

RETROSPECTIVE EPIDEMIOLOGICAL ANALYSIS OF CANINE MAST CELL TUMOURS DIAGNOSED SUGGESTS AGE AND BREED AS RISK FACTORS

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Introduction

- Mast Cell Tumors (MCT) are common malignant tumors in dogs but information on risk factors is sometimes conflicting

Materials and Methods

- 905 MCT diagnosed between 2017-2021.
- Age, sex, anatomical location, requesting clinic postal-code
- Incidence Risk and Relative Risk using dogs registered in the Portuguese Companion Animal Registry System (SIAC)

Objective

Signaling risk factors for the development of canine MCT

Results

Age, Sex and Breed

Mean age at diagnosis: **8.3** DP=2.9
51.2% Females; 48.8% Males

Most common breeds (total 55 breeds):

Mixed breed (n=309)

Labrador Retriever (n=197), Boxer (n=67), French Bulldog (n=64)



French Bulldog more represented by males (n=40, Z50% p=0.04)
Shar-pei more represented by females (n=13, Z50% p=0.01)

Median age comparison by breed:

Pug, Shar Pei, French Bulldog, Boxer present lower age at diagnosis (table 1)

Table 1 – Age characterization regarding breed. Median comparison performed by a Kruskal Wallis followed by a Dunn's test. (p<0.05) A,b,c,d

	n	Min	Q1	median	Q3	Max
Mixed Breed	262	1	7	9 ^d	11	19
Boxer	62	2	5	7 ^{abc}	9	13
French Bulldog	54	1	5	7 ^a	8	13
Shar Pei	14	3	4	6 ^{ab}	9	12
Pug	13	3	5	6 ^{ab}	8	9

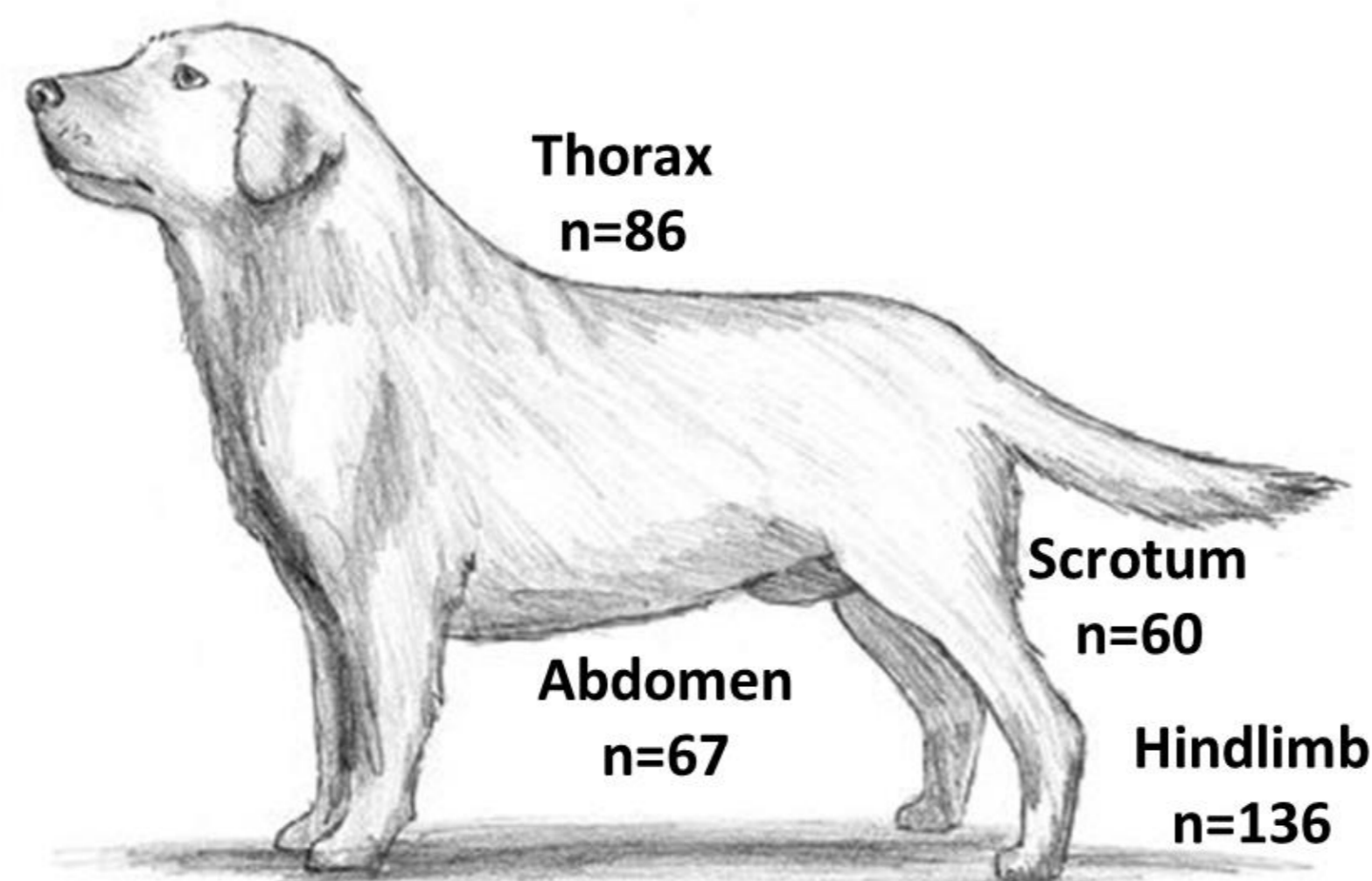


Anatomical Location

MCT diagnosed in 23 different locations

Skin, Mucosal and Visceral locations (ex: small intestine)

More common locations:
(All skin)



Scrotum:

Highest mean age when compared with all other locations (table 2)

Table 2 – Detailed information about mean age by anatomical location *p<0.01. Only presented anatomical locations with n>10. SD= standard deviation

Anatomical location	n	Mean	SD
Hindlimb	136	8.0	2.7
Thorax	86	7.9	3.1
Abdomen	67	7.8	2.7
Scrotum	65	9.0*	2.9
Face	27	8.1	4.2
Forelimb	27	7.8	3.7
Cervical Region	22	7.5	2.9
Digit	19	7.9	2.5
Perianal Region	16	8.8	2.1
External ear	14	8.9	1.7

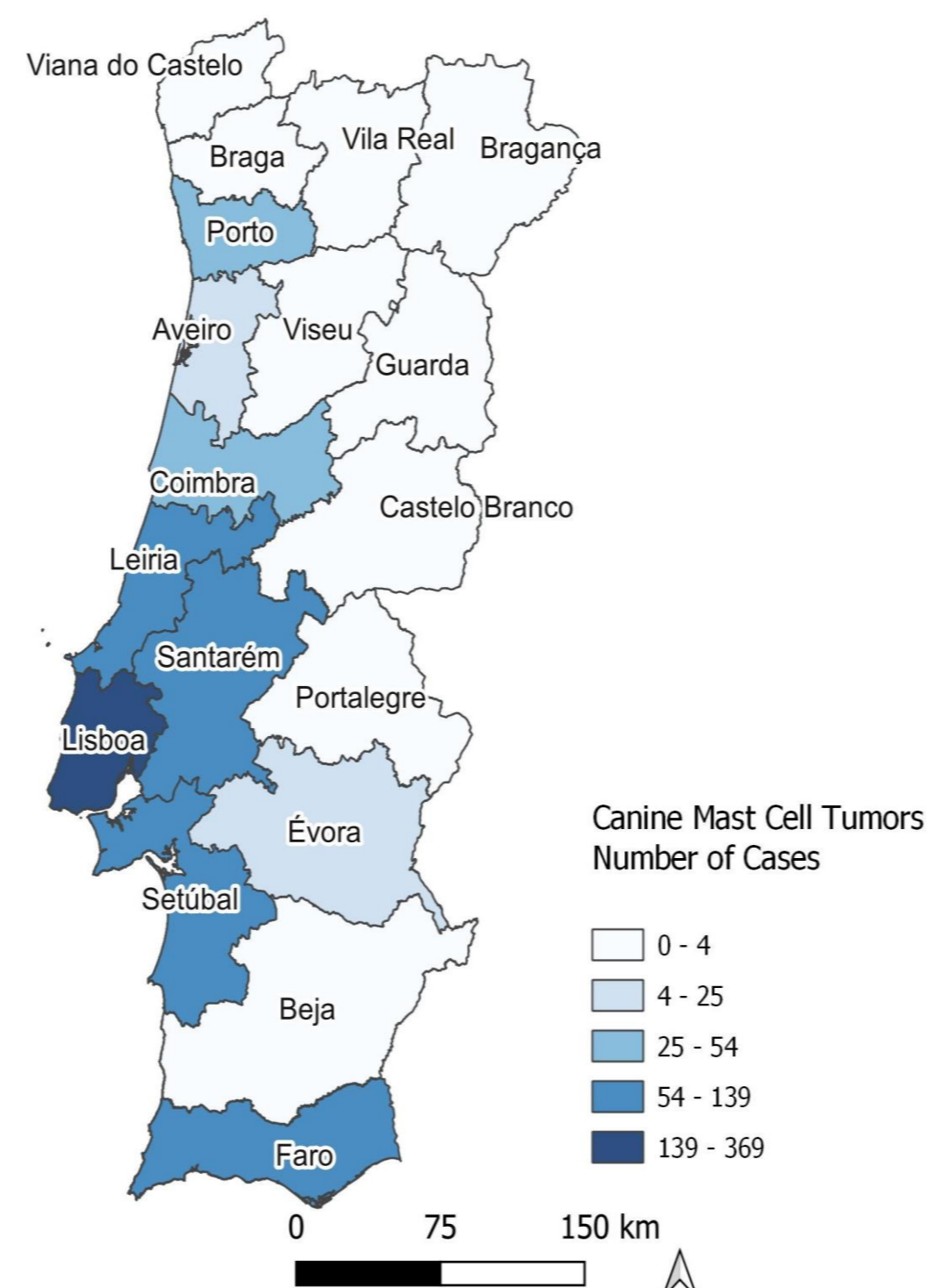
Geographical Analysis, Incidence and Relative Risk

MCT from 19 districts

Mainland Portugal and Islands

The 3 more common districts:

- Lisboa (n=369)
- Setúbal (n=139)
- Leiria (n=83)



Using SIAC's population as denominator :

MCT **incidence rate of 9.3 cases /10,000 dogs**

Breeds with highest Relative Risk:

Boxers (7.1, p<0.01), Shar-peis (6.3, p<0.01); Golden Retrievers (5.9, p<0.01).



♂ Boxers (9.9, p<0.001), Golden Retriever (6.8, p<0.001); French Bulldogs (4.5, p<0.01).



♀ Shar-peis (8.0, p<0.001), Golden Retrievers (5.2, p<0.001); Boxers (4.6, p<0.001)



Conclusions

✓ Results suggest **age and breed** as risk factors associated with canine MCT development