

THE EFFECTS OF AN ANTISERITONERGIC DRUG AND ANTIHISTAMINE
IN AN EXPERIMENTAL MODEL OF FELINE ASTHMA

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ABSTRACT

Use of Cyproheptadine, a serotonin antagonist, and cetirizine a selective histamine (H1) antagonist, in feline asthma has not been previously described. We tested the hypotheses 1) 5 mg of oral cetirizine would be adequately absorbed by the cat and would reach therapeutic levels 2) oral cyproheptadine and cetirizine would blunt eosinophilic airway inflammation in cats sensitized to BGA. For hypothesis 1, heparinized blood (2 mL) was collected from 9 cats at baseline, and at 0.5, 1, 2, 4, 6, 8, 10 and 24 hours after oral administration of 5 mg of cetirizine. A reverse-phase HPLC assay was developed. The plasma concentrations were analyzed with a compartmental pharmacokinetic model. For hypothesis 2, nine research cats were sensitized to BGA. Cats received 1 week treatments of placebo, cyproheptadine or cetirizine. On day 7 of each treatment period, cats were anesthetized for sample collection. BALF % eosinophils was determined. ELISAs were performed to evaluate blood and BALF immunoglobulin, IL-4 and IL-10, histamine concentrations. Plasma and BALF serotonin was measured using a fluorometric method. Results: hypothesis 1- Mean plasma concentrations of cetirizine were maintained above 0.85 mcg/mL for 24 hours; hypothesis 2- No significant difference between treatment groups was found with respect percent BALF eosinophils or the other measured immunologic variables. These results indicate that a single dose of cetirizine administered orally to cats produced high plasma concentrations compared to

what has been reported in humans. Administration of cyproheptadine and cetirizine did not decrease airway eosinophilia or alter other immune variables.