ANTIMICROBIAL USE IN EQUINE PRACTICE

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Since the development of antimicrobials in the 1920s, they have become indispensable tools in the protection of human and animal health. The development of antimicrobial resistance is an important public health issue that is impacted by the use of antimicrobial drugs in both humans and non-human species. The issue is receiving increasing attention on a national and global level. The American Veterinary Medical Association, Food and Drug Administration, and the Centers for Disease Control all have active task forces examining the issue of antimicrobial resistance, and the World Health Organization targeted antimicrobial resistance as the key health issue for World Health Day 2011. While antimicrobial resistance is in many ways an inevitable result of selection pressure on populations of microbes generated by the use of antimicrobial drugs, we have a responsibility as practitioners to minimize the risk of its development by utilizing antimicrobials in a thoughtful, logical way.

The American Association of Equine Practitioners has released guidelines for the use of antimicrobials in equine practice that are available on-line. In summary, veterinarians should endeavor to prevent infectious disease whenever possible through use of vaccines and proper husbandry and avoid inappropriate use of antibiotics. Examples of inappropriate use of antimicrobials include using them in cases of disease not related to bacterial infection (i.e. viral disease) or using antimicrobials at the inadequate dosage or incorrect duration of treatment. Veterinarians should have clinical evidence of the identification of the pathogen associated with the disease based on history, clinical signs, laboratory data, and experience in order to choose the most appropriate antimicrobial for the target organism. Use of specific antimicrobials should be based on information available in the packet insert and additional data in the literature on pharmacokinetic and pharmacodynamic aspects of the drug and known efficacy in vivo and/or in vitro against the pathogen in question. Whenever possible, use antimicrobials labeled for the treatment of the condition diagnosed. Use antimicrobials on an extra-label basis only within the provisions of the Animal Medicinal Drug Use Clarification Act (AMDUCA); requirements applicable to horses include that extralabel drug use must be under the supervision of a veterinarian with a valid veterinarian/client/patient relationship in place, the drug must be FDA approved, and it must be for therapeutic purposes only. Local therapy should be used in preference to systemic therapy whenever possible.

Once the practitioner has a high suspicion of bacterial infection in a case, then the challenge becomes to determine which bacteria is involved and what the susceptibility is of that particular bacteria to available antimicrobial drugs. In cases where the history and clinical signs of a case suggest a likely bacterial cause and the susceptibility pattern is predictable, empirical treatment may be appropriate. In other cases, the likely organism may not be readily known or its antimicrobial susceptibility pattern may be unpredictable. The best course of action in these cases
is to obtain a relevant sample and submit it for bacterial culture and susceptibility testing.

If empirical treatment is to be pursued or antimicrobial treatment initiated prior to availability of results of culture and susceptibility, the likely etiologic agent can be determined based on the clinician’s experience and published information. The probability of its susceptibility to specific antimicrobial agents can then be estimated based on available data on the susceptibility of the organism, preferably in the geographic region of practice. In this way, the most appropriate antimicrobial for the infection can be selected and responsibly prescribed.

References:


