



Prevalence of *Tritrichomonas foetus* infection in cats in France

BRIGUI Nora¹, HÉNAFF Maud², POLACK Bruno^{1,3}

¹ Unité de Parasitologie – Mycologie

² Unité de Médecine de l'Élevage et du Sport
³ INRA, AFSA, ENVA, UPVM, UMR 956 BIPAR

École Nationale Vétérinaire d'Alfort

7 avenue du Général de Gaulle F-94704 Maisons Alfort Cedex, France

Introduction

Tritrichomonas foetus, a flagellated protist, is the causative agent of feline trichomonosis. *T. foetus* colonizes the colon, resulting in chronic, large bowel diarrhoea mainly in young animals. *T. foetus* also can be cultured from the faeces of asymptomatic cats.

Treatment of feline trichomonosis is difficult and only two drugs have demonstrated an efficacy: - ronidazole⁵ but neurotoxicity have been described⁹ - tinidazole⁶. These two drugs have no approved use for cats.

T. foetus is the primary causative agent of bovine uro-genital trichomonosis. *T. foetus* is also observed in pigs but, in this species it is considered as non-pathogenic.

Recently *T. foetus* have been identified in men with meningoenophalitis⁹ and *pneumocystis pneumonia*². These data emphasize the zoonotic potential of *T. foetus*, although the existence of host-adapted *T. foetus* strains cannot be excluded².

In recent years, *T. foetus* have been observed in USA⁴, in UK⁷, in Germany¹⁰, and in Austria¹⁰.

In catteries, according to Goodis *et al.*⁴, there is an association between infection and the presence of diarrhoea, purebred cats, or high housing density.

To our knowledge, *T. foetus* have only been described in cats in France in 1925¹. The aim our study was to estimate the prevalence of *T. foetus* in French catteries and to identify risk factors for feline trichomonosis.

Materials and Methods

141 cats from 19 purebred breeding catteries were sampled in the Ile-de-France region (around Paris). The catteries were small family-sized breeding with between 2 and 40 cats. In each cattery, we sampled all diarrhoeic animals (soft faeces to chronic diarrhoea) and other cats were randomly drawn. A maximum of 12 cats were sampled per cattery. Cats were sampled with a sterile cotton swab which was inserted into the rectum and was gently moved in a circular motion against the mucosa.

Detection of *T. foetus* on rectal specimen was done by culture (immediately after sampling) using a commercially available system "In Pouch™ TF test" (BioMed Diagnostics, Oregon USA). The pouches were incubated at room temperature in dark for 15 days and microscopically examined every two days. This culture system doesn't permit the development of *Pentatrichomonas hominis* another trichomonad which is not pathogenic for cats³.



Figure 1 : "In Pouch™ TF test" device.



Figure 2 : specimen collection.



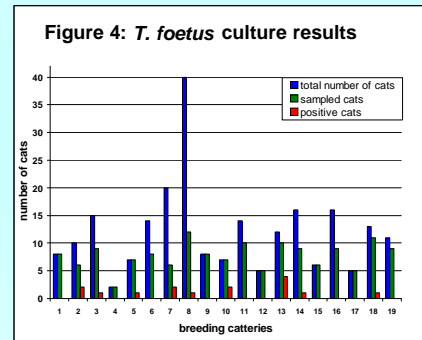
Figure 3 : Device inoculation immediately after sampling.

Results

• Fifteen cats (10.2 %) and 9 catteries (47 %) were found infected by *T. foetus*. The mean prevalence inside positive catteries was 21 % (fig.4).

• Out of the 43 diarrhoeic cats, 8 were infected (18.6 %) and only 7+/104 (6.7 %) among the other cats, fairly 3 fold less but this difference wasn't statistically significant (Yates' chi-square test)

• There were little more infected cats in young animals: 7+/54 (13.0 %) in animals under one-year old against 8+/93 (8.6 %) among older (not statistically significant).



Conclusion

• It is the second description of *T. foetus* in cats in France. The first description was done by Brumpt in 1925¹ in diarrhoeic cats.

• Our results are similar to those of Gunn-Moore *et al.*⁷ in UK where prevalence was 14 % among diarrhoeic cats but less than the results of Gookin *et al.*⁴ in USA, 31 % among cats and catteries. In addition, as Gookin *et al.*⁴, we observed that infection was more frequent in diarrhoeic cats.

References

- BRUMPT E (1925) Recherches morphologiques et expérimentales sur le *Trichomonas felis* parasite du chat et du chien. *Ann parasitol hum comp* 3, 239-51
- DUBOUCHER C *et al.* (2006) Case reports: Molecular identification of *Tritrichomonas foetus*-like organisms as coinfecting agents of human *pneumocystis pneumonia*. *J Clin Microbiol*, 44, 1165-8
- GOOKIN JL *et al.* (2003) Use of a commercially available culture system for diagnosis of *Tritrichomonas foetus* infection in cats. *JAVMA*, 222, 1376-9
- GOOKIN JL *et al.* (2004) Prevalence of and risk factors of feline *Tritrichomonas foetus* and *Giardia* infection. *J Clin Microbiol*, 42, 2707-10
- GOOKIN JL *et al.* (2006) Efficacy of ronidazole for treatment of feline *Tritrichomonas foetus* infection. *J Vet Intern Med*, 20, 536-43
- GOOKIN JL *et al.* (2007) Efficacy of tinidazole for treatment of cats experimentally infected with *Tritrichomonas foetus*. *J Vet Intern Med*, 21, 579
- GUNN-MOORE DA *et al.* (2007) Prevalence of *Tritrichomonas foetus* infection in cats with diarrhoea in the UK. *J Feline Med Surg*, 9, 214-21
- OKAMOTO S *et al.* (1998) *T. foetus* meningoenophalitis after allogenic peripheral blood stem cell transplantation. *Bone Marrow Transplant*, 21, 89-91
- ROSADO TW *et al.* (2007) Neurotoxicosis in four cats receiving ronidazole. *J Vet Intern Med*, 21, 328-31
- STEINER JM *et al.* (2007) Identification of *Tritrichomonas foetus* DNA in feces from cats with diarrhea from Germany and Austria. *J Vet Intern Med*, 21, 649

