Treatment of canine mast cell tumors with imatinib mesylate -13 cases (2006-2010)

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Introduction

Imatinib mesylate is a small-molecule tyrosine kinase inhibitor used for treatment of canine mast cell tumor. Although the response rate of the drug was reported recently[1], the response duration has not been reported. The purpose of this study was to evaluate the clinical outcomes and adverse effects of imatinib for dogs with measurable mast cell tumors (MCT).

Methods

The medical records of 13 dogs with MCT presented to the Japan Small Animal Cancer Center between January 2006 and March 2010 were retrospectively reviewed. All tumors were measurable and dogs receiving imatinib for less than 7 days and dogs with concurrent chemotherapy (except prednisolone) were excluded from the study. The initial dosage of imatinib was 10 mg/kg PO daily and 11 dogs had predonisolone. The response was evaluated by RECIST criteria (ver.1.1). Factors evaluated for prognostic significance included age, gender, body weight, tumor size, the presence of lymph nodes metastasis, Darier's signs at the time of treatment and c-KIT mutation at exon-11. The response duration was calculated by the Kaplan-Meier method and statistical significance was set at $p \leq 0.05$ using log rank analysis. Adverse effects were defined as any negative symptoms that were seen within 30 days after imatinib administration and evaluated by VCOG-CTCAE[2].

Results

An overall response rate was 61.5% (CR= 5, PR= 3). The response rate was 100% (CR= 3, PR= 3) in 6 dogs with c-KIT mutation and 28.5% in 7 dogs with no c-KIT mutation. Median time to reach the maximum response was 14.5 days (6-43 days). An over all response duration was 30 days (19-253 days). Response duration in dogs with CR and PR were 188 and 22 days, respectively. No factors were prognostic for response duration by univariate analysis. Adverse effects were included 2 anemia (grade1), 1 thrombocytopenia (grade1), 1 neutropenia (grade1), 5 ALKP elevation (grade1= 2, grade2= 2, grade4= 1) and 1 ALT elevation (grade3).

Conclusion

Although imatinib mesylate had clinical activity against MCT in dogs, the response duration was not durable. Adverse effects were minimal and were usually manageable.

References

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2) Veterinary Co-operative Oncology Group- common terminology criteria for adverse events (VCOG-CTCAE) following chemotherapy or biological antineoplastic therapy in dogs and cats v1.0. 2004. Vet. Comp. Oncol., 2:195-213.