

**PROGETTI DI “RICERCA CORRENTE 2017”**  
**RELAZIONE FINALE**

**N. identificativo progetto: IZS LT 04/17 RC**

**Progetto presentato da:**

**ISTITUTO ZOOPROFILATTICO SPERIMENTALE**

**LAZIO E TOSCANA “M. ALEANDRI”**

**Area tematica: Sanità animale – Interventi operativi**

**Titolo del progetto: Il registro tumori animali nella Regione Lazio: sviluppo di amplificazione del modello e sviluppo del “data sharing” per l’integrazione multidisciplinare in ottica One Health**

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## **SUMMARY**

### **The animal cancer registry in the Lazio Region: amplification of the model and development of "data sharing" for multidisciplinary integration from a One Health perspective**

**Key words:** Animal cancer registry, Lazio, Proportional Morbidity Ratio (PMR), Incidence

#### **General objectives**

- Recruit the largest number of cases of canine and cat cancer in the Lazio Region
- Determine the population at risk
- Organize a structured database to use as a base for epidemiological analysis of animal tumors and comparative pathology studies

#### **Specific objectives**

- Engage an increasing number of veterinary practitioners to submit samples for histopathology to the IZSLT Increase the flow of biopsy and autopsy samples to the IZSLT aimed at the histopathological diagnosis of neoplasms
- Estimate the canine population of the Lazio Region, by verifying the reliability of the data provided by the regional information system of the Canine Registry
- Describe the tumors diagnosed in dogs and cats and estimate the incidence of malignant neoplasms in dogs for the provinces of Lazio
- Produce studies and reports of veterinary oncology and comparative oncology

#### **Methodology**

- Histological diagnosis
- Descriptive analysis of tumors
- Estimation of the incidence of malignant tumors
- Calculation of Proportional Morbidity Ratio (PMR)

#### **Results**

5203 samples of suspected tumours were analysed in the period between February 2018 and December 2020. The samples derived from dogs (81%) and cats (19%) from the provinces of Rome, Latina and Viterbo. 76% of them were collected from the province of Rome, 18% of Latina and 6% of Viterbo. 70,6% of the samples were diagnosed as neoplasms, 29,4% as non neoplastic lesions. A higher rate of tumours was observed in females (58%). Purebred dogs were more represented than mixed-breed ones, whereas mixed-breed cats showed a higher occurrence of tumours. More malignant than benign tumours were diagnosed in both species, with cats showing an occurrence rate of malignancies of 89%.

The most commonly affected organs were skin, subcutis and mammary gland in both species and digestive system in cats.

Incidence of malignancies was estimated for the year 2018: we calculated incidence in dogs from the province of Rome and in cats from the area of a local sanitary agency (ASL) in the province of Rome.

We calculated the proportional Morbidity Ratio (PMR) and compared the risk of malignant tumours and the risk of tumours for each organ between females and males of canine and feline species. Based on the PMR obtained, no differences were observed in the tumour behaviour between males and females in either species. On the other hand, female dogs showed a higher PMR of subcutis tumours than males. PMR also suggested a lower risk of tumours of the hematopoietic and reticuloendothelial system in female cats than in males.

## **Discussion and conclusions**

The dataset obtained defines an overview of the occurrence of tumours in companion animals of our region. Through the database developed, it will be possible to observe spatiotemporal variation in the occurrence of cancer and to consider data from the public health perspective.

We estimated a lower incidence than what was reported by other authors. This result could be underestimated as several veterinary practitioners submit samples of suspected tumours to other laboratories. Thus, an action plan was developed in order to recover these data and fill in this gap in the Latium region.

Another limitation of this study is the bias for skin and easily accessible tumours in the dataset. Tumours of internal organs, that can only be suspected through diagnostic imaging and are less easily accessible through the surgical approach, are likely underestimated.