Implementing Antimicrobial Stewardship in Companion Animal Practice

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A Brief History

• Bacterial infections are often deadly (1920s)
• Penicillin is discovered (1928)
• Predictions that infectious disease will soon be conquered (1960s)
• Warning by WHO that “post-antibiotic era” is near (2014)

Two Overarching Questions

• Why is antibiotic resistance an important issue for my practice?
• How can I create an environment of proactive and responsible use of antibiotics?
Introduction

• There is a dilemma in using antibiotics:

Antibiotics cure bacterial infections

Antibiotics put pressure on bacteria that selects for resistance

Antibiotics cure bacterial infections

• We rely on antibiotics to help reduce infection and disease
• Patients’ lives are improved
• Clients expect us to use antibiotics for their pets

Antibiotics put pressure on bacteria that selects for antibiotic resistance
Development of Antibiotic Resistance

MDR Infections in Companion Animals
- Methicillin-resistant Staphylococcus pseudointermedius (MRSP)
- Escherichia coli producing extended-spectrum β-lactamase (ESBL)
- Pseudomonas aeruginosa
- Klebsiella
- Others

Results of MDR Infections
- Psychological impact on client
- Possible transmission to other animals or humans
- Potential difficulty tracing infection
- Potential for toxicity to patient
- Potential for greater cost to client
- Possibility of therapeutic failure/euthanasia
- Possible transmission to other animals or humans
What can we do as a profession?

- Acknowledge our role
- Accept responsibility for being part of the solution
- Be proactive
  - Adopt “best practices”
  - Become educated and educate others
  - Continually improve

What is being done?

- Task Force for Antimicrobial Stewardship in Companion Animal Practice
  - Gain understanding of issues
  - Create recommendations
  - Compile resources
  - Provide guidance around stewardship
TF Activities
- Surveys
  - Practicing veterinarians
  - Laboratories
- Specific recommendations
- Educational programs and materials
- Compilation of resources
- Core elements
- Antibiograms

AVMA Task force Survey
Veterinarians concerns about antibiotics

AVMA Task Force Survey
Barriers to Appropriate Antibiotic Prescribing
Addressing the Issues

How can we create a voluntary culture of forward thinking antibiotic use within the companion animal veterinary community?

Antimicrobial Stewardship

Antimicrobial stewardship is a coordinated program that promotes the appropriate use of antimicrobials (including antibiotics), improves patient outcomes, reduces microbial resistance, and decreases the spread of infections caused by multidrug-resistant organisms.

~Association for Professionals in Infection Control and Epidemiology

Antimicrobial Stewardship Program (ASP)

- Active, dynamic process
- Multi-faceted approach
- Improved antimicrobial use
- Goal: maintain clinical efficacy of antibiotics
Creating an Antimicrobial Stewardship Program

Core Elements

- Practice commitment
- Responsibility and authority
- Action for judicious use
- Surveillance
- Resources and education

Core Elements of ASPs

- Practice commitment
- Responsibility and authority
- Action for judicious use
- Surveillance
- Resources and education

Practice Commitment

- Recognize and convey concepts
- Team approach
- Learn and improve
- Review prescribing behaviors
- Communicate and educate clients
Responsibility and Authority
- Designate a program leader
- Promote stewardship activities
  - Training opportunities
  - Identification of resources
- Foster relationships with experts to support stewardship

Action
- Develop written clinic-specific policies
- Adopt protocols that promote appropriate use of antibiotics
- Include other therapeutic strategies
- Create an incremented plan

Surveillance
- Internal review
- Use resources from laboratories and electronic medical records when available
Resources and Education

- Seek resources and education to promote team knowledge
  - Continuing education
  - Internet resources
- Stay informed about changing trends
- Use guidelines and texts in creating protocols

Available Resources

Creating an Antimicrobial Stewardship Program

AVMA web resources

Antimicrobial Use in Companion Animal Practice
Specific recommendations

ENTOMATOLOGIC DISEASE
-Necrotic or sloughing wounds
-Allergic reactions to bites
-Parasitic skin disease
-Infected wounds
-Pruritus

URINARY TRACT DISEASE
-Obstructive urolithiasis
-Bladder infection
-Bladder neoplasia

REPRODUCTIVE DISEASE
-Canine reproductive disease
-Neoplasia

DENTAL DISEASE
-Oral abscesses
-Periodontal disease
-Obstructive urolithiasis

RESPIRATORY DISEASE
-Upper respiratory tract infection
-Obstructive urolithiasis

GASTROINTESTINAL DISEASE
-Gastroenteritis
-Obstructive urolithiasis

Educational Materials

COUGH. SNORT. SNIFILE. SNEEZE.
CAREFUL WITH ANTIBIOTICS, PLEASE.

You meet your pet to feel better. Antibiotics may or may not be necessary. Antibiotics don't fight viruses; they don't fight infections. What will? Good supportive care while your pet's immune system does its job. Find out when extended care—such when they don't talk with your veterinarian.
Training Resources

http://amrls.cvm.msu.edu/

ISCAID

AAHA/AAFP

Use of Antimicrobials

American Animal Hospital Association

Basic Guidelines for Veterinary Therapeutics Use of Antibiotics

Introduction

The basic guidelines for veterinary therapeutics use of antimicrobials in companion animals are designed to provide veterinarians in private practice with recommendations for the development of antimicrobial strategies. Presented herein are the principles of antimicrobial use of veterinary medicine in companion animals. Members of the American Animal Hospital Association can obtain further information on the recommendations and guidelines developed for companion animals.
What might this look like in your practice?

Putting it All Together

Initial Strategies

- Consider practice resources
- Include entire veterinary team
- Focus on areas for success
- Create a written plan
- Draw on outside resources

All Friends Veterinary Clinic

- Two doctor practice
- Six additional employees
- Rural/suburban location
Dos and Don’ts Lists: Dermatology

DERMATOLOGY DISEASE
- Recommened prophylactic use of steroids in all cases of suspected disease
- Applicaiton of fomeral and coccidial treatments may be cermonial with other medications due to non-specific or ringworm disease
- Use topical antifungal and medicaal shampoos as an alternative to systemic antibiotics when possible

DENTAL DISEASE
- Avoid antimicrobial use for periodontal disease in dogs
- Prevention of dental disease is key to the success of dental treatment

URINARY TRACT DISEASE
- Avoid diagnosis of infection based on urinary tract symptoms
- Culture is incorrect with quantitative void forms

REPRODUCTIVE DISEASE
- Avoid antibacterial use in healthy animals and status prior to breeding
- Smaller power mages of dogs does not require antibiotic therapy

RESPIRATORY DISEASE
- In dogs and cats, use of

GASTROINTESTINAL DISEASE
- Avoid use of antibiotics in healthy cats

Team Education

ANTIMICROBIAL RESISTANCE LEARNING SITE

1. Antibiotics Use for Canine Pyoderma

Objective:
- Learn how antibiotics are used in treatment of canine pyoderma and what factors need to be considered when choosing antibiotics
- Understand the importance of choosing antibiotics that are susceptible to the strain
- Understand the importance of antibiotic resistance and the importance of accurate communication with the client
- Learn how to prevent and treat canine pyoderma and how to effectively evaluate treatments

Cytology-Staff Training
Microbial Culture and Susceptibility - Client Education

Topical Antimicrobials and Shampoos - Using Alternatives

Next Steps - Making Use of Further Resources

Veterinary Dermatology

Guidelines for the diagnosis and antimicrobial therapy of canine superficial bacterial folliculitis (Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases)

- Identification of the causative organism
- Selection of the most appropriate antimicrobial treatment
- Monitoring of the clinical response
- Adjustment of the treatment as necessary

References:
- Journal of Veterinary Internal Medicine
- Veterinary Dermatology
- American Journal of Veterinary Research

Next steps:
- Consultation with a veterinarian
- Use of alternative therapies
- Follow-up visits for monitoring

Useful resources:
- Veterinary Dermatology
- Antimicrobial Guidelines Working Group
- International Society for Companion Animal Infectious Diseases
Stewardship is Active

• An iterative process
  ◦ Regularly review activities and adherence to plan
  ◦ Refine plan and activities
  ◦ Celebrate and communicate success
  ◦ Expand program when feasible

Two Creeks Animal Hospital

• Five doctor practice
• Twenty additional employees
• Suburban location

Dos and Don’ts Lists: Surgery and Dentistry
Infection Control Focus

Model Infection Control Plan for Veterinary Practices, 2015
National Association of State Public Health Veterinarians (NASPHV)
Veterinary Infection Control Committee (VICC)

This plan should be adapted to your practice to keep up with local, state, and federal regulations. A printable electronic version is available on the NASPHV Website (www.nasphv.org). Please refer to the full Compendium of Veterinary Standard Precautions for complete information and guidance (also available at www.nasphv.org).

Clinic:

Date of Plan Adoption: ____________
Date of Next Review: ______________
Infection Control Officer: ___________

This plan will be followed as part of our practice’s routine procedures. The plan will be reviewed at least annually and as part of new employee training.

Making use of Resources

Every Practice is Different

- Create an antimicrobial stewardship program that works for your practice
- ASPs contribute to the solution in whatever form they take
- Approach this using your interests, team strengths, and practice personality
Conclusion

- Antimicrobial resistance is a medical and societal challenge
- A One Health approach
- Veterinarians must be part of the solution and can contribute through ASPs
- ASPs can and should be tailored to the individual practice

Questions?

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