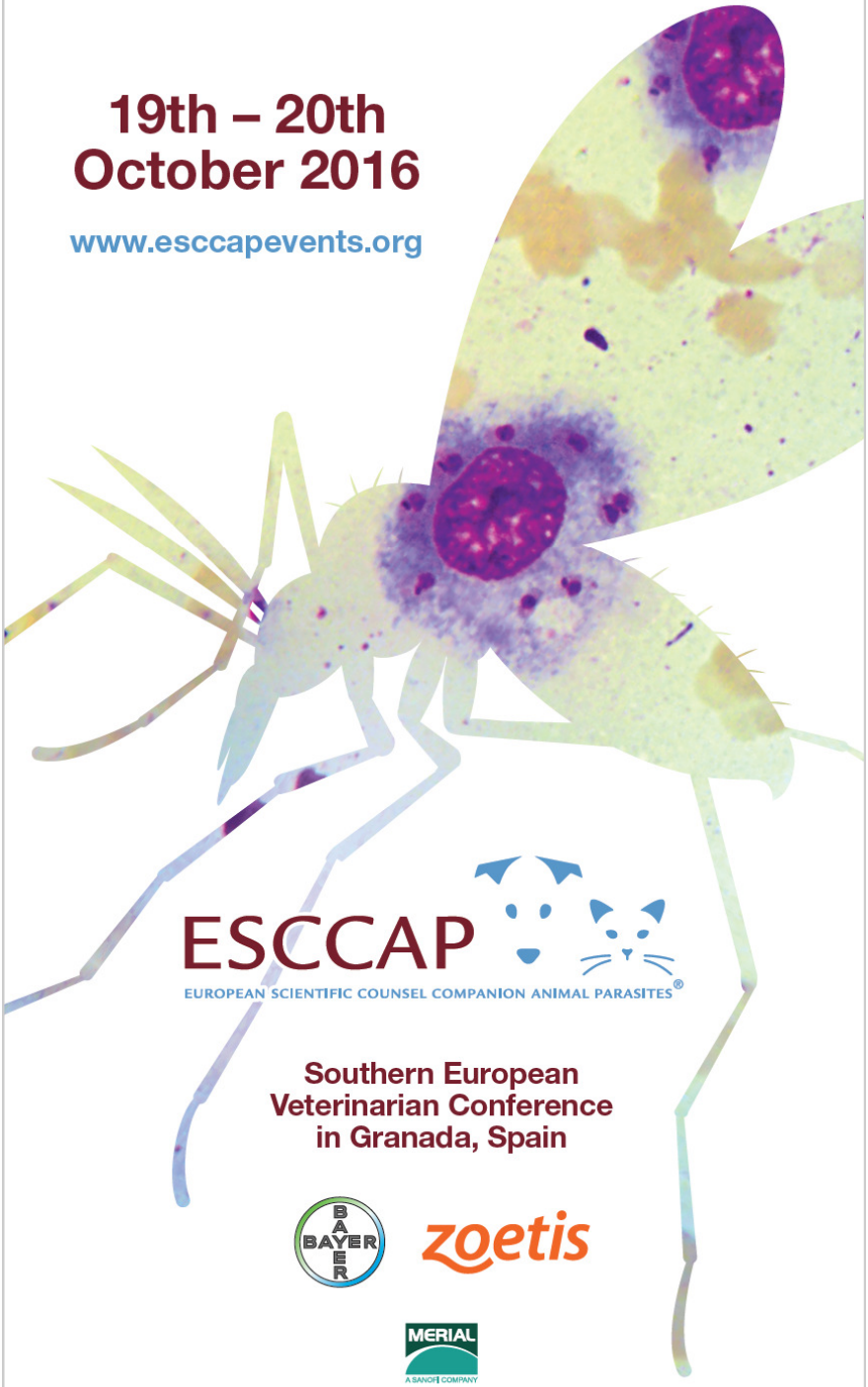
Prevention of CanL leishmaniosis requires an integrated approach to reduce the risk of infection, disease development, transmission and geographic spread, using insecticides with rapid and residual activity to protect dogs against sand-flies biting and vaccines to reduce the odds of evolution of infection to clinical disease.

In conclusion, changes about the social role of dogs in the last decades because of the importance of the human-animal bond makes the need to recognize new concepts on the epidemiology, diagnosis and control of canine and human zoonotic leishmaniosis from a “One Health” approach.

Vector-borne Diseases 2016

19th – 20th October 2016

www.esccapevents.org



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