

## Septic Joint Treatment with Constant Intra-articular Infusion of Gentamicin or Amikacin

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An easy technique for placement of an inexpensive joint infusion system into septic joints to maintain constant intra-articular administration of antibiotics is described. Using the joint infusion system, levels of gentamicin or amikacin in the synovial fluid are far greater than can be achieved with systemic administration of antibiotics alone. This technique is useful as an adjunct to standard therapy for septic joints in foals and horses.



**HOCK JOINT WITH JOINT INFUSION SYSTEM**

### **PLACEMENT PROCEDURE:**

1. Collection of synovial fluid samples for cytology and microbiology, joint drainage, lavage or debridement are done prior to insertion of the infusion system.
2. Placement of the catheter system should be performed using strict aseptic technique.
3. Fill the administration pump to the desired volume using the injection port on the pump. We recommend placing a minimum of 48ml (four day supply) into the pump but up to 100ml can be used. It is important to eliminate all air bubbles from the syringe prior to filling the balloon to prevent air entering the flow control tubing within the system. Air bubbles can block flow of antibiotic solution through the flow control tubing although the air filter can remove very small air bubbles.
4. Open clamp and check that the infusion fluid is beading at the end of the infusion tubing and flowing correctly prior to placement within the joint.
5. Insert the peel away introducer into the septic joint to the catheter hub. It is easier to thread the indwelling catheter into the joint if catheter fully inserted. Remove the stylet.
6. Pass the indwelling catheter through the introducer until at least 2.5cm of the catheter is estimated to be within the joint. When the catheter is in place, the blue tabs on the introducer are pulled apart and up out of the joint. Make sure the indwelling catheter stays in place.
7. Affix the indwelling catheter to the skin using skin sutures and cyanoacrylate glue to prevent dislodgement.
8. Attach administration pump to the catheter and open system. Apply antiseptic dressing over the site of catheter insertion.

9. Position the administration pump on the limb so the tubing is pointed down toward insertion site. This will reduce the chance that any air bubbles present within the pump will enter the tubing.

10. Place a well-padded sterile bandage over the catheter. Position the bandage so that the pump can be checked easily for functionality and filled when necessary without removing the bandage from the catheter insertion site. Bandages should be changed every two to three days to check the entire system.

11. When treatment complete, remove catheter and a sterile bandage is applied for 48 hours. Some synovial fluid may lead from the site, particularly if the catheter has been in place for longer than five days.

## **Dose Calculations for Gentamicin and Amikacin when using Joint Infusion System**

### **Horses $\leq$ 500 kg body weight**

- A. Intra-articular infusion dose per 24H
  - 1. Gentamicin = 2.4mg/kg, qs to 12ml with BES
  - 2. Amikacin = 6.0mg/kg, qs to 12ml with BES  
(Minimum of 48ml in administration pump)
- B. Intravenous dose - once every 24H
  - 1. Gentamicin = 4.8mg/kg
  - 2. Amikacin = 15mg/kg

### **Horses $>$ 500kg body weight**

- A. Intra-articular infusion dose per 24H
  - 1. Gentamicin = 1200mg
  - 2. Amikacin = 3000mg  
(Minimum of 48ml in administration pump)
- B. Intravenous dose - once every 24H
  - 1. Gentamicin = 2400mg + 6.6mg/kg x (BW-500)kg
  - 2. Amikacin = 7500mg + 21mg/kg x (BW-500)kg

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qs - fill to sufficient quantity  
BW - body weight in KG  
BES - balanced electrolyte solution