

## DETERMINANTS OF CLINICAL OUTCOME OF CUTANEOUS MAST CELL TUMOR IN 15 DOGS (2012-2014)

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**INTRODUCTION.** Mast cell tumor (MCT) is second most common malignancy in dogs. The biological behavior of MCT is variable therefore a lot of effort is taken to find prognostically relevant factors. Some microscopic features correlate with clinical outcome of MCT, therefore several histological grading systems have been developed. The aim of our study was to assess prospectively the clinical outcome of MCT in Latvian dogs depending on completeness of surgical excision and histopathological grade using newest proposed grading system by M.Kiupel et al. (2011).

**MATERIALS AND METHODS.** Fifteen client-owned dogs diagnosed with MCT were enrolled in the prospective study. Histological grading was done according to scheme proposed by M.Kiupel et al. according to which MCT is assigned to one of two grades – low or high depending on quantifiable microscopic criteria. The surgical margins were evaluated as complete, close or incomplete if they were more than 3 mm, 1 to 3 mm or less than 1 mm wide, respectively. The animals were followed for at least 12 months after surgery. Follow-up included clinical examination of tumor area and draining lymph nodes and abdominal ultrasound. The animal use was permitted by Food and Veterinary Service of Latvia (license No. 45).

**RESULTS.** There were 9 (60%) low grade tumors and 6 (40%) high grade tumors. The tumor control rate 12 months after initial surgery (no recurrence) was 67% for low grade and only 17% for high grade tumors. Median time to tumor recurrence was 304 days for low grade and 27 days for high grade MCT. Survival time for dogs with low grade MCT was 409 days compared with only 60 days for dogs with high grade tumor. Dogs with high grade tumors had significantly shorter survival time and worse prognosis than dogs with low grade tumors ( $p=0.013$ ).

Median time to MCT recurrence and median survival time was 326 and 376 days for complete excision, 129 and 60 days for marginal and 32 and 55 days for incomplete excision, respectively. Complete excision was associated with lower possibility and longer time to tumor recurrence, as well as longer survival, however marginal surgical border status did not have significant impact on time to tumor recurrence and survival. It was found that tumor duration but not tumor size had significant impact on surgical margin status ( $p=0.047$ ). However, tumor size significantly affected survival time with larger tumors being correlated with shorter survival ( $p=0.03$ ).

It was also found that median tumor size (4.3 cm in diameter) was greater and median tumor duration (121 days) in Latvian dogs was longer than reported previously in the literature. These data suggest that surgeries for MCT in Latvia are delayed.

**CONCLUSIONS.** The results of our study confirm that grade, tumor size and recurrence are significant factors for MCT prognostication. Surgical excision of MCT must be done as soon as tumor is detected. Determination of histological grade of the tumor is essential for clinician to determine prognosis and to choose appropriate additional treatment.