Evaluation of pradofloxacin for the treatment of feline rhinitis

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Forty humane society cats with suspected bacterial upper respiratory infections (URIs) were studied in order to compare amoxycillin and pradofloxacin for treatment of rhinitis and describe common pathogens. Nasal discharges were collected prior to random placement into one of three treatment groups. Cats failing to initially respond were crossed to the alternate drug. Drug toxicity was not noted. The organisms most frequently isolated or amplified pre-treatment were feline herpesvirus-1 (75%), Mycoplasma species (62.5%), Bordetella species (47.5%), Staphylococcus species (12.5%) and Streptococcus species (10.0%). No differences in clinical scores between groups over time were noted. Overall response rates for amoxycillin at 22 mg/kg, q12 h for seven doses (10/15 cats; 67%), pradofloxacin at 5 mg/kg, q24 h for seven doses (11/13 cats; 85%), and pradofloxacin at 10 mg/kg, q24 h for seven doses (11/12 cats; 92%) were not statistically significant. Results suggest that pradofloxacin can be a safe, efficacious therapy for some cats with suspected bacterial URI.

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Rhinitis resulting in sneezing and nasal discharge is common in cats (Cape 1992, Allen et al 1999, Michiels et al 2003, Henderson et al 2004, Johnson et al 2005). Although infectious agents are generally present, other factors such as stress and immunocompromise contribute to the severity and duration of feline rhinitis. Because of this multifactorial nature, studies performed in strict laboratory environments may not have true clinical relevance. Feline rhinitis can have drastic consequences, especially in high density, high turnover settings like catteries, boarding facilities and humane shelters. Presence of either mildly or severely affected cats in these environments can result in poor public perception and rapid use of limited veterinary care resources. It is estimated that one in three cats is affected and one in five cats will be euthanized due to respiratory disease in some humane shelters (Scarlett and Fonhofer 2004). Because of this high morbidity and mortality, there is a great need for additional data that will facilitate practical management of this syndrome.

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A multitude of organisms have been cultured or amplified from the nose, pharynx, or nasal discharges of cats with rhinitis. Most of the agents can be detected in both healthy cats and cats with clinical signs of disease and so there is no universal agreement on which agents are primary pathogens. Most authors agree that feline herpesvirus-1 (FHV-1) and feline calicivirus (FCV) are the most common primary viral causes (Pedersen et al 2004, Bannasch and Foley 2005, Helps et al 2005, Veir et al 2007) and Mycoplasma species, Bordetella bronchiseptica and Chlamyphila felis are the most common primary bacterial causes (Foster et al 1998, Hoskins et al 1998, Binns et al 1999, Speakman et al 1999, Sykes 1999, Welsh 2000, Sykes 2001, Chandler and Lappin 2002, Foley et al 2002, Pedersen et al 2004, Helps et al 2005, Bannasch and Foley 2005, Johnson et al 2005, Veir et al 2007, Hartmann et al 2008). Other bacteria commonly grown include Pasteurella species, Staphylococcus species, Streptococcus species, Pseudomonas species, and anaerobes (Stein and Lappin 2001, Johnson et al 2005, Veir et al 2007). Regardless of whether the bacterial infection is primary or secondary, in many cases veterinarians administer empirically chosen antibiotics (Boothe 1997,...
Olsen 2000). Secondary infections with commensal anaerobes and Pasteurella species are frequently successfully treated with amoxicillin or first generation cephalosporins. However, Mycoplasma species, B bronchiseptica, C felis and other Gram-negative bacteria are often resistant to β-lactams. For example, amoxicillin was prescribed to 18 shelter cats suspected to have bacterial rhinitis based on the character of their nasal discharge (Ruch-Gallie et al in press). Of these 18 cases, eight resolved their clinical signs and 10 were switched to azithromycin, an antibiotic with an enhanced spectrum against Mycoplasma species. Of these 10 cats, five had resolution of disease, suggesting that their infections were resistant to amoxicillin. Azithromycin is expensive and induces diarrhea in some cats (Hunter et al 1995). Fluoroquinolones have a similar spectrum to azithromycin for treatment of bacterial rhinitis, but are comparatively inexpensive and safe when given at approved dosages (Brown 1996, Dossin et al 1998). In a study of the aerobic bacterial isolates from cats with suspected rhinitis, 91% were susceptible to enrofloxacin which was the highest percentage susceptibility of any drug (Stein and Lappin 2001).

Pradofloxacin is an 8-cyano-fluoroquinolone that exerts its primary bactericidal effects by interaction with enzymes responsible for major DNA functions (Wetzstein 2005). Efficacy of pradofloxacin has been evaluated against first-step fluoroquinolone resistant strains of Escherichia coli and Staphylococcus aureus, suggesting that at appropriate doses, pradofloxacin may have potential in treating and limiting antimicrobial resistant bacteria. Pradofloxacin has a great affinity for two different targets within bacterial DNA which may account for its decreased resistance profile (Wetzstein 2005, Heisig 2006, Stephan 2006, Silley 2006). In addition, pradofloxacin has an enhanced spectrum against Mycoplasma species and anaerobic bacteria compared to other fluoroquinolones and so the drug could be effective for the treatment of bacterial rhinitis in cats. Although fluoroquinolones like enrofloxacin and orbifloxacin have been linked to retinal degeneration in several species, particularly cats, the safety margin of pradofloxacin in cats appears very high. A recent study used Optical Coherence Tomography to evaluate cats treated with pradofloxacin at 10 times the recommended dosage and no changes in retinal thickness were noted when compared to controls (Wegener 2006). In the same report, cats administered enrofloxacin at six times the recommended dosage showed significant retinal thinning (Wegener 2006).

The objectives of this study were two-fold; to identify organisms associated with feline rhinitis in a natural setting and to compare the efficacy and safety of pradofloxacin and amoxicillin for the treatment of suspected bacterial rhinitis in cats residing in a humane society in north-central Colorado.

Materials and methods

Cats

The study was performed in a non-profit humane society serving north-central Colorado. The humane society manages approximately 20 cats with suspected bacterial rhinitis monthly. The study was conducted following the approval of a campus-wide Animal Care and Use Committee and the humane society’s governing Board of Directors.

Experimental design

The humane society tests all adoptable cats for Feline Leukemia Virus (FeLV) antigen and Feline Immunodeficiency Virus (FIV) antibody (FeLV/ FIV SNAP Combo, IDEXX Laboratories, Portland, ME); positive cats were excluded from the study. Additional exclusion criteria included obvious facial deformity consistent with neoplasia or C neoformans infection, evidence of granulomatous disease consistent with C neoformans infection, and evidence of cleft palate or oral nasal fistula on physical examination. A clinical score sheet was designed prior to initiation of the project and was applied to each cat by one of the authors (MS) on admission to the study. Fever (102.5–103.5°F = 1 pt; 103.6–104.5°F = 2 pt; >104.6°F = 3 pt), sneezing and nasal discharge (serous = 1 pt; mucopurulent = 2 pt; bloody = 3 pt), systemic signs (anorexia = 1 pt; depression = 1 pt; dehydration = 1 pt), ocular discharge (serous = 1 pt; mucopurulent = 2 pt; bloody = 3 pt), ocular ulcers (4 pt), oral cavity signs (salivating = 1 pt; single ulcer = 2 pt; multiple ulcers = 3 pt; bleeding ulcer = 4 pt), and death (6 pt) were scored daily and used to determine a total daily score.

To qualify for entry, cats had to have at least moderate sneezing or coughing and mucopurulent nasal discharge with a total minimum clinical score of 5 (maximum = 26). Cats were randomly assigned to one of three treatment groups: amoxicillin oral suspension at 22 mg/kg, PO, q12 h for 7 days; pradofloxacin oral suspension at 5 mg/kg, PO, q24 h for 7 days; or pradofloxacin oral
suspension at 10 mg/kg, PO, q24 h for 7 days. While amoxycillin has been labeled for once daily use, many clinicians in the USA use the drug twice daily for the treatment of upper respiratory infections (URIs) in cats and so this protocol was chosen. Medications were administered by the trained staff of the shelter. Daily clinical scores were determined for each cat by a person masked to the treatment groups. Two people that were trained at the same time remained the clinical ‘scorer’ throughout the study to minimize any subjective scoring differences. All cats were scored prior to treatment, daily from days 0 to 6, and again on day 9 to assess for relapse.

Decrease of the clinical score to $\leq 3$ by day 6 was considered a positive response to treatment but cats were scored again on day 9 to rule out rapid relapse. Cats that initially responded and then returned to a score of $\geq 5$ by day 9 were considered relapses and were re-cultured and switched to an alternate treatment protocol. Cats that were administered amoxycillin initially were administered pradofloxacin at 5 mg/kg or pradofloxacin at 10 mg/kg using the 7-day protocol. Cats that were administered either of the pradofloxacin protocols initially were administered amoxycillin. After completion of the first 9-day study period, cats that responded to the initial treatment were adopted. Cats that failed to respond to treatment by day 6 were cultured as described to assess for antimicrobial resistance on day 7, switched to the alternate antimicrobial drug, and followed for 9 days with the same monitoring protocol. Cats that relapsed were re-cultured, started on the alternate treatment protocol and monitored for another 9 days. Assisted feeding and fluid administration were the only supportive therapies allowed during the study period.

Sample collection and assay

Before treatment initiation, nasal discharges from each cat were collected on to three sterile cotton swabs; one swab was placed into solid transport media for bacterial culture (BBL CultureSwab Plus, Becton Dickinson Microbiology Systems, Sparks, MD, USA), one swab was placed into Amies charcoal media for Mycoplasma species culture, and one swab was placed into 1 ml sterile phosphate buffered saline solution (PBS), allowed to equilibrate for 2–3 h at room temperature and then stored at $-70^\circ$C until assayed in the polymerase chain reaction (PCR) assays. Aerobic and anaerobic bacterial culture, aerobic bacterial antimicrobial susceptibility testing, Mycoplasma species culture, FCV reverse transcriptase-PCR (RT-PCR) assay (Radford et al 1997), FHV-1 PCR assay (Burgesser et al 1999), and C felis PCR assay (Sykes et al 1997) were performed on all samples.

Statistical evaluation

The number of cats that resolved after administration of the first antibiotic was compared by Fisher’s exact test. Analysis of variance appropriate for a repeated measures experiment was used to evaluate the effects of treatment group over time on individual and total clinical scores (The MIXED procedure, SAS Institute, Cary NC, version 9). Treatment group, time and the group by time interaction were evaluated as fixed effects in the statistical model. If the group by time interaction was statistically significant, within time treatment effects were evaluated. Additionally, the influences of age, sex, FHV-1 status and Mycoplasma species status on treatment effects were evaluated. The statistical model included treatment group, time, the covariate age, both two-way interactions and the three-way interaction. Four separate models were evaluated due to the small sample size. Where interactions were statistically significant, within covariate treatment effects were evaluated. Differences were deemed statistically significant if $P < 0.05$.

Results

Cats

Of the 40 cats entered into the study, six were male, 11 male neutered, nine female, 13 female spayed. One cat’s sex was not determined. Ages ranged from 6 months to 9 years (mean = 3.3 years). There were no adverse events recorded for any cat administered either drug during the course of the study.

Pre-treatment organism identification

Out of the 40 cats sampled, 36 (90%) were positive for either Mycoplasma or other bacteria species. Prior to treatment, the most frequently detected organisms were FHV-1 (75%), Mycoplasma species (62.5%), Bordetella species (47.5%), Staphylococcus species (12.5%), and Streptococcus species (10.0%). At least one organism was grown or amplified from each cat; distributions are listed
in Table 1. Calicivirus RNA and *C. felis* DNA were not amplified from any cat.

**Treatment responses**

The initial treatment was amoxycillin for 15 cats, pradofloxacin at 5 mg/kg for 13 cats and pradofloxacin at 10 mg/kg for 12 cats. Of the amoxycillin-treated cats, clinical signs resolved in 10 cats (66.7%) and five cats were switched to pradofloxacin (10 mg/kg for one cat and 5 mg/kg for four cats) after which clinical signs resolved in four (Table 2). Of the pradofloxacin-treated cats (5 mg/kg), clinical signs resolved in 10 cats (76.9%) and three cats were switched to amoxycillin after which clinical signs resolved in all three. Of the pradofloxacin-treated cats (10 mg/kg), clinical signs resolved in 11 cats (91.7%) and one cat was switched to amoxycillin after which clinical signs resolved. Overall, 73.7% of amoxycillin-treated cats resolved and 83.3% of pradofloxacin-treated cats resolved. However, differences in response rates between groups were not statistically different (*P* = 0.2919).

Due to an apparent lack of diversity in outcomes among the groups, SAS could not estimate *P*-values for the factors in the ‘main’ model (which included group, time, and the group by time interaction) for fever score, sneezing, depression, dehydration, ocular disease, ocular ulcer, and oral ulcers. Temperature, anorexia score, and the total score (Fig 1) on a daily basis were successfully analyzed but no significant treatment effect between groups was detected. The addition of sex, age, FHV-1 or *Mycoplasma* status to the model had no effect on the outcome.

**Post-treatment organism identification**

Results from the nine cats that failed to respond to initial therapy are summarized by treatment group and organism in Table 2.

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**Table 1. Distribution of organisms detected in nasal discharges from cats with suspected bacterial rhinitis prior to administration of amoxycillin or pradofloxacin oral suspension**

<table>
<thead>
<tr>
<th>Organism groupings</th>
<th>Number positive (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHV-1 positive, <em>Mycoplasma</em> species positive, bacteria positive</td>
<td>15/40 (37.5%)</td>
</tr>
<tr>
<td>FHV-1 positive, <em>Mycoplasma</em> species negative, bacteria positive</td>
<td>10/40 (25%)</td>
</tr>
<tr>
<td>FHV-1 negative, <em>Mycoplasma</em> species positive, bacteria positive</td>
<td>6/40 (15%)</td>
</tr>
<tr>
<td>FHV-1 positive, <em>Mycoplasma</em> species negative, bacteria negative</td>
<td>3/40 (7.5%)</td>
</tr>
<tr>
<td>FHV-1 negative, <em>Mycoplasma</em> species positive, bacteria negative</td>
<td>2/40 (5%)</td>
</tr>
<tr>
<td>FHV-1 positive, <em>Mycoplasma</em> species positive, bacteria negative</td>
<td>2/40 (5%)</td>
</tr>
<tr>
<td>FHV-1 negative, <em>Mycoplasma</em> species negative, bacteria negative</td>
<td>1/40 (2.5%)</td>
</tr>
<tr>
<td>FHV-1 negative, <em>Mycoplasma</em> species negative, bacteria positive</td>
<td>1/40 (2.5%)</td>
</tr>
</tbody>
</table>

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**Discussion**

In this trial, 40 cats with clinical signs of acute bacterial rhinitis, as determined by an experienced shelter veterinarian (MS), were selected to characterize the viral and bacterial carriage rates and treatment responses to amoxycillin or pradofloxacin. Overall, 75% of cats were FHV-1 PCR positive and FCV was not isolated from any cat. This is consistent with data recently reported in a prevalence study from the same humane society as well as studies from other large cat populations, which found FHV-1 prevalence rates to be higher than those of FCV (Pedersen et al 2004, Bannasch and Foley 2005, Helps et al 2005, Veir et al 2007). Agent prevalence rates were also determined in this humane society 2 years previously using identical diagnostic methods in the same laboratory (Veir et al in press). When the results of the studies are compared, there were some major differences. For example, in contrast to the results of the current study, *Bordetella* species infections were uncommon and *Mycoplasma* species was not found singularly in a cat (Veir et al 2007). These differences may reflect the complex interactions of environmental, management, and population factors that contribute to feline upper respiratory disease. When making antimicrobial treatment choices, veterinarians should be aware that infectious agent prevalence rates are never static and that cat populations are susceptible to a web of causal factors.

The majority of FHV-1 positive cats had a simultaneous bacterial infection, but 7.5% were positive for only FHV-1. Current methodologies for FHV-1 detection are not able to distinguish between field strain virus and modified live vaccine virus strains (which were in use by the study shelter) and so the detection of FHV-1 does not definitely prove a relationship to...
disease (Maggs and Clarke 2005). However, it is of note that a small percentage of FHV-1 positive, clinically ill cats had no bacteria isolated which suggests that FHV-1 can be viewed as a primary cause of rhinitis. This finding also emphasizes that the diagnosis of bacterial rhinitis can be difficult to make clinically.

In this study, it was surprising that no cats tested positive via RT-PCR assay for FCV or PCR assay for C felis. However, similar low incidence was noted in other studies of cats with respiratory disease (Johnson et al 2005, Veir et al 2007). This shelter may have created bias against cats with FCV and/or C felis by denying cats with obvious ulcerative lesions, severe conjunctivitis or other unusual physical examination findings entry to the upper respiratory treatment ward due to limited treatment capacity. Some humane society veterinarians intentionally attempt to screen out animals suspected to be infected with FCV or C felis, as both agents can be shed for long periods of time following recovery from clinical signs and the associated illness associated with these pathogens can be more difficult to manage in populations. In some experimental studies, cats continue to shed FCV for at least 30–75 days after clinical recovery (Gaskell and Dawson 1998). However, because it is not

**Table 2. Distribution of infectious agents in cats that failed the initial antibiotic (drug 1) used for the treatment of suspected bacterial rhinitis**

<table>
<thead>
<tr>
<th>Cat</th>
<th>Drug 1</th>
<th>Drug 2</th>
<th>Result</th>
<th>Culture/PCR 1</th>
<th>Culture/PCR 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Amox</td>
<td>Prado 5</td>
<td>Resolved</td>
<td>Mycoplasma, Moraxella, FHV-1</td>
<td>Mycoplasma, Bordetella</td>
</tr>
<tr>
<td>8</td>
<td>Amox</td>
<td>Prado 10</td>
<td>Resolved</td>
<td>Mycoplasma, Bordetella</td>
<td>Mycoplasma, Bordetella, Clostridium, Pasteurella, Enterococcus</td>
</tr>
<tr>
<td>10</td>
<td>Amox</td>
<td>Prado 5</td>
<td>No</td>
<td>Mycoplasma, Bordetella, Streptococcus, FHV-1</td>
<td>Mycoplasma, Bordetella, Streptococcus</td>
</tr>
<tr>
<td>15</td>
<td>Amox</td>
<td>Prado 5</td>
<td>Resolved</td>
<td>No growth bacteria; FHV-1</td>
<td>Mycoplasma, Porphyromonas gingivalis, FHV-1</td>
</tr>
<tr>
<td>25</td>
<td>Amox</td>
<td>Prado 5</td>
<td>Resolved</td>
<td>Bordetella</td>
<td>Bordetella</td>
</tr>
<tr>
<td>3</td>
<td>Prado 5</td>
<td>Amox</td>
<td>Resolved</td>
<td>Staphylococcus, Pasteurella, FHV-1</td>
<td>Mycoplasma, Bordetella</td>
</tr>
<tr>
<td>19</td>
<td>Prado 5</td>
<td>Amox</td>
<td>Resolved</td>
<td>Mycoplasma, Staphylococcus, FHV-1</td>
<td>Mycoplasma, Actinomyces, FHV-1</td>
</tr>
<tr>
<td>39</td>
<td>Prado 5</td>
<td>Amox</td>
<td>Resolved</td>
<td>Mycoplasma, FHV-1</td>
<td>Mycoplasma, FHV-1</td>
</tr>
<tr>
<td>6</td>
<td>Prado 10</td>
<td>Amox</td>
<td>Resolved</td>
<td>Mycoplasma, Fusobacterium</td>
<td>Mycoplasma, FHV-1</td>
</tr>
</tbody>
</table>

Amox = amoxycillin; Prado 5 = pradofloxacin at 5 mg/kg, PO; Prado 10 = pradofloxacin at 10 mg/kg, PO. Culture/PCR 1 was performed on day 0 and culture/PCR 2 was performed on day 7.

**Fig 1.** Mean total clinical scores over time in cats with suspected bacterial rhinitis. There were no statistically significant differences among groups. Cats were randomly assigned to one of three treatment groups: amoxycillin at 22 mg/kg, PO, q12 h for 7 days; pradofloxacin oral suspension at 5 mg/kg, PO, q24 h for 7 days; or pradofloxacin oral suspension at 10 mg/kg, PO, q24 h for 7 days.
possible to identify a causative agent from clinical signs, one might expect at least some infected cats to be present in most populations. For example, in one study, the rate of detection of FCV in normal cats was found to be as high as 22% (Binns et al 2000). Confirming test validity with a second methodology may be undertaken in the future to further exclude the possibility of false negative results.

The most common bacterial isolates were Mycoplasma species (62.5%), Bordetella species (47.5%), Staphylococcus species (12.5%), and Streptococcus species (10.0%). The Mycoplasma species prevalence rate was similar to that detected on oral swabs collected from cats with URI or conjunctivitis (25 of 39 cats; 62%) in Germany (Hartmann et al 2008). Mycoplasma and Bordetella species can be either primary or secondary causes of rhinitis in cats, and within the antimicrobial spectrum of pradofloxacin but not amoxycillin. Staphylococcus and Streptococcus species are typically normal flora of the feline upper respiratory tract but can be associated with disease in the presence of other primary respiratory diseases and are within the antimicrobial spectrum of both antibiotics (Ford 1993).

Thus, in this study, pradofloxacin appeared to be a suitable drug to use empirically for treatment of the most common bacterial isolates. In another recent study, the most common bacteria isolated besides Staphylococcus and Streptococcus species were Enterobacteriaceae and Pasteurella species, which also fall within the antimicrobial spectrum of amoxycillin and pradofloxacin (Binns et al 1999).

Because the interplay of many factors and several infectious agents is likely involved in the pathogenesis of URI, determining a primary role for either a viral or bacterial agent in a natural setting is difficult. The nasal cavities of both normal cats and those affected with rhinitis have been shown to host a wide variety of microorganisms, and so a causal relationship between an individual isolate and disease cannot be assumed (Johnson et al 2005, Veir et al 2007). While a primary role has been experimentally documented for FHV-1, FCV, Bordetella bronchiseptica, and Chlamydia felis, it has not yet been shown via Koch’s postulates that Mycoplasma species induce primary upper respiratory disease in cats. In one study that used both clinical and control cats, aerobic bacteria were prevalent in both populations, but anaerobes and Mycoplasma species were only isolated from the clinically ill cats (Johnson et al 2005). In this report, 5% of the cats had only Mycoplasma species isolated during an episode of clinical upper respiratory disease. This may indicate that the bacterial component of feline URIs can originate from a primary infection with Mycoplasma species. Further work is necessary to scientifically prove this hypothesis.

Response rates during primary therapy with amoxycillin (67%), pradofloxacin at 5 mg/kg (76.9%) and pradofloxacin at 10 mg/kg (92%) and combined clinical response rates during administration of amoxycillin (73.7%) or pradofloxacin (83.3%) were not significantly different between groups. This is similar to results seen in a study comparing efficacy of marbofloxacin to amoxycillin–clavulanic acid in the treatment of URI, where response rates of 87.8 and 77.8%, respectively, were detected (Dossin et al 1998).

In another study, both doxycycline (5 mg/kg, PO, q12 h for 42 days) and pradofloxacin (5 mg/kg, PO, q24 h for 42 days) lead to clinical resolution of disease in cats with URI or conjunctivitis and all Mycoplasma species PCR positive cats became negative by day 42 of treatment (Hartmann et al 2008). It is possible that the clinical signs of disease resolved spontaneously in these studies. However, in the study described here, our clinical impression was that there was a treatment effect for both drugs. Because this was a pilot study, the initial sample size chosen was an estimate. A power calculation based on these response rates was conducted and if the numerical trends for amoxycillin (67%) and pradofloxacin at 10 mg/kg (92%) had continued, a statistical difference between groups would have been detected if at least 46 cats per group had been included.

In this study, nine cats failed the primary antibiotic and were switched to the alternate drug, after which clinical signs resolved in all cases but one. Of the nine initial failures, Mycoplasma species, B bronchiseptica, or both were isolated from either an initial culture or the culture following initial drug therapy, even in cats receiving an appropriate antibiotic based on predicted response or susceptibility patterns. These results emphasize that even appropriate antimicrobial therapy does not always eliminate these bacteria from the nasal cavity and that treated cats may still continue to shed the bacteria into the environment. These results duplicate those of others that have shown that B bronchiseptica can continue to be cultured for months following resolution of clinical signs after appropriate clinical therapy (Coutts et al 1996).

The need for further study on the management of URIs in facilities that house multiple cats is
unquestionable, as this disease still is a major cause of mortality in shelters worldwide. Veterinarians should understand that antimicrobials alone cannot be assumed to eradicate infectious organisms, and when possible, good overall management and isolation of sick and recovering animals may lead to a decreased prevalence. Because organisms can be isolated and amplified from healthy and from recovering animals, culture or PCR results do not prove a causal relationship to disease. When making empirical therapeutic choices, especially in the shelter setting where time and finances are constrained, having a clear understanding of organism prevalence, and the risks and benefits of available therapy is vital. Facilities should remain cognizant of the judicious use of antibiotics. While a third generation fluoroquinolone may not always be a necessary or appropriate empirical first choice, drugs like pradofloxacin can play an important role in the management of suspected feline bacterial rhinitis, especially if Mycoplasma species or B bronchiseptica infections are suspected. No adverse drug effects were reported to either pradofloxacin or amoxycillin in this study. Thus, either drug could be considered suitable for the empirical treatment of this condition.

References


