Cost Comparisons of Noncompliance with Skin Treatments

In this study, the investigators used a mathematical model and data from existing studies to calculate the clinical and economic outcome of client noncompliance with antimicrobial treatment. They compared injectable cefovecin with oral amoxicillin–clavulanic acid in the treatment of superficial pyoderma, wounds, and abscesses. For the purposes of this model, these drugs were considered first-line treatments. The second-line treatment used for calculating cost was a fluoroquinolone. The model included 4 outcomes after first-line treatment of 4 weeks' duration: cured, improved, status quo, or worsening. Improved dogs received an additional 4 weeks of the first-line antibiotic in this model, and dogs classified as status quo or worsening received second-line therapy. Third-line treatments (also fluoroquinolones) were simulated as well. Treatment failures due to noncompliance were approximated from published data at 13.6%. Factors such as patient size were also considered. Treatment was more cost-effective in the long run with cefovecin versus amoxicillin–clavulanic acid in small and medium dogs (≤ 25 kg). In large dogs (> 25 kg), total treatment costs were 6% higher with cefovecin versus amoxicillin–clavulanic acid. *Supported by a grant from Pfizer Animal Health*

Commentary: The Markov model, which is commonly used in human and veterinary medicine, was applied in this study. The model can be structured to consider decision making, specific disease parameters (eg, cure then relapse due to underlying disease), and treatment outcomes (cure, relapse, no change) and/or to allow patients to pass through different states during the illness or treatment (eg, well-controlled diabetes to end-stage renal disease to death). In calculating the cost estimate, investigators did not consider only drug costs. The study includes a very detailed list of additional costs that were included in the model at various times. For example, a dog with superficial pyoderma may initially respond with a first-line antibiotic but then relapse and continue to relapse throughout the model. At predefined points the model included cost of veterinary examinations, injection fees, prescribing fees, laboratory tests, skin biopsy, shampoo therapy, etc. An excellent discussion of these models can be found in Sonnenberg and Beck's 1993 article on this topic.[1] *—Karen A. Moriello, DVM, Diplomate ACVD*

Estimation of the clinical and economic consequences of noncompliance with antimicrobial treatment of canine skin infections. Van Vlaenderen I, Nautrup BP, Gasper SM. ***PREV VET MED*** 99:201-210, 2011.

[1] **Markov models in medical decision making: A practical guide.** Sonnenberg FA, Beck RJ. *Med Decis Making* 13:322-338, 1993.

Canine Surgical Pain—Bypass the Butorphanol

Ovariohysterectomy is an important surgery in veterinary medicine and is associated with significant pain and/or fatigue. Butorphanol is a commonly used κ-agonist/μ-antagonist opioid that provides only mild analgesic effects of short duration. Firocoxib, a nonsteroidal antiinflammatory drug (NSAID), is a highly selective cyclooxygenase-2 (COX-2) inhibitor. In general, coxibs are more lipophilic than many nonselective NSAIDs and can readily cross the blood–brain barrier, a property that may allow them greater systemic distribution and may facilitate inhibition of the central regulation of COX-2. In the present study, 25 dogs underwent routine ovariohysterectomy after receiving either butorphanol (n = 12) or firocoxib (n = 13) as part of their preanesthetic protocol. All dogs were sedated with acepromazine, induced with propofol, and maintained under general anesthesia with isoflurane. Eleven dogs (91.7%) in the butorphanol group required postoperative rescue analgesia as compared with only 2 dogs (15.4%) in the firocoxib group. In addition, the firocoxib group had significantly lower pain scores. Sedation scores were not significantly different between groups; however, dogs receiving butorphanol did not require as much propofol during induction.

Commentary: This study supports previous data showing that butorphanol is a poor analgesic in dogs but may be useful for sedation. Previous data have also proven that the sedation effects of butorphanol should not be confused with true analgesia. Firocoxib proved to be a good preoperative analgesic and is well tolerated. Further studies are needed to compare all of the common NSAIDs that are used perioperatively, including their availability, cost, and the practicalities of dispensing the medication when patients go home. The importance of multimodal analgesia and anesthesia cannot be overemphasized.—*Heather Troyer, DVM, Diplomate ABVP*

Postoperative analgesic effects of butorphanol or firocoxib administered to dogs undergoing elective ovariohysterectomy. Camargo JB, Steagall PVM, Minto BW, et al. ***VET ANAESTH ANALG*** 38:252-259, 2011.

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