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Curriculum Vitæ

Despoina Kostopoulou was born in Thessaloniki, Greece, on 27 January 1985.

She obtained a Degree in Veterinary Medicine, Aristotle University of Thessaloniki, Greece in 2010. Since then she has been working as a research assistant in the Laboratory of Parasitology at the Veterinary Research Institute, Hellenic Agricultural Organization - Demeter, Thessaloniki, Greece. In 2011 she enrolled as a PhD-student in the Laboratory of Parasitology, UGent. Her thesis was funded by 2 personal fellowships from the State Scholarships Foundation, Greece. She has participated as a trainee in 8 training courses in the field of Parasitology through Europe. She has been also participated in 10 research projects funded by the European Union and the private sector.

Despoina Kostopoulou is first author or co-author of 5 papers published in peer reviewed journals. She has presented her research results at several national and international congresses.

INVITATION

Public Defence of the doctoral thesis of

Despoina Kostopoulou

September 10, 2018

Laboratory of Parasitology

Department of Virology, Parasitology and
Immunology

Faculty of Veterinary Medicine, UGent



You are kindly invited to attend the public defence
of the doctoral thesis of

Despoina Kostopoulou

Title of the thesis:

**Prevalence and zoonotic
potential of *Cryptosporidium* spp
and *Giardia duodenalis* in
different host species in Greece**

The public defence will take place on
Monday the 10^h of September 2018
at 16:30 hours
in Kliniek auditorium D of
the Faculty of Veterinary Medicine
Salisburylaan 133, Merelbeke

Giardia spp and *Cryptosporidium* spp are two important parasitic protozoa which affect various hosts, including humans. Globally, about 280,000 human cases of giardiasis and 748,000 cases of cryptosporidiosis are reported every year not only in the developing world but also in developed countries. These two protozoa have been implicated in several disease outbreaks and a debate has been arisen about their zoonotic potential.

The literature review provides some important points and current data regarding *Giardia* and *Cryptosporidium*. This chapter describes the biology of the parasites, their impact on human and animal health (horses, dogs, cats, livestock), their epidemiology and their zoonotic character, as well as ways of prevention and control of their transmission.

Next, the presence of *Giardia* and *Cryptosporidium* in foals in Greece was evaluated (Chapter 2). In total, 190 foals were examined and 11.6% and 1.1% were found positive for *Giardia* and *Cryptosporidium* respectively, using a quantitative direct immunofluorescence assay (IFA). Positive samples were genotyped showing the presence of *Giardia* assemblages AI and/or BIV and E. Sequencing for *Cryptosporidium* positive samples was not successful. The results suggest only a low risk for zoonotic transmission of *Giardia*.

In Chapter 3, the occurrence of intestinal parasites in different dog and cat populations in Crete, Greece was investigated. Besides, our objectives were to estimate the zoonotic potential and to identify risk factors associated with parasite infections. Faecal samples were collected from 879 shelter, household and shepherd dogs as well as 264 shelter and household cats. The samples were analysed using IFA for the detection of *Giardia* and *Cryptosporidium*, whereas PCR and sequencing were performed to evaluate the zoonotic potential of *Giardia* and *Cryptosporidium* positive samples. *Giardia* was the most prevalent parasite in all dog and cat populations except for shepherd dogs. In dogs, the overall prevalence

was 25.2% for *Giardia* spp and 5.9% for *Cryptosporidium* spp. In cats, the prevalence was 20.5% for *Giardia* spp and 9.5% for *Cryptosporidium* spp. Concerning the risk factors evaluated, there was a negative association between age and *Giardia* infection for dogs. Sequencing results revealed the presence of mainly animal-specific *G. duodenalis* assemblages C and D as well as an animal adapted multilocus genotype in dogs and assemblages F, C and BIV-like in cats, with only a limited number of (co-)infections with assemblage A. As for *Cryptosporidium*, the dog-specific *C. canis* and the pig-specific *C. scrofarum* were detected in dogs and the cat-specific *C. felis* was detected in cats. Genotyping results suggest a limited zoonotic risk of *Giardia* and *Cryptosporidium* infections from dogs and cats in Crete.

Giardia and *Cryptosporidium* infections in humans in Greece were studied in Chapter 4. In total, 876 stool samples were collected from 822 adults and 54 children. IFA detected 1.3% and 0.6% of *Giardia* and *Cryptosporidium* infected individuals. PCR followed by sequencing revealed the presence of *G. duodenalis* sub-assemblage AI, whereas sequencing was not successful for *Cryptosporidium* positive samples. A novel multilocus genotype of *G. duodenalis* was identified, which has not been described in humans or animals previously. Overall, the occurrence of *Giardia* and *Cryptosporidium* in humans was low and similar to previously published data. Based on the genotypes detected, there was no indication that animals were an important source of infection.

Data presented in this thesis are discussed and compared with similar recently published studies in Greece and beyond. Also, future perspectives and further investigations are suggested as for example to follow a different study design and/or improve diagnostics by adapting novel approaches, such as new generation molecular tools.

Please confirm your attendance before September 1
2018 to: Isabelle.Despeghel@UGent.be
