Research Paper

Adverse Effects of Chemotherapy in Dogs.

Cunha SCS, Silva FBF, Corgozinho KB, Silva KVG and Ferreira AMR.


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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 effect of the ASMT on the post-thaw motility (Mₚₜ) was 49.00±4.87%, followed by the SMT Recovery Rate (RR) of 35.02±5.02%, contrary to a clear superiority of AET treatment on (Mₚₜ and RR). Treatment duration (8.33±0.14%) had the least significant effect (P <0.05) on the mechanically treated semen. Physical properties of raw semen showed a volume mean value for SMT treatment. Conversely, the study recorded the lowest significant values for LIN, STR and WOB in the SMT. These results clarified that both enzymatic and mechanical methods have a positive influence on dromedary camel semen cryopreservation.

Additionally, computer assisted semen analysis showed a significant superiority for the AET on mostly all sperm kinetics (DCL, DAP, VAP, VSL), except for DSL, VCL that showed highest significant variation with age groups of the animals. This study demonstrated the prevalence of bovine tuberculosis in cattle slaughtered at ELFORA export abattoir and low sensitivity of routine abattoir inspection. Hence, the carcass must be thoroughly examined well to reduce the chance of losses in many countries of the world, particularly in developing nations.

An abattoir based study on bovine tuberculosis in Debre Zeit, Ethiopia demonstrated the prevalence of the disease was significantly (P < 0.05) varying with body condition scores but it did not significantly (P > 0.05) vary with age groups of the animals. This study also showed the disease to be present in 12.3%, 2% and 3.3%, respectively. The prevalence of the disease was significantly (P < 0.05) higher in thin cows compared to overweight and middle cows. Members of the Mycobacterium complex group cause tuberculosis, it is recognized as one of the most common zoonotic diseases, with the highest prevalence in the tropics and subtropics.

In the present study, the distribution of different lesions was examined in 300 cattle, 5.7% (17/300) of cattle had lesions of tuberculosis. Out of these, routine abattoir inspection had an accuracy of 41.17% and manual inspection had an accuracy of 85.16%. Hence, the carcass must be thoroughly examined well to reduce the chance of losses in many countries of the world, particularly in developing nations.

The authors conclude that both enzymatic and mechanical methods have a positive influence on dromedary camel semen cryopreservation. They recommend that further studies should be conducted to explore the efficacy of these methods in enhancing semen cryopreservation in dromedary camels.