Mast cell tumors (MCTs) are among the most commonly treated malignancies in practice. Histopathologic Patnaik grading is the most reliable prognostic indicator. In this system, Grade I tumors are indolent with low metastatic potential, whereas Grade III tumors are highly metastatic and locally aggressive. Grade II tumors, which represent the majority, have presented a challenge because of their variable behavior and a large interobserver disparity among pathologists. Subsequently, a 2-tier grading system and proliferation indices (Ki67 and mitotic index) are being incorporated individually or as part of a prognostic panel to facilitate prognostication and treatment planning.

Few studies have evaluated prognostic factors in dogs with stage IV disease (distant metastasis) or at high risk for metastasis, and there is no randomized study evaluating systemic treatments in these groups. This study sought to better define these groups for prognostic factors, outcome with common systemic treatments, and survival advantage in dogs treated with surgery and systemic therapy vs systemic therapy alone.

Dogs undergoing systemic therapy without gross disease had significantly better survival time as compared with those with gross disease (MST, 462 vs 150 days). Of note, dogs with metastatic disease that underwent surgical removal of only the primary tumor along with systemic therapy had a significant survival advantage vs those that did not undergo surgery (MST, 278 vs 91 days), regardless of completeness of margins and clinical stage. Dogs with Grade II nonmetastatic disease showed a survival advantage when receiving vinblastine and prednisone as compared with those receiving masitinib (MST, 1946 vs 369 days).

A more recent study supported these findings. Multivariate analysis of dogs with Stage IV disease found a measurable primary tumor at time of diagnosis to be negatively associated with progression-free interval (median, 21 vs 125 days) and overall survival (MST, 93 vs 180 days); dogs receiving local (surgery and/or radiation therapy) and systemic treatment had better outcomes. These results suggest that surgical resection of the primary MCT followed by systemic therapy offers a significant survival advantage, regardless of metastasis, as compared with dogs receiving only systemic therapy.

In the Literature
Brief Summary of Prescribing Information

convenia®
(cefsvocecin sodium)
Antimicrobial for Subcutaneous Injection in Dogs and Cats Only

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS:
Dogs: convenia® is indicated for the treatment of skin infections (secondary superficial pyoderma, abscesses, and wounds) in dogs caused by susceptible strains of Staphylococcus intermedius and Streptococcus canis (Group B).

Cats: convenia® is indicated for the treatment of skin infections (secoondary superficial pyoderma, abscesses and wounds) in cats caused by susceptible strains of Pasteurella multocida.

CONTRAINdications: convenia® is contraindicated in dogs and cats with known allergy or intolerance to cephamycins or penicillin group antimicrobials. Anaphylaxis has been reported with the use of this product in foreign market experience. If an allergic reaction or anaphylaxis occurs, convenia® should not be administered again and appropriate therapy should be instituted. Anaphylaxis may require treatment with epinephrine and other emergency measures, including oxygen, intravenous fluids, intravenous antibiotics, corticosteroids, and airway management, as clinically indicated. Adverse reactions may require prolongation of treatment due to the prolonged systemic drug clearance (100 days).

WARNING: Not for use in humans. Keep this and all drugs out of reach of children. Consult a physician in case of accidental human exposure.

PRECAUTIONS: Prescribing antibacterial drugs in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to treated animals and may increase the risk of the development of drug-resistant animal pathogens.

The safe use of convenia® in dogs or cats less than 4 months of age and in breeding or lactating animals has not been determined. Safety has not been established for IM or IV administration.

The long-term effects on infection sites have not been determined. convenia® is slowly eliminated from the body, approximately 8 days is needed to eliminate 99% of the administered dose from the body. Animals experiencing an adverse reaction may need to be monitored for this duration.

CONVENIA has been shown in an experimental in vitro system to result in an increase in free concentrations of carbonp, lurosvine, dexamethone, and ketohexalone. Concurrent use of these or other drugs that have a high degree of protein-binding (e.g. NSAIDS, propof, cardiac, arthritic, and behavioral medications) may compete with convenia binding and cause adverse reactions.

Positive direct Coombs’ test results and false positive reactions for glucose in the urine have been reported during treatment with some cephalosporin antimicrobials. Cephalosporin antimicrobials may also cause falsenegative urine protein determinations. Some antimicrobials, including cephalosporins, can cause lowered albumin values due to interference with certain testing methods.

Occasionally, cephalosporins and NSAIDS have been associated with myelosuppression, thereby creating a toxic neutropenia. Other hemorrhagic reactions seen with cephalosporins include neutropenia, anemia, hemolytic anemia, thrombocytopenia, prolonged prothrombin time (PT) and partial thromboplastin time (PTT), platelet dysfunction and transient increases in serum aminotransferases.

ADVERSE REACTIONS:
Dogs: A total of 239 dogs, ranging in age from 8 weeks to 19 years, were included in a field study safety analysis. Adverse reactions reported in dogs treated with convenia® and the active control are summarized in Table 2.

Cats: One convenia®-treated cat in a separate field study experienced diarrhea post-treatment lasting 42 days. The diarrhea resolved.

FORWARD MARKET EXPERIENCE: The following adverse events were reported voluntarily during postapproval use of the product in dogs and cats in foreign markets: death, tremors, seizures, anaphylaxis, acute pulmonary edema, facial edema, injection site reactions (alopecia, scabbing, necrosis), and pyrexia, hemolytic anemia, salivation, priapism, lethargy, vomiting, diarrhea, and inappetence.

REFERENCES:

Table 3: Number of Cats* with Adverse Reactions Reported During the Field Study with CONVENIA.

<table>
<thead>
<tr>
<th>Adverse Reaction</th>
<th>CONVENIA (n=153)</th>
<th>Active Control (n=163)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vomiting</td>
<td>9 (6%)</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>6 (4%)</td>
<td>16 (10%)</td>
</tr>
<tr>
<td>Anorexia/Decreased Appetite</td>
<td>2 (1%)</td>
<td>6 (4%)</td>
</tr>
<tr>
<td>Flatulence</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Increased Antihypertensive</td>
<td>1 (1%)</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Flatulence</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>

Note: *some cats may have experienced more than one adverse reaction or more than one occurrence of the same adverse reaction during the study.

CONVENIA is available as a 1 mL multi-use vial containing 800 milligrams of cephalosporin as a lyophilized cake.

NADAC 141-285, Approved by FDA

References: