Research Paper

Adverse Effects of Chemotherapy in Dogs.

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ABSTRACT

Owners of dogs with cancer are often offered chemotherapeutic treatment. However, clients who seek veterinary care for pets with cancer are often concerned about the potential negative impact of chemotherapeutic treatments on their animals' quality of life. The purpose of this retrospective case series was to investigate the delayed acute effects of chemotherapy drugs in dogs receiving cancer treatment and their owners’ opinions regarding chemotherapy acceptance by their pet. In this study, 292 dogs that were treated with chemotherapy as a definitive and/or adjuvant treatment for cancer. Medical records were reviewed to determine the chemotherapy agent used and if they had any delayed adverse effects or not.

Side effects were classified according to VCOG-CTCAE grading of adverse effect severity veterinary co-operative oncology group. Lomustine, carboplatin, vincristine, doxorubicin, cyclophosphamide, mitoxantrone, and vinblastine were administered in 16%, 20%, 15%, 18%, 16%, 8%, and 7% of the cases respectively. The most common adverse effects were neutropenia (22%), vomiting (21%), diarrhea (20%) and inappetence (20%). Cyclophosphamide and vincristine were the agents that had caused more adverse gastrointestinal effects, while lomustine was the drug that had caused more hematologic effects. In some dogs receiving lomustine and carboplatin, neutropenia (some of them severe) had occurred as early as in the sixth day. According to the current grading system of adverse effects induced by chemotherapy, general tolerance to chemotherapy is referred to as grade 1, which was observed in 83% of the cases. Owner opinion was positive in most cases, and 77% of the owners had evaluated that the treatment was well tolerated by their dogs. In contrast, 8% of the treatments were poorly tolerated and they had negatively impacted the affected dogs' quality of life. Based on the data examined, we would recommend that gastrointestinal adverse effects must be prevented with antiemetic medication, especially in dogs receiving cyclophosphamide, vincristine, carboplatin and doxorubicin. Hematologic profile must be performed as early as in the 6-7th day after lomustine and carboplatin, as severe neutropenia can occur. Adverse chemotherapy effects may occur in about 20-25% of canine patients.

Key words: Canine, Oncology, Chemotherapy, Side effect, Tolerability
The AET recorded the highest acrosomal reaction (10.17±1.11%), followed by the mixed treatment (8.33±0.14%), with the least significant effect (P <0.05) on the mechanically treated (3.33±0.56%).

The recovery rate per cent (RR) was determined to have been at 35.02±5.02%, contrary to a clear superiority of AET treatment on M & second abnormalities 4.13±0.88% and 7.01±1.254%, respectively and acrosomal integrity 5.03±1.05%. The researcher examined three different treatments for viscosity elimination; namely; Amylase Enzymatic Treatment (AET), Syringe Mechanical Treatment (SMT) and Enzymatic & Syringe Mechanical Treatment (ASMT). These results clarified that both enzymatic and mechanical methods (i.e., AET and SMT) were more effective than ASMT in the SMT.

The purpose of this study was to evaluate the haematological and biochemical changes in Nigerian dogs with short bowel syndrome. Thirty adult dogs each weighing approximately 89-100 kg were selected. In the current study, two experimental groups each six dogs each. Group 1 is the control group. The dogs here were not placed on any treatment. Group 2 dogs were supplemented with glutamine. Group 3 dogs were supplemented with glutamine, honey and ascorbic acid combination. Haematological parameters such as haemoglobin, hematocrit, red blood cells, white blood cells, platelets, lymphocytes, monocytes, neutrophils, basophils, eosinophils, thrombocytes were measured in all five groups. Alanine aminotransferase, glutamic oxaloacetic transaminase, alkaline phosphatase, lactate dehydrogenase, sodium, potassium, chloride, calcium, phosphorus, magnesium, total protein, albumin, urea, creatinine, cholesterol, triglycerides, HDL cholesterol, LDL cholesterol, total cholesterol, triglycerides, and high-density lipoprotein cholesterol were examined in all the dogs.

There was a significant decrease in the value of alkaline phosphatase in the five groups and the difference was statistically significant (P <0.05). There was also a significant decrease in the value of aspartate aminotransferase in all the groups. The value of alanine aminotransferase and aspartate aminotransferase remained the same throughout the study in all the groups. There were no significant changes in the value of aspartate aminotransferase in all the animals. It was observed that the value of alanine aminotransferase had remained at normal range throughout the study.