2019 VCS Annual Conference

Intra-tumoral injection of Tigilanol Tiglate in canine mast cell tumors: Time-assessed thermographic images, computed tomography and clinical response

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Introduction

Tigilanol tiglate (TT), a novel small molecule, is under clinical evaluation for intratumoral treatment of canine mast cell tumors (MCT). In this study we used thermography (TI) and computed tomography (CT) to characterize responses in MCT following TT treatment.

Methods

Twenty dogs with 21 confirmed MCTs were enrolled. TI of the treated tumors were collected pre-treatment, during TT injection, and at 2 hours, 4 hours and 1, 7, 14, 28 days. CT scans were taken pre-treatment and Day 28.

Results

Thermography showed distinct temperature changes during treatment. Pre-treatment, tumor area was warmer (mean temperature 34.1°C) than healthy tissue in most patients (72%). Consistent patterns of tumor response were then observed. Tumor temperature decreased within 1 hour associated with localised inflammation isolating the tumor, changes in vascularity were apparent within 4 hours and haemorrhagic necrosis evident within 48 hours. Tumor slough followed, with healthy granulation tissue developed in the wound bed (mean time of 10.4 days). Wounds resolved in 58% of dogs by day 28, all wounds healed by day 60. Complete response was achieved in 76.2% of dogs, with no residual disease around the margins of the treated tumor. No significant adverse events were recorded.

Conclusion

Thermography provides a powerful tool for visualizing the mode of action of TT *in vivo* including demonstrating the absence of residual disease in margins of dogs achieving complete response. In our experience TT is a safe, easy to apply and promising drug in MCT treatment, especially for animals were surgery is not indicated.