INFLUENCING FACTORS IN THE STANDARDIZATION OF HAIR CORTISOL CONCENTRATIONS FOR THE ASSESSMENT OF CHRONIC STRESS IN DOMESTIC DOGS (*CANIS LUPUS FAMILIARIS*)

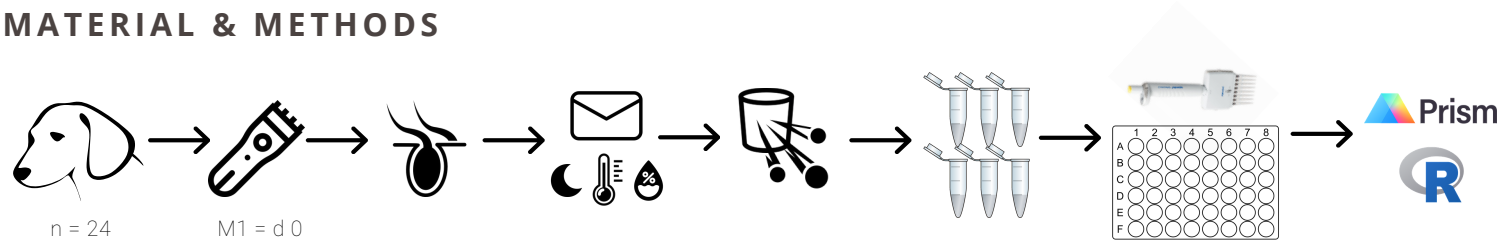
INTRODUCTION

Hair is a useful matrix for determining steroid hormones and is used in multiple species, including the dog. Elevated cortisol levels in the hair have been linked to situations or environments causing chronic stress.

OBJECTIVES

This study aimed to evaluate if hair cortisol concentration (HCC) of domestic dogs (*Canis lupus familiaris*) is a good tool to reflect chronic stress and to see how hair color, age, sex and size influence the standardization of the HCC.

MATERIAL & METHODS



n = 24
Age = 1 to 13 yr

M1 = d 0
M2 = d 15

RESULTS

No statistically significant differences were found between M1 and M2 (p = 0,68).

Nevertheless, of all the variables analyzed on M2 with the mixed effects model, the only one that influenced the hair HCC was the age, specifically elderly animals showed higher HCC than young (p = 0,02) and adult dog groups (p = 0,03).

In the hair growth rate, statistically significant differences were found between short and long hair dogs (p = 0.03).

CONCLUSIONS

Age was a factor that affected the concentration of cortisol in dog hair (p = 0,01). The rest of included variables had not significant effects. Hair growth rate was higher in long hair than in short hair dogs. All these variables need to be considered to standardize hair cortisol values for the species.

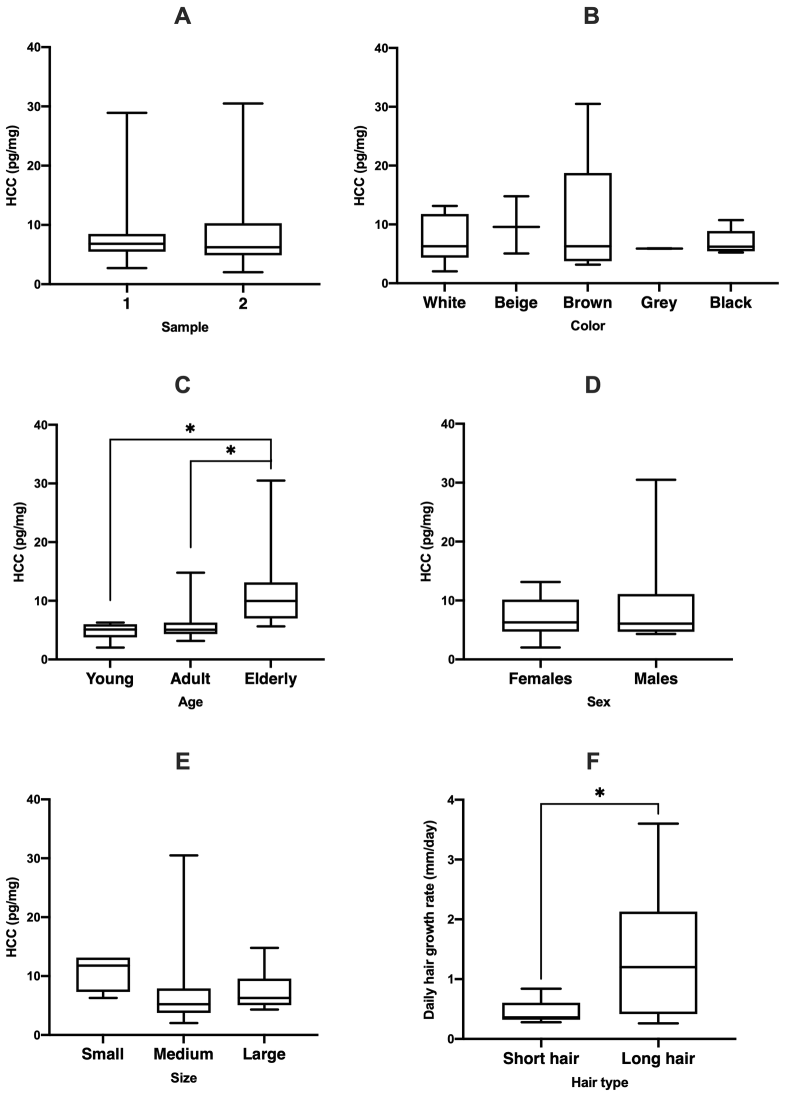


Figure 1. HCC (pg cortisol/mg hair) by time (A), color (B), age (C), sex (D), and size (E), Diary growth rate (F)

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