16th International Conference of the World Association for the Advancement of Veterinary Parasitology

Veterinary Parasitology into the 21st Century

PROGRAMME AND ABSTRACTS
Diagnosis of protozoal abortion in livestock

J.P. Dubey  
United States Department of Agriculture, Agricultural Research Service, Livestock and Poultry Sciences Institute, Parasite Biology and Epidemiology Laboratory, Building 1040, Rm. 103, BARC-East, Beltsville, Maryland 20705, USA.

Toxoplasma gondii, Neospora caninum, and certain species of Sarcocystis are apicomplexans known to cause abortion and neonatal mortality in livestock. The structure of the parasite, serological examination, detection of parasite DNA, immunohistochemical tests, or sometimes a combination of these, are needed for a definitive diagnosis. T. gondii and N. caninum tachyzoites are similar but their tissue cysts can be distinguished; N. caninum tissue cyst walls are 1-4 μm thick whereas the cyst wall of T. gondii is <1.0 μm thick. Serological examination of the dam is not diagnostic for abortion due to toxoplasmosis, neosporosis or sarcocystosis because of high prevalence of these parasites in the general population. Finding antibody to T. gondii or N. caninum in fetal fluid is diagnostic whereas a negative result is not; thus, not finding antibody does not rule out infection. Immunohistochemical tests using specific sera is the most practical method at the present time to detect parasites in fetal tissues. Specific primers are available to distinguish N. caninum from T. gondii by polymerase chain reaction (PCR). Sarcocystis organisms in fetal tissues can be distinguished by their structure, even by the light microscope. At present there are no reliable serological tests for the diagnosis of Sarcocystis-associated abortion.

Wildlife as a reservoir of trichinellosis in Slovak Republic

P. Dubinsky1, E. Dvorenčíková1, M. Váňová1, Š. Švéták2, I. Hoffmeier1  
1Parasitological Institute SAS, 040 01 Košice, Slovak Republic  
2University of Veterinary Medicine, 040 01 Košice, Slovak Republic

The wild boars have always been the source of human trichinellosis in the Slovak Republic. Therefore wild boars and red foxes were studied for their role in the maintenance of the sylvatic cycle of trichinellosis. The muscles were examined by a digestion method for the presence of Trichinella larvae. Serum from wild boars and thoracic transudate from red foxes were examined by ELISA for the presence of anti-Trichinella antibodies. Trichinella spp. larvae were most frequently detected in Ursus arctos (20 %), Canis lupus (7.1 %) and Vulpes vulpes (3.2 %). Other wild and domestic carnivores examined were found negative. Of wild carnivores, fox is the only animal occurring over the entire territory. Therefore 1349 samples were examined from foxes shot in 1994-1996 to check the efficacy of antirabies vaccination. Anti-Trichinella antibodies were detected in 23.9 % of the foxes examined. In the years 1954-1956 no trichinellosis was detected in wild boars. Currently, 0.22 % of wild boars examined by a digestion method were diagnosed with trichinellosis on the average. The prevalence of trichinellosis fluctuated over those years from 0.06 % to 0.45 %. Trichinellosis was serologically diagnosed in as many as 15.9 % of wild boar. From the epidemiological point of view, trichinellosis in the Slovak Republic circulates among wild boars or red foxes in 32 districts of 37 and only 5 districts are trichinellosis-free. This wildlife occurring over the entire territory, is the major maintainer of the natural sylvatic cycle of trichinellosis in the Slovak Republic.

The review of unresolved problems of taxonomy of Strongylidae of horses

G. M. Drojnoa, V. A. Kharchenko  

Almost 100 years ago the study of taxonomy of strongylids of horses was founded by A. Loos. At the present time more than 60 species are described, some large revisions were made. Nevertheless the number of questions is still needing studying.

Different points of view on relations ancestor-descendant between Cystocephalinae and Strongylinae are exist. This question is general for all Strongylidae - what shape of bucal capsule - round or cylindrical - is the pleomorphic character?

Though the opinion about Cystocephalinae of horses as monophyletic taxon is generally accepted, phylogenetic relations between Cystocephalinae and Strongylinae of horses and such helminths of other hosts ought to analyze once more. It is very tempting to pick the group of parasites of one host out to separate taxon. Strongylinae genera Trichiurnphosis, Craterostomum and possibly Bidentecostum having round bucal capsule, the same life cycle and morphology of IV stage larvae are very similar to Cystocephalinae. So the possibility of addition this group to the latter was discovered by A. Raelin (1923) many years ago.

Cystocephalinae is a good illustration for unification and dividing approaches in taxonomy. According to different authors here is from 10 to 14 genera accepted. The separation of genera Corynoscolex from Cystocephalinae is acknowledged yet. The authors concerned that genera Cystocephalos, Skyladodes, Trichiurnphosis, and some Paragastrothecum should be concerned like separate genera. Unification the former genera with Cystocephalos and the latter with Cystocephalos is only the contribution to tradition.

Last years some new species of strongylids of horses were described. Following our experience Asia and Africa have perspectives in this respect. At the same time genera Cylindrothysanos and species were described by Riesi (1939) from zebras are needed the redescription.

The authors suppose that studying of morphology of larvae stages of strongylids of horses and other hosts and analysis of their DNA with following working up of results by methods of characteristics could be promoted in solution of these problems.