IOWA STATE UNIVERSITY
College of Veterinary Medicine

Honors Poster Session
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Lauren Hackbarth, Chad Johannes, DVM, Diplomate ACVIM (SAIM, Oncology), Natalie Punt, DVM, Leslie Fox, DVM, MS, Diplomate ACVIM (SAIM, Oncology)

Management of canine chemotherapy-induced vomiting and inappetence

Introduction

Chemotherapy-induced vomiting and inappetence is a common side effect of chemotherapeutic treatment, typically affecting half of receiving patients[1], that can lower quality of life and functionality. While human oncology has well-established protocols for preventing these side effects, veterinary medicine does not. In fact, lymphoma accounts for 7-24% of all canine cancer diagnoses, but there is still no standardized protocol for testing and treatment.[2] Even in human medicine, there is a general trend in under treatment of patients receiving highly emetic chemotherapy and over treatment of patients receiving low or minimally emetic chemotherapy.[3]

Statement of Purpose: The objective of this research is to establish a baseline regarding current standard of care to determine how veterinary specialists are managing vomiting and inappetence in dogs receiving chemotherapy.

Methodology

- Conducted as an online survey sent via listserv to approximately 1800 veterinary specialists
- The survey inquires:
  - Whether or not the specialist accompany the most commonly used chemotherapy treatments with prophylactic antiemetic therapy to prevent canine vomiting on Day 1 (acute) and Days 2-5 (delayed).
  - To estimate the likelihood of vomiting expected during the given time periods.
  - To depict what types of antiemetic therapies are used in prophylactic or reactive treatment of vomiting.
  - To indicate the most common appetite stimulants they use in treating inappetence in canines receiving chemotherapy.

Results

- The survey was sent out April 2, 2016.
- The results are statistics only, no statistics performed.
- Demographics:
  - 145 responses (140 DVM, 5 Nurses)
  - 98 (68%) boarded oncologists
  - 98 (68%) with medical oncology being >60% of their daily practice
  - 101 (70%) private practice; 43 (30%) academic

Vomiting (Prophylactic and Reactive Treatment, Products) for Day 1 and Days 2-5:
1. Maropitant (NK1 antagonist)
2. Ondansetron (5-HT3 antagonist)
3. Metoclopramide (D2 antagonist)

Inappetence (Treatment, Products)
1. Maropitant (NK1 antagonist)
2. Mirtazapine (NaSSA antidepressant)
3. Metoclopramide (D2 antagonist)

Vomiting (Prophylactic Treatment, Yes/No); Day 1 (>50%):	Vomiting (Prophylactic Treatment, Yes/No); Day 2 (>50%):
Cisplatin, Streptozocin, Dacarbazine, Paclitaxel, Epirubicin, Doxorubicin	Cisplatin, Dacarbazine, Doxorubicin, Paclitaxel, Streptozocin
Vomiting (Likely to cause > Grade 2 adverse event); Day 1 (Most emetogenic, responses indicating >50% likelihood):	**Vomiting (Likely to cause > Grade 2 adverse event); Days 2-5 (Most emetogenic, responses indicating >50% likelihood):**
Cisplatin, Streptozocin, Dacarbazine, Paclitaxel, Epirubicin, Doxorubicin, Mechlorethamine	Cisplatin, Streptozocin, Paclitaxel, Dacarbazine, Epirubicin, Doxorubicin, Mechlorethamine
Inappetence (Likely to cause > Grade 2 adverse event); Day 1 (Most likely to cause inappetence, responses indicating >50% likelihood)	**Inappetence (Likely to cause > Grade 2 adverse event); Days 2-5 (Most likely to cause inappetence, responses indicating >50% likelihood)**
Cisplatin, Streptozocin, Paclitaxel, Dacarbazine, Epirubicin, Doxorubicin, Mechlorethamine	Cisplatin, Streptozocin, Paclitaxel, Epirubicin, Dacarbazine, Doxorubicin, Mechlorethamine

Preliminary data: results still being accrued.

Discussion

- Chemotherapies likely to be most emetogenic clinically:
  - Cisplatin, Streptozocin, Dacarbazine, Paclitaxel, Epirubicin, Doxorubicin, Mechlorethamine
- Chemotherapies considered most likely to cause acute emesis (Day 1) and delayed emesis (Days 2-5) are very similar.
- Most common antiemetic therapy in both the acute (Day 1) and delayed (Days 2-5) setting AND preventative and reactive (after vomiting has occurred) setting:
  - Maropitant, Ondansetron, Metoclopramide
- Chemotherapies most likely to cause inappetence are the same as those most likely to cause emesis.
- Clinical studies have documented the percent of treated canines showing decreased appetite:
  - Carboplatin 25% (7/28) in cats and dogs*[4]
  - Vincristine 43% (25/57)[5]
  - Cyclophosphamide 36% (15/42)[5]
  - Toceranib phosphate 39% (34/87)[6]
  - Doxorubicin 33-53% (n=49)*[7]
- Maropitant, an antiemetic therapy, is the most commonly utilized therapy for appetite stimulation.

Conclusions/Future Directions

- Data obtained in this survey will help contribute to the development of antiemetic and inappetence prevention and treatment guidelines in dogs receiving chemotherapy.
- Future clinical trials will assess the management of vomiting and inappetence in dogs with lymphoma being treated with chemotherapy and compare oncologists' perceptions with evaluations made by dog owners.

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References

[1]Vidall, Cheryl, Paz Fernández-Ortega, Diego Cortinovis, Patrick Jahn, Bharat Amlani, Florian Scotté. "Impact and management of chemotherapy/radiotherapy-induced nausea and vomiting and the perceptual gap between oncologists/oncology nurses and patients: a cross-sectional multinational survey." *Support Care Cancer* 23 (2015): 3297-3305. Print. [2]Regan, R. C., M. S. W. Kaplan and D. B. Bailey. "Diagnostic evaluation and treatment recommendations for dogs with substage-a high-grade multicentric lymphoma: results of a survey of veterinarians." *Veterinary and Comparative Oncology* 11.4 (2012): 287-295. Print. [3]Molassiotis, A., SG Brearley, Z Stamataki. "Use of antiemetics in the management of chemotherapyrelated nausea and vomiting in current UK practice." *Support Care Cancer*19.7 (2011): 949-56. Print. [4]Bowles DB, et al. J Small Anim Pract 2010;51:104-12. [5]Mason SL, et al. J Small Anim Pract 2014;55:391-8. [6]London CA, et al. Clin Cancer Res 2009;15(11):3856-65. [7]Rau SE, Barber LG, Burgess KE. J Vet Intern Med 2010;24:1452-7