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Update on Managing Serious Wound Infections in Horses 4. Wounds Involving Soft Tissues

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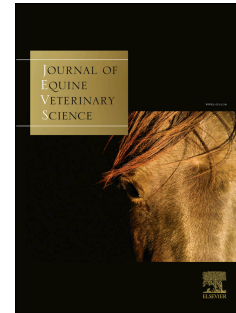
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Update on Managing Serious Wound Infections in Horses

4. Wounds Involving Soft Tissues

James A. Orsini, DVM, DACVS

The fourth and final article continues the discussion of advances in the management of serious wound infections in horses, with the focus on wounds involving soft tissues. The previous articles focused on wounds involving joints and other synovial structures^{1,2} and wounds involving bone.³

Wound infections can be a considerable challenge in this era of multidrug-resistant bacteria. Examples include these variants of common equine wound pathogens:⁴

- methicillin-resistant *Staphylococcus aureus* (MRSA) and *S. epidermidis* (MRSE)
- vancomycin-resistant *Enterococcus* spp. (VRE)
- heteroresistant vancomycin-intermediate *S. aureus* (hVISA)
- penicillin-resistant *Actinobacillus* spp.
- aminoglycoside-resistant *Escherichia coli*
- *Pseudomonas aeruginosa* strains that are resistant to most commonly used antibiotics

Note that resistance is now documented in equine isolates for vancomycin⁵⁻⁸ and imipenem^{7,9,10}—drugs we are advised in veterinary medicine to reserve for use only with documented multidrug-resistant pathogens.

A recent study from Utrecht University in The Netherlands illustrates the problem we now face. The researchers examined *in vitro* antimicrobial susceptibility patterns in 1,091 bacterial isolates from 588 foals with sepsis between 1979 and 2010, and found the following trends:¹⁰

- gentamicin—decrease in percentage of susceptible enterobacteria (*E. coli*, *Klebsiella* spp., *Salmonella* spp., etc.), *Actinobacillus* spp., and β -hemolytic *Streptococcus* spp.
- amikacin—increase in minimum inhibitory concentrations (MIC) in those same groups (*i.e.*, higher concentrations needed for bactericidal effect)
- ceftiofur—decrease in percentage of susceptible enterobacteria, and increase in MIC values in *Enterococcus* spp. and *Pseudomonas* spp.
- ceftizoxime—increase in MIC values in enterobacteria
- ticarcillin-clavulanate—increase in MIC values in *Enterococcus* spp.
- imipenem—increasing resistance in *Enterococcus* spp. in recent years

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