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TÓPICOS DA PROTOZOOLOGIA CONTEMPORÂNEA

PERGUNTAS e RESPOSTAS

Módulo: 01	Aula: Aula 03	Data do Webinar: 06/08
Título: Ecoepidemiologia das Leishmânias		
Ministrante: Jeffrey Shaw		

46 - Existe algum fator que esteja associado a adaptação dos flebotomíneos a novos ambientes possibilitando assim novos ciclos de transmissão?

Nome do Aluno: Claudeth de Souza Pinto

Respondido na *Live*.

47 - O que justifica o aumento de casos de leishmaniose no Estado de São Paulo nos últimos 20 anos e quais medidas têm sido tomadas para a redução destes casos?

Nome do Aluno: Stela Virgilio

Respondido na *Live*.

48 - Em relação aos vetores de Leishmania, está bem estabelecido papel dos flebotomos e foi mostrado na aula que talvez os maruins possam atuar como vetores. Gostaria de saber a opinião sobre os carrapatos encontrados nos cães infectados e que são positivos para DNA de Leishmania, embora o desenvolvimento dos parasitas nunca tenha sido mostrado e sua capacidade de transmissão. Eles poderiam ser vetores mecânicos ?

Nome do Aluno: Lucia Pinto da Silva

Respondido na *Live*.

49 - Is there any preventive guidelines to diminish the VL cases in children?

Nome do Aluno: Marisol Pallete Briceno

Respondido na *Live*.



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50 - 1-Como estimular estudos eco-epidemiológicos em hospedeiros (que não o homem) para entender a cadeia de transmissão nas diferentes regiões brasileiras?

2-Como o ritmo de desflorestamento e avanço no crescimento das cidades está afetando a transmissão zoonótico?

Nome do Aluno: Sandra Muxel

Respondido na *Live*.

51 - A long time ago, i listen about horse as reservoir in VL. What do you think about? Thanks

Nome do Aluno: Thaís Martins Pereira

Respondido na *Live*.

52 - Good afternoon. I'm Tâmara, from UENF - Darcy Ribeiro. Considering that anthropological and natural factors can influence the spread of leishmaniasis regardless of the species in question. Can anthropological factors overcome natural factors with the favorable temperature?

Nome do Aluno: Tâmara Carolina Gomes Ribeiro

Respondido na *Live*.

53 - The lesion size may vary according to with parasites number. The different species for CL, may produce different lesions? The strain virulence may influence the size of the lesions?

Nome do Aluno: Jessica Carreira

Respondido na *Live*.

-----*Live*-----

1 - Dr Jeffrey, I saw in your slide entitled "What is leishmaniasis?" that you quote "leishmaniasis" and define the disease as caused by Leishmaniinae parasites, i.e., including other species than Leishmania. Maybe the disease could be defined as "leishmaniinaesis"? I would like to hear your thoughts about the implications (clinical and eco-epidemiological) of



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other Leishmaniinae species, such as *Leptomonas* and *Crithidia*, have been found in human leishmaniasis cases. Also, I would like to know if other Leishmaniinae species have been found in domestic reservoirs and phlebotomines. Thanks

Nome do Aluno: Sandra Maruyama

The use of the name “leishmaniinaeses” instead of leishmaniasis is excellent. It draws attention to the diversity of challenges involved ranging from problems in diagnosis, treatment to control of pathologies that does not respond to traditional methods. This is associated with difficulties in understanding and accepting new eco-epidemiologies. There is a natural resistance to introducing new terms but if they are found to be useful in time they replace older ones. They are more likely to be accepted when used in review papers, books chapters and sites.

Participation of other Leishmaniinae genera in pathologies considered to be leishmaniasis is complex. The lowering of immunity by other pathogens such as HIV and visceral leishmaniasis facilitates infections by parasites of these other genera which are considered to be monoxenous. Examples are co-infections of *Leptomonas* in cases of visceral leishmaniasis in India and *Crithidia*-like parasites from cutaneous lesions. Their participation as being primarily responsible for pathologies is being accepted. A recent example is the fatal case of a visceral disease due to a *Crithidia*-like organism (doi:10.3201/eid2511.181548). The concept of dioxenous and monoxenous parasites is important but under certain circumstance the fact that you find a monoxenous insect parasite in a vertebrate does not prove it is dioxenous which is a life cycle concept.

There are records of both *Crithidia* and *Leptomonas* in sand flies, fleas and ticks and recently a *Crithidia*-like parasite in a bat. As far as I know there are no records in domestic animals. With the increased human population, the chances of contact with one of these parasites is greater as is the possible genetic host susceptibility be it natural or secondarily provoked. We see a reflection of this with individuals who are susceptible to certain bacteria that in the general population is innocuous. This is a hypothesis.

2 - Prezado Dr. Jeffrey. A complexidade das relações eco-epidemiológicas de *Leishmania* spp. sugere uma altíssima dificuldade no controle da doença. Gostaria conhecer a opinião do Sr. em relação ao desenvolvimento de vacinas e potencial efetividade como ferramentas de controle de leishmaniasis canina. Muito obrigado e um forte abraço para você.

Nome do Aluno: Herakles

In my opinion the only way we will ever control leishmaniasis is with vaccines. There are commercially available vaccines for dogs but their efficacy is controversial. In the meantime the best option for dogs are insecticidally impregnated collars. Areas of vaccine research range from



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whole and molecules of the parasite to substances found in sand fly saliva. A new approach with attenuated parasites of *L. donovani* is promising (10.4049/jimmunol.1700674).

The most efficient form of vaccination in man so far is the ancient method known as leishmanization. This is particularly associated with *Leishmania major*. A second generation vaccine (doi: 10.1038/s41467-020-17154-z) has been successful in protecting against sand fly transmission.

Always remember that the gold standard for the efficacy of a leishmanial vaccine is protection from sand fly challenge

3 - Dr. Jeffrey, existe alguma relação entre o sexo de um indivíduo e os casos de Leishmaniose visceral?

Nome do Aluno: Ariane Jane da Silva Gama

There is evidence that females are less susceptible to infection and that women suffer less serious outcomes (doi: 10.1371/journal.pntd.0007995). This phenomenon is known for other pathogens such as COVID-19.

4 - Prof. Jeffrey: Taking the example of the São Paulo state, where there are municipalities with cases of visceral leishmaniasis in dogs and / or humans without the encounter of *L. longipalpis*, is there already scientific evidence of other sand flies involved in the transmission of the disease?

Nome do Aluno: Thiago Kury

There is good evidence that other sand flies are transmitting visceral leishmaniasis both in São Paulo and other states. The major indicator of this is autochthonous human cases in the absence of *L. longipalpis*. However, this is not the case for canine infections as there is vertical transmission (transplacental) so you can have CVL in the absence of any sand fly.

5 - Dr. Shaw: What do you think about the dog treatment for visceral leishmaniasis in Brazil? Do you think that could impact the epidemiology of leishmaniasis? And about euthanasia, what's your opinion about the difference of efficacy of this measure of control in different studies?

Nome do Aluno: Erika Moutinho Costa



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There are many articles on this subject but treatment may lead to temporary clinical improvement but not to cure and there is no evidence that it would have any significant epidemiological impact. Theoretically if you eliminate the source of an infection you will eliminate the disease. The problem with this concept for visceral leishmaniasis is the enormous logistical difficulties involved in performing this efficiently. Firstly you have to be sure that your test method detects all infected animals and that there is no delay between detection and elimination as this would enable transmission to new animals that may have been negative during the testing. There are also social problems. A dog can be infectious to sand flies and not have clinical symptoms so the owner would not understand why the dog has to be eliminated. For these reasons euthanasia has never had a significant lasting epidemiological impact.