



## Prognostic impact of Ki67 count in Canine Splenic Hemangiosarcoma: a preliminary study

### Objective:

In canine splenic hemangiosarcoma (HSA):

- ✓ To compare the expression of Ki67 assessed using an optical grid (Ki67C) and by image analysis on 500 cells (Ki67LI);
- ✓ Verify the prognostic impact of Ki67 expression;
- ✓ Define a prognostically relevant Ki67 cut-off value.

### Materials and Methods:

**Inclusion criteria:** Histologic diagnosis of splenic hemangiosarcoma  
Splenectomy and staging at the time of presentation or referral  
Follow up every 2 or 3 months

**Immunohistochemistry:** Heat-induced antigen retrieval with pH 6.0 citrate buffer  
Anti-Ki67 primary antibody (clone MIB-1) incubated at 4°C overnight

**Ki67 evaluation:** Ki67LI: percentage of Ki67 positive cells over a total of at least 500 neoplastic cells for each case on pictures acquired at 40x.  
Ki67C: the average number of positive cells using a 1 cm<sup>2</sup> optical grid performed in 5 high power fields at 40x.

### Results:

Thirty-one canine splenic HSA: 3 stage I, 17 stage II and 11 stage III. Mean mitotic count: 28.2; median Ki67LI and Ki67C: 26 and 51 respectively. Using a **cut-off value of 55**, Kaplan-Meier survival curves showed an association between overall survival and Ki67C. **Ki67C** maintained its **prognostic value** on multivariate analysis in addition to treatment and clinical stage, supporting the role of **Ki67C** as an **independent prognostic parameter**.

**Conclusions:** Based on these results we propose a diagnostically applicable cut-off value of 55 for Ki67 immunohistochemistry as prognostic parameter for canine splenic HSA.

**Future Proposal:** Further studies on larger caseloads may be useful to confirm and/or refine these results, and to investigate the predictive value of Ki67.

**References:** Rozolen JM, et al. Investigation of Prognostic Value of Claudin-5, PSMA, and Ki67 Expression in Canine Splenic Hemangiosarcoma. *Animals (Basel)*. 2021;11(8):2406.

Moore AS, et al. Evaluation of clinical and histologic factors associated with survival time in dogs with stage II splenic hemangiosarcoma treated by splenectomy and adjuvant chemotherapy: 30 cases (2011-2014). *J Am Vet Med Assoc*. 2017;251(5):559-565.

