

Experimental Infection of Cats with a Korean Isolate of *Tritrichomonas foetus* and Successful Chemotherapy with Ronidazole

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Purpose: The first clinical case of feline gastrointestinal *Tritrichomonas foetus* infection in Korea did not respond to the chemotherapy with metronidazole. The purpose of this study was therefore to evaluate the efficacy of ronidazole against experimentally-induced gastrointestinal *T. foetus* infection in cats.

Materials and Methods: Trophozoites of *T. foetus* were originally isolated from the rectum of a female Siamese cat from Yeonggwang-gun, South Korea using the InPouch™ TF-Feline medium (BioMed Diagnostics, USA). Trophozoites were successfully subcultured in the Diamond medium in the laboratory. Five to seven month-old female (n=2) and male (n=4) domestic Korean shorthair cats were used to experimentally infect *T. foetus* orally. Direct fecal examination of each cat, culture of rectal swab samples using the InPouch™ TF-Feline medium and a single-tube nested PCR test using a combination of TFITS-F/TFITS-R and TFR3/TFR4 primers were used for the detection of *T. foetus* from rectal swab samples. Cats were sedated with acepromazine (0.02 ml/kg, IM), Zoletil® (0.02 ml/kg, IM) and atropine (0.05 ml/kg, SC) before an oral inoculation of 2,000,000 *T. foetus* trophozoites using a feeding tube. After 7 days of the oral infection, rectal swab samples were collected and the microscopic examination of the samples suspended in saline was performed daily until motile trophozoites were observed. All six cats demonstrated trophozoites of *T. foetus* by day 20 post infection in the feces. From 30 days after inoculation, three cats were treated with ronidazole (Sigma-Aldrich) at 50 mg/kg q12h for 14 days and the remaining 3 cats received placebo. A direct smear and the in vitro culture of rectal swab samples were carried out once a week for 4 weeks.

Results: Trophozoites were not detected from cats in the treatment group either by the direct examination of fecal smears, by the in vitro culture using the InPouch™ TF-Feline medium or by the PCR assay from one week post treatment, while cats in the control group continuously exhibited motile trophozoites in the feces.

Conclusion: Cats experimentally infected with the Korean isolate of *T. foetus* were successfully treated with ronidazole at 50 mg/kg q12h for 14 days.

Key words: *Tritrichomonas foetus*, chemotherapy, ronidazole, Korea

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