



WINN FELINE FOUNDATION

For the Health and Well-being of All Cats

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EFFICACY OF A NEW TREATMENT FOR RONIDAZOLE RESISTANT T. FOETUS IN CATS

PROJECT STUDY: Efficacy of a new gold standard for treatment of cats with ronidazole-resistant *Tritrichomonas foetus* infection

Principal Investigators: Drs. Jody Gookin, Mark Papich, North Carolina State University

Interim progress report summary, W16-053

Tritrichomonas foetus (TF) is an infection that causes foul relapsing bouts of diarrhea in cats from every corner of the world. Only the drug, ronidazole, has been identified as effective in treating TF infection but an estimated 36% of cats fail to clinically benefit from the drug and others suffer from toxicity. There is a critical need to identify safer, more effective, and FDA-approved drugs to eradicate TF infection in cats. Strong preliminary data from our laboratory have identified a new drug that is 10 times more effective than ronidazole at killing feline TF. The aim of these studies is to examine the effectiveness of this drug for treatment of cats with TF infection and diarrhea and that failed prior treatment with ronidazole.

We have targeted inclusion of 12 client-owned cats with persistent TF infection and diarrhea despite prior treatment with ronidazole. Thus far we have treated 6 cats with 3 different doses of the drug (i.e. low, medium, and high). None of the cats cleared their TF infection. There have been minimal side effects reported in our extensive monitoring plan for these cats – no blood or urine abnormalities have been detected. However, mild weight loss due to a decrease in appetite during the 1-week treatment was observed in some of the cats.

Despite failure of the drug to clear TF infection in the treated cats, *we decided not to simply give up*. We looked for reasons why the drug may not be working. We first developed an assay that enabled us to measure the drug in the plasma, urine, and feces and then applied the assay to determine if the drug was actually making it to the colon and achieving effective drug concentrations there. We discovered that the drug was absorbed into the bloodstream but did not end up in the colon (feces) where the *T. foetus* organisms reside.

We have previously published an effective approach to targeting drugs to the colon of cats by coating the tablets with a polymer that requires degradation by the colonic bacteria in order to release the drug. We have recently obtained the hydraulic tablet press needed to reformulate the drug into the colon-targeted formulation. In the next few months, we will conduct studies to determine if the new formulation can achieve sufficient concentrations of drug in the colon as needed to kill TF. If favorable results are obtained, we will resume enrollment of cats into the study using the reformulated drug for their treatment.

Summary prepared for Winn ©2018

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