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# Efficacy of an Oral Antiangiogenic Protocol for Advanced Malignancies: A Pilot Study

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**Background:** Antiangiogenic therapy is a validated approach to cancer, presently relying on an infusional agent specifically targeting VEGF. Oral, multi-targeting strategies are under investigation. We developed protocol OLCAT-007, comprised of 3 oral formulary agents with antiangiogenic/anti-tumor properties: celecoxib (C), tamoxifen (T), and doxycycline (D). A pilot study was conducted in canines with advanced cancers to evaluate tolerability, survival, and quality of life. **Methods:** C, T, and D inhibited endothelial activity ex vivo and in vivo. Drug doses were metabolically scaled for varying dog weights (C = 25–100 mg; T = 1–5 mg; D = 50–300 mg; all BID). Pet canines with advanced cancer (n = 51; 28 breeds; 26 tumor types) received C+T+D with owner consent and veterinarian supervision at 50 sites. Study criteria included verified tumor histopathology, predicted survival at diagnosis, oral intake ability, routine blood laboratory tests, and clinical documentation of tumor response. Quality of life (QoL) was evaluated using an owner-reported index normalized to objective measures. A subgroup (n=17; 15 breeds) with a spectrum of malignancies (mammary, lung, thyroid, gastric, melanoma, basal cell, nasopharyngeal, perianal, genitourinary, lymphoma) treated for at least 8 weeks were analyzed. Data were obtained via veterinary records, pathology reports, and study forms. **Results:** OLCAT-007 was well tolerated and QoL was maintained or improved in all subjects. 14/17 dogs maintained or gained weight (+ 3.8% average) after 8 weeks of treatment. Tumor regression (n=4; 25–100% shrinkage), disease stabilization (n=2), and tumor progression (n=5) were observed. Tumor was not measurable in 6 subjects. Survival time increased in 15/16 of treated dogs (actual average survival = 15.6 months vs. average predicted survival = 7.0 months). **Conclusions:** OLCAT-007 was well tolerated and showed anti-tumor activity against advanced malignancies, resulting in increased survival, tumor response, disease stabilization, and good QoL in spontaneous canine cancers. This oral protocol may have practical application with standard cancer therapies. Based on this pilot study, human evaluation is underway.

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