

# CLINICAL OUTCOMES OF 17 LATVIAN CATS WITH INJECTION SITE SARCOMA TREATED WITH SURGERY ALONE

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**INTRODUCTION.** Injection site sarcomas (ISS) are malignant cutaneous tumors of cats that develop as rare side effect after administration of vaccines and long-acting medications. ISS are commonly diagnosed in Latvia which may be attributed to mandatory annual vaccination against rabies until May 2013 and available vaccines. In the last three years 97% of sold rabies vaccines for which cats are one of target species were inactivated vaccines with aluminum salts or aluminum alkaline adjuvants. Aluminum compounds are thought to be associated with ISS development. Estimated incidence of ISS in Latvia in 2013 was 7.5 per 10 000 feline vaccinations against rabies, and ISS were 14% of all feline biopsy submissions. The aim of this study was to evaluate the clinical outcome of cats with ISS in Latvia where only treatment modality available is surgery.

**MATERIALS AND METHODS.** Seventeen client-owned cats with ISS were prospectively followed after surgical removal of the tumor between 2010 and 2014. Follow-up consisted of periodic clinical examination of tumor area and 3-view thoracic radiography. All cats were followed for at least 1 year unless they died earlier. Median follow-up period was 286 days (range 135-1030). The animal use in this study was permitted by Food and Veterinary Service of Latvia (Food and Veterinary Service license No. 45 for animal use in the experiment).

**RESULTS.** In 12/14 (86%) cats from which entire tumor was submitted surgical margins were incomplete. In 11/17 (65%) cats tumor recurred after surgery; median time to recurrence was 160 days (range 42-358). Two months after surgery 80% of cats were tumor-free, 5 and 12 months after – 53% and 33% respectively. Eight of 17 (47%) cats were euthanized due to progression of ISS; median survival time was 400 days. In those cats that developed recurrence and were treated with repeated surgery (n=6), survival time was longer (median 543 days; range 178-1030) than in cats that did not have repeated surgery (n=5; median 293 days; range 135-388).

**CONCLUSIONS.** ISS is common tumor in Latvian cat population that is characterized by high recurrence rate that leads to decreased survival time in affected cats. Repeated surgery may be an effective local treatment after ISS recurrence.