Anthropologic Insights on Companion Animal Antimicrobial Practices

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In the literature

Tompson AC, Chandler CIR, Mateus ALP, O'Neill DG, Chang Y-M, Brodbelt DC. What drives antimicrobial prescribing for companion animals? A mixed-methods study of UK veterinary clinics. *Prev Vet Med*. 2020;183:105117.

FROM THE PAGE ...

Antimicrobial resistance is a high-priority global health issue with significant relevance to veterinary medicine. Although companion animal clinicians routinely prescribe antibiotics, efforts to understand antimicrobial dispensation practices, as well as attitudes, behaviors, and institutional factors surrounding these practices, are poorly understood.

This study, which analyzed >460,000 antimicrobial dispensing events in dogs across the United Kingdom, provides a nonveterinary, anthropologic perspective that highlights knowledge and behaviors surrounding antimicrobial dispensation that can be taken for granted, breaking clinicians from isolated approaches of antibiotic treatment.

The study found that clinicians in the United Kingdom were unfamiliar with the term "Highest Priority Critically Important Antimicrobials" (HPCIAs), which is used by the World Health Organization to describe antimicrobials that are critically important in human medicine (including fluoroquinolones, quinolones, third-generation and higher cephalosporins, macrolides and ketolides, glycopeptides, and polymyxins).[1] In addition, although clinicians are commonly involved in dispensing antimicrobials, they may be less involved in the greater public health conversation.

The study noted a greater likelihood of prescribing HPCIAs (eg, cefovecin—a third-generation, long-acting cephalosporin) to small-breed dogs, as these dogs require a lower dose, which could be less cost-prohibitive. The study also noted that younger clinicians tended to champion prudent antibiotic use but did not feel they could challenge their colleagues, in part due to their relative position in the clinic.

Although the study included robust quantitative and qualitative methods and appropriate use of statistics, some inferences may not be meaningful in practice. For example, the study showed an increased odds ratio of administering HPCIAs to patients of increasing age. However, because these intervals were broken into ≈4-year age intervals (ie, <1.5 years of age, 1.5-4.3 years of age, 4.3-8.2 years of age, and >8.2 years of age), the study did little to signify associations between more meaningful age groups (eg, neonates, juveniles, seniors). The study also could not isolate attitudes and behaviors at the individual clinician level.

Important literature on antimicrobial practices in veterinary medicine (see ***Suggested Reading***) was included. It is important to review such literature for a better understanding of current antimicrobial practices to optimize use of HPCIAs in veterinary medicine.

… TO YOUR PATIENTS

Key pearls to put into practice:

1. HPCIA use should be reconsidered and limited in patients with routine infections, particularly in small-breed patients, in which a lower dosage and subsequent cost may seem beneficial.

2. Pet owner education regarding the ongoing public health issue of antimicrobial resistance, including consequences of uncontrolled and improper antibiotic use, is important. Any course of antibiotics should be taken in its entirety, and owners should be assisted (eg, via offering outpatient or at-home services) to ensure compliance when possible.

3. Clinicians should perform culture and susceptibility testing and recommend the most prudent antibiotic therapy for the patient and owner. Although it is up to the clinician to dispense antibiotics, when appropriate, owners should be given a range of antimicrobial therapeutic options so they can make fully informed decisions and maximize compliance.

Reference

1. World Health Organization. Highest priority critically important antimicrobials. WHO website. https://www.who.int/foodsafety/cia/en. Updated May 2019. Accessed January 2021.

Suggested Reading

Sarrazin S, Vandael F, Van Cleven A, De Graef E, de Rooster H, Dewulf J. The impact of antimicrobial use guidelines on prescription habits in fourteen Flemish small animal practices. *Vlaams Diergeneeskd Tijdschr*. 2017;86:173-182.

Weese JS. Investigation of antimicrobial use and the impact of antimicrobial use guidelines in a small animal veterinary teaching hospital: 1995-2004. *J Am Vet Med Assoc*. 2006;228(4):553-558.