It's Not “Just a Cold”
How to Identify, Treat, and Prevent Feline URI in Your Shelter

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Background Information

- Sentinel of “shelter health”
- Multiple infectious agents often present
- Endemic in most (all?) shelters
Causes

Infectious agents
- Fomite spread, lack of isolation, overcrowding increasing dose

Stress
- Overcrowding, cleaning stress, poor ventilation, small kernels, poor nutrition, long LOS

Improper Disinfection
- Disinfectants used, contact times not followed, bowls/litterboxes and cage door cleaning

Infectious Agents

- Diagnostics generally not performed with URI
  - Multiple infectious agents often found
  - High incidence of shedding/carriers
    - Isolation not practical
  - Doesn’t generally change management
  - Expensive
  - “Detection of FHV-1 by any technique does not prove a disease association, and failure to detect FHV-1 does not exclude diagnosis.”
Infectious Agents

- Feline Herpesvirus-1
  - DNA virus that only infects cats
  - Virus shed in oral, nasal and ocular secretions
  - High percentage of latent carriers
  - About 45% begin reshedding 4-11 days post-stress
    - One of largest sources of transmission
  - Classic signs are depression, sneezing, conjunctivitis, nasal and ocular discharge

- Feline Calicivirus
  - RNA virus that primarily infects cats
  - Highly contagious via direct contact, fomites, or droplet
  - Environmentally stable
  - Recovered cats shed virus long-term
  - Signs include nasal discharge, conjunctivitis, oral lesions and ulcerations (stomatitis)
Infectious Agents

- Mycoplasma felis
  - Cell wall deficient bacteria
  - Transmission via aerosol or direct contact
  - Primary vs. opportunistic?

Other Common Agents

- Chlamyphila felis
  - Primarily causes conjunctivitis
- Bordatella bronchiseptica
  - Can be a primary pathogen
  - Dog → Cat?
Infectious Agents

- Necropsy Findings
- Rhinitis
- Conjunctivitis
- Tonsillitis
- Pharyngitis
- Pneumonia
- Thoracic effusion
- Bronchiolar lymphoid hyperplasia
Stress

- Changing kennels
- Noise (esp barking)
- Most severe when not able to employ coping strategies
  - Hiding
  - Social companionship
  - Mental stimulation
- Causes reactivation of latent herpesvirus
- Lowers immune response

Stress

- Overcrowding
  - Increases agent concentration
  - Lower air quality
  - Compromises husbandry
  - Housing concerns
  - More animal contact
Identifying Upper Respiratory Infections

- Classic Signs
  - Ocular discharge
  - Nasal discharge
  - Sneezing

- Subtle symptoms
  - Everted third eyelids
  - “Raspy” meow or purr
  - Lethargy
  - Inappetence
  - Oral ulcers
  - Ocular ulcers
  - Lameness (FCV)
  - Gingivitis and stomatitis
  - Fever
  - Drooling
  - Coughing
  - Enlarged submandibular lymph nodes
Third Eyelids Elevated

Ocular and/or Nasal Discharge
Ocular Ulcers

Oral Ulcerations
Goals:

- Isolate ill cats ASAP
  - Prevent spread of disease
- Treat those that need treatment
- Maintain a healthier cat population
- **Reduce Suffering**
- **Reduce Euthanasia**

Treatment

- Individualized
  - Per Cat
    - Adoptability
    - Age
    - Other health issues
    - Behavior
  - Per Shelter
    - Isolation?
    - Budget
    - Live Release Rate
    - Staff to treat/clean
Treatment

- Protocols!!
  - More objective and less subjective
  - Prevent overuse of antibiotics
  - All staff needs trained and to understand importance
  - Compassion fatigue can make this difficult

- Prevention is the goal

### Category | Clinical signs | Probable Interpretation | Treatment
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1a. Clear Discharge  
- Clear discharge from eyes or nose, sneezing, squinting  
Mild viral URI  
Isolate. Monitor appetite and hydration status daily.

1b. Clear Discharge  
- Category 1a. -AND- Fever, dehydration, anorexia, oral ulcers, congestion, depressed  
Moderate to severe viral URI  
As for 1a. -AND-  
Administer additional treatment and supportive care as described below.

2a. URI with colored discharge  
- Category 1a. -AND- Green, brown, yellow or bloody oculonasal discharge  
Viral URI with secondary bacterial rhinitis and/or ocular infection  
Doxycycline\(^1\) or Minocycline\(^2\) mg/kg q24h PO until resolution of clinical signs  
Re-evaluate at 3-5 days, if no improvement, see 2b.  
If there is improvement but relapse after discontinuing antibiotic, consider testing for Chlamydia. If Chlamydia confirmed or suspected, treat with doxycycline for 4-6 weeks. Okay for adoption when clinical signs resolve.  
**NOTE:** For compounding (e.g. mixing with some liquid vehicle), keep in mind that doxycycline and minocycline are highly unstable drugs and will degrade quickly and rapidly lose its potency (particularly in UV light, room temperature, with any cations). The capsules could be opened and diluted just prior to administration.

2b. URI with colored discharge, fails to respond  
- Category 1b. -AND- Green, brown, yellow or bloody oculonasal discharge  
-AND- Fails to respond to doxycycline  
Viral URI with moderate to severe secondary bacterial oculonasal infection  
Euthanasia should be considered if another option does not exist. Other options would include: 1. Transfer to rescue. 2. Transfer to an adopter that could handle medical care and expenses outside of the shelter. 3. Any other option and takes the cat out of the shelter into a lower stress environment and removes responsibility of care from the shelter.

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\(^1\) In all cases, cats should be monitored at least daily by staff and examined by a veterinarian every 2-3 days or more frequently as needed.

\(^2\) Doxycycline or minocycline tablets can cause esophagitis and subsequent esophageal strictures in cats and, if used, must be flushed with at least 6 cc of liquid. Liquid doxycycline formulations are recommended and can be obtained through compounding pharmacies, or compounded in-house. Citric acid-based liquids and vitamin/mineral supplements should not be used as compounding agents, as they can negatively affect the availability of tetracyclines and the breakdown products can be toxic when mixed with citric acid. All compounded doxycycline should be stored in light proof containers and used within 7 days.

Prevention
The Hallmark of Herd Health Management

- Overcrowding thought to be primary cause
  - Overcrowding lowers immune response (stress)
  - Increases agent concentration
Prevention

- Adoption-driven Capacity
  - Target LOS X daily AV # adoptions
- Capacity for Care
  - Amount of animals organization can humanely care for—allowing for five freedoms.
  - Lowers stress for humans and animals.

Adoption-Driven Capacity Exercise

- Determine Target LOS
- Determine daily average number of adoptions
  - Monthly vs annual numbers
    - Example: July 62 adoptions in 31 days
- Target LOS X daily adoptions=
  - 20
Prevention

- Intake Exams
  - Teach intake staff to recognize symptoms
  - Isolate immediately
  - MLV SC FVRCP (vaccinate)
  - Foster kitten program

- Increase cage size
  - Directly related to URI/euthanasia rates

- Hiding spots

- Portals
  - Happy cats are healthy cats.
  - Allows for spot cleaning
Prevention

- Daily Rounds
  - Team approach
  - Look for medical/behavioral issues
Prevention

- New disinfection protocols
  - Accelerated hydrogen peroxide
  - Follow contact times
  - Quats not effective against calcivirus
- New cleaning protocols
  - Spot cleaning
  - Define traffic pattern
  - All in-all out group housing

Monitor

- Disease surveillance
  - Define disease
  - Define shelter-acquired vs intake
Take Home Points

- You are not saving more cats by housing more cats.
- Happy cats are healthy cats.
- Big kennels save lives.
- Length of stay is vitally important.
- Shelter data is worth the time it takes to track.
- Antibiotics do not treat viral infections.
- Notice that I didn’t mention lysine.....

References

- www.sheltermedicine.com
Questions????