

Evaluation of Antibiotic Use in Shelter Cats with Upper Respiratory Infection

Project title: Evaluation of Antibiotic Use in Shelter Cats with Upper Respiratory Infection

Organization: University of New Hampshire

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Project Type: MIL Basic

Topics: Medicine, Surgery & Sterilization

Project Summary: This study evaluated the effect of antibiotic treatment in cats with signs of respiratory infection (URI) at the Cocheco Valley Humane Society in Dover, New Hampshire. The study included two parts: 1) Performing a prospective cohort study among cats that developed URI with a study group receiving antibiotics (n=38) and the control group receiving no antibiotics (n=22), and 2) Performing bacterial testing in the study population. The results showed no significant difference in both the severity and duration of URI among cats treated with and without antibiotics. 20 cats from the study population were tested for URI bacteria (Mycoplasma, Bordetella and/or Chlamydia), with 12 testing negative and the positive cases distributed evenly between treatment groups.

The objective of the project was: to compare the duration and severity of upper respiratory infection in cats treated with and without antibiotics.

Methods: The two-part study performed a prospective cohort study and bacterial testing in the study population. Cats that developed URI symptoms were placed into either a treatment group (n=38) or a control group that received no antibiotics (n=22). Cohorts were matched according to age and vaccination status. Disease severity was recorded daily using the shelter's existing scoring system. 20 cats from the study population were then tested with an aerobic bacterial culture and a Polymerase Chain Reaction (PCR). An additional 6 cats without URI were tested for respiratory bacteria and viruses via PCR. At the conclusion of data collection, duration and severity of disease was compared between groups using a t-test to assess for statistical significance.

Results:

- The average duration of URI for cats treated with and without antibiotics was 10.14 days and 10 days respectively, showing no significant difference between the two groups
- Of the 20 cats tested in the study group, PCR results showed the following distribution: Negative for bacteria = 12; mycoplasma positive = 7; chlamydia positive = 1; Bordetella positive = 1; Pneumovirus positive = 2 (some with combinations of bacteria)

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- The average severity score was 9.07 for the control group and 9.1 for the antibiotic-treated group, showing no significant difference between the two groups
- The additional 6 cats without URI all tested negative for bacteria, while 4 were positive for calicivirus

Conclusions: Antibiotic usage did not result in significant differences in this population. The number of cats tested for pathogens was small, making it difficult to evaluate statistically. These findings support the need for increased antibiotic stewardship in shelter cat populations and adds to the body of evidence calling for judicious antibiotic usage in both human and animal medicine. Future research could include comparing this data to historical incidences of URI at the shelter, evaluating the economic benefits of reduced antibiotic usage for the shelter and evaluating specifically which pathogens lead to the most severe illnesses.

Tags: *Shelter cats, URI, antibiotics, bacteria, virus, medicine*

Audience: Executive Leadership, Shelter/Rescue Staff & Volunteers, Public, Veterinary Team