

MODERATE HEAT BURNS IN DOGS: A CASE SERIES AND DISCUSSION

OBJECTIVES

- Obtain information about the development, diagnosis, treatment and prevention of moderate heat burns (MHB) occurring in veterinary clinics.
- Report and discuss ten cases of dogs affected by MHB.

MATERIAL AND METHODS

Cases selected: 10 dogs attending at Dermatology Unit of Hospital Clínic Veterinari (HCV) at the Universitat Autònoma de Barcelona (UAB) during from 2017 to 2020 presenting:

- Lesions corresponding to ulcerative-necrotizing dermatitis.
- History of thermal exposure to a heating source.

RESULTS

Coat lenght (number of cases)	Weight	Duration of exposure	Time between exposure and diagnosis
Short: 6	11kg	1h50min	13,5 days
Medium: 2	[1,37-24,7kg]	[40min-3h]	[1-21 days]
Long: 2*			

Table 1: epidemiological data (*Clipped on the area of the lesion).

Lesions

Erythema (70%) ➡ Eschars (70%) ➡ Crusts (30%) ➡ Ulcers (20%)

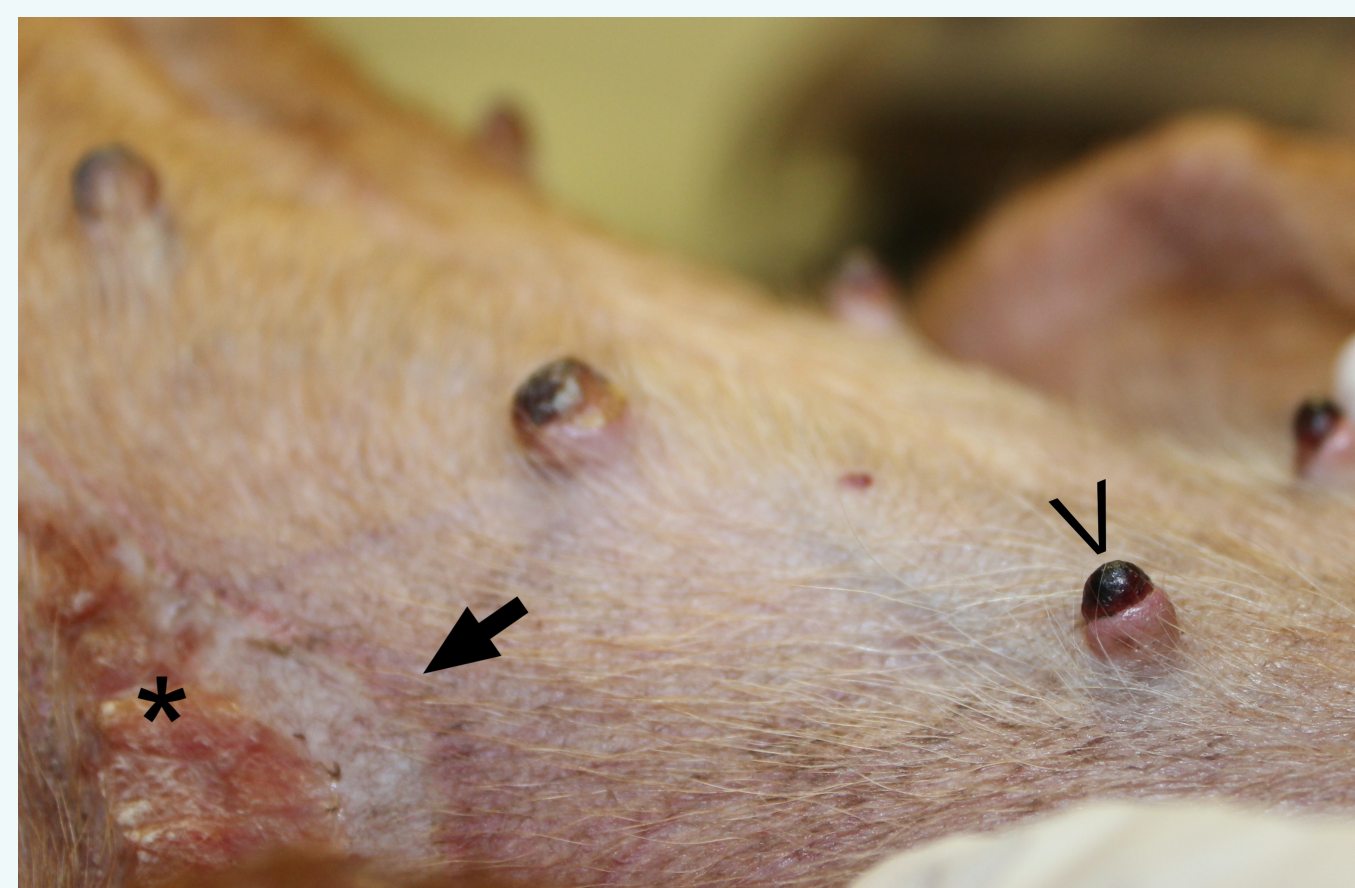


Figure 1: Ulcer (*), crusts (>) and perilesional erythema (➡).

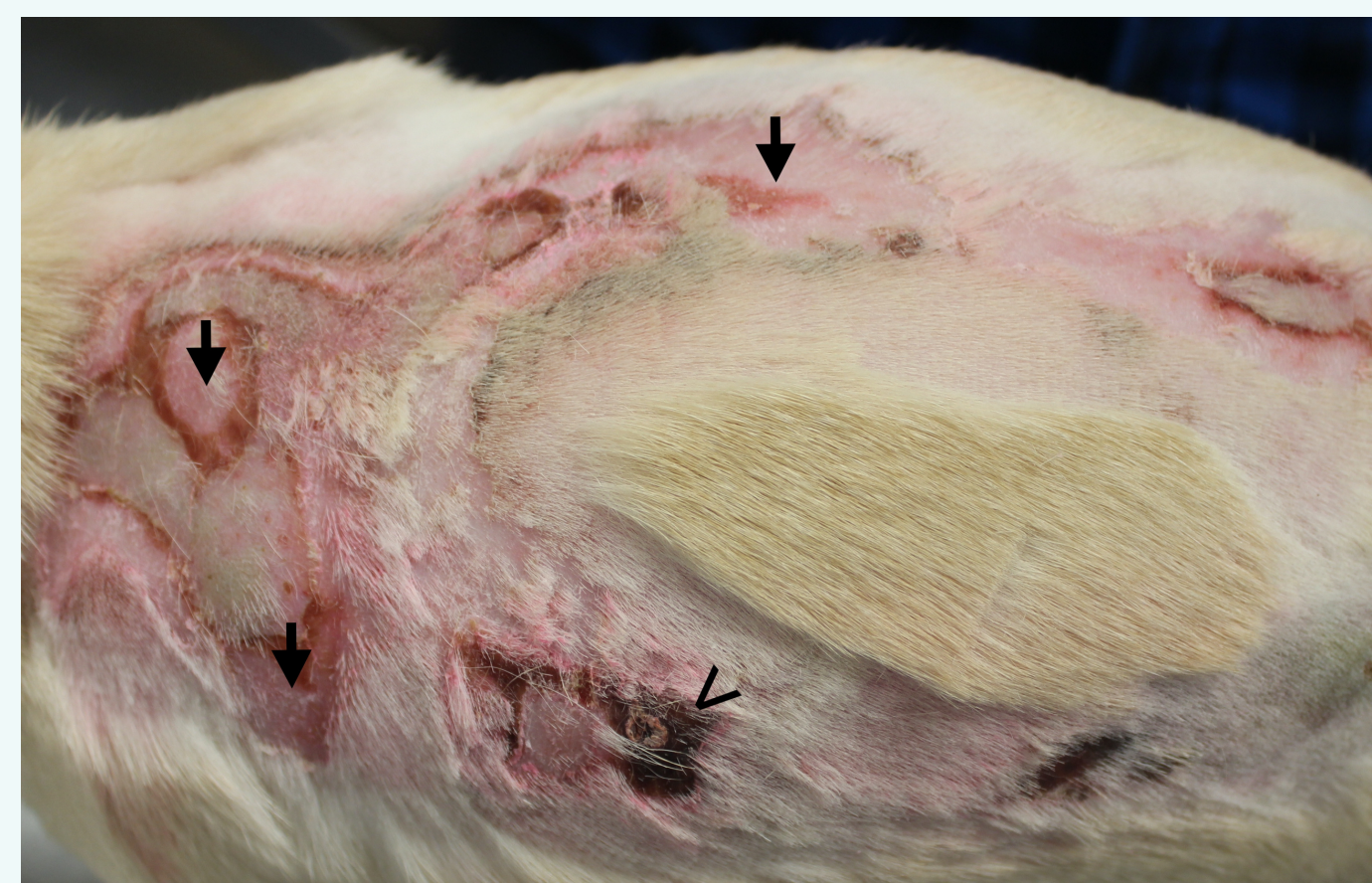


Figure 2: Eschar (>) and erythema (➡).

Treatment

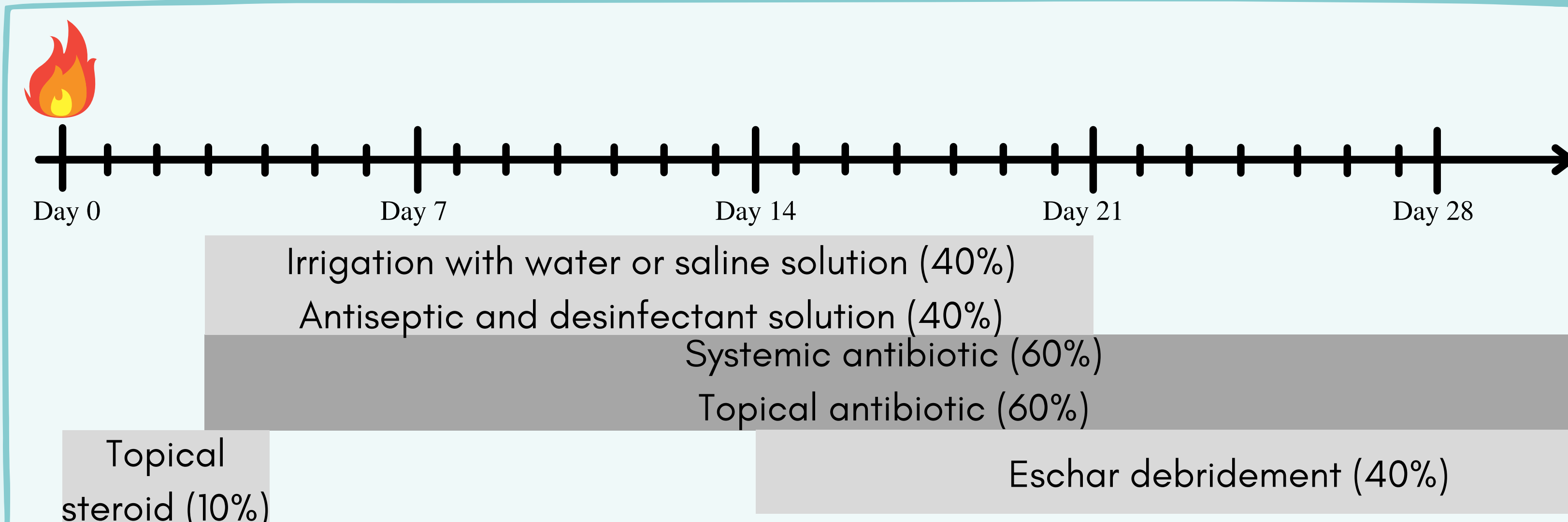


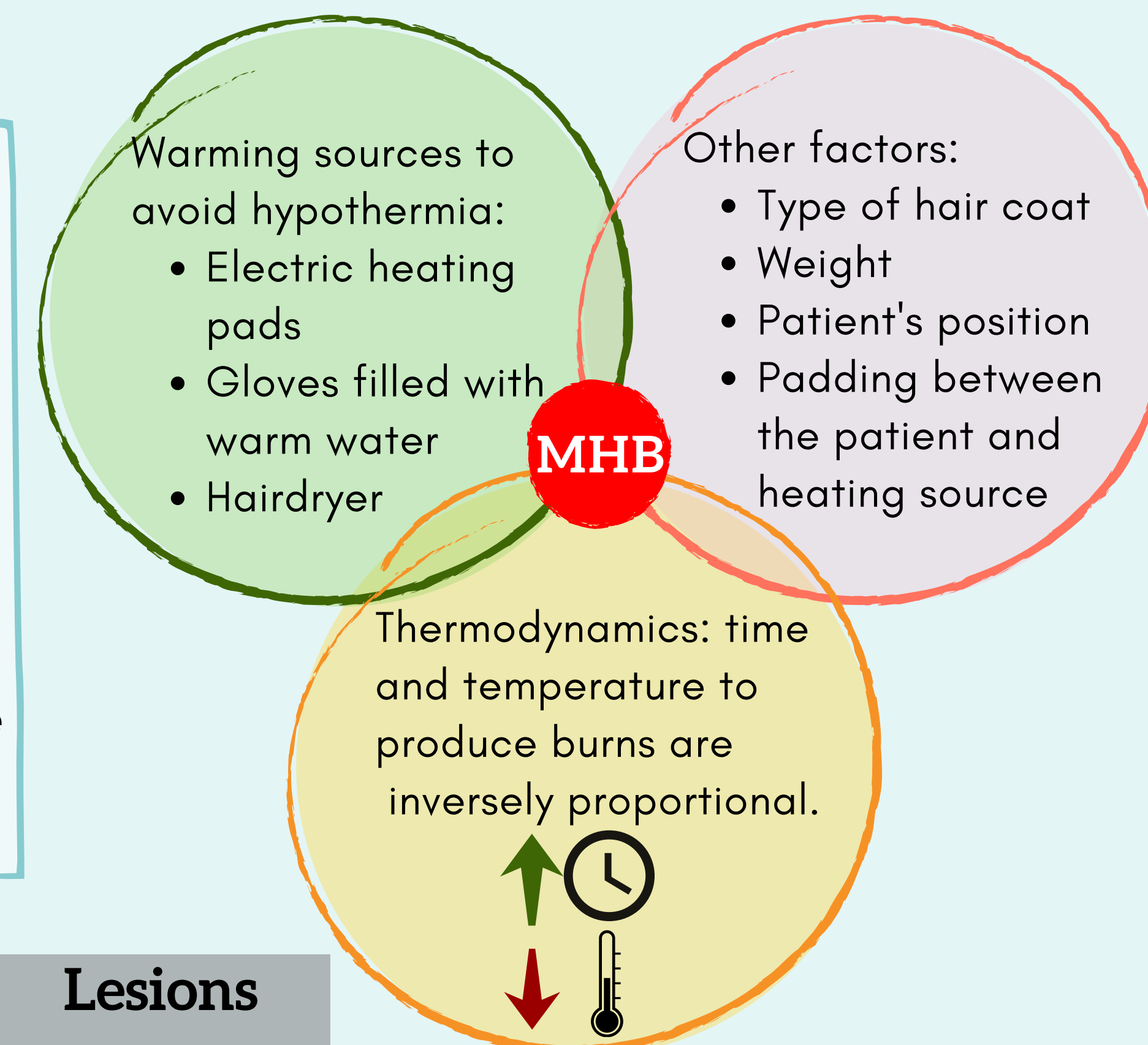
Figure 3: Frequency and period of treatment starting from the thermal exposure.

DISCUSSION

- Short hair coats: ↑ contact with the heating pad → ↑ risk of MHB.
- Small breeds: ↑ Hypothermia during surgery and ↓ time required to produce MHB.
- It was difficult to detect MHB before 2 weeks.
- Correlation between patient's position and lesions' distribution:
 - ✓ Heating pads (anesthesia)
 - ✗ Other causes: gloves filled with warm water (hospitalization).
- The 3 zones of Jackson's model were defined: pale area (zone of stasis) surrounding eschar (zone of coagulation) and erythema on the periphery (zone of hyperaemia).
- The treatment was adapted depending on the day of diagnosis.

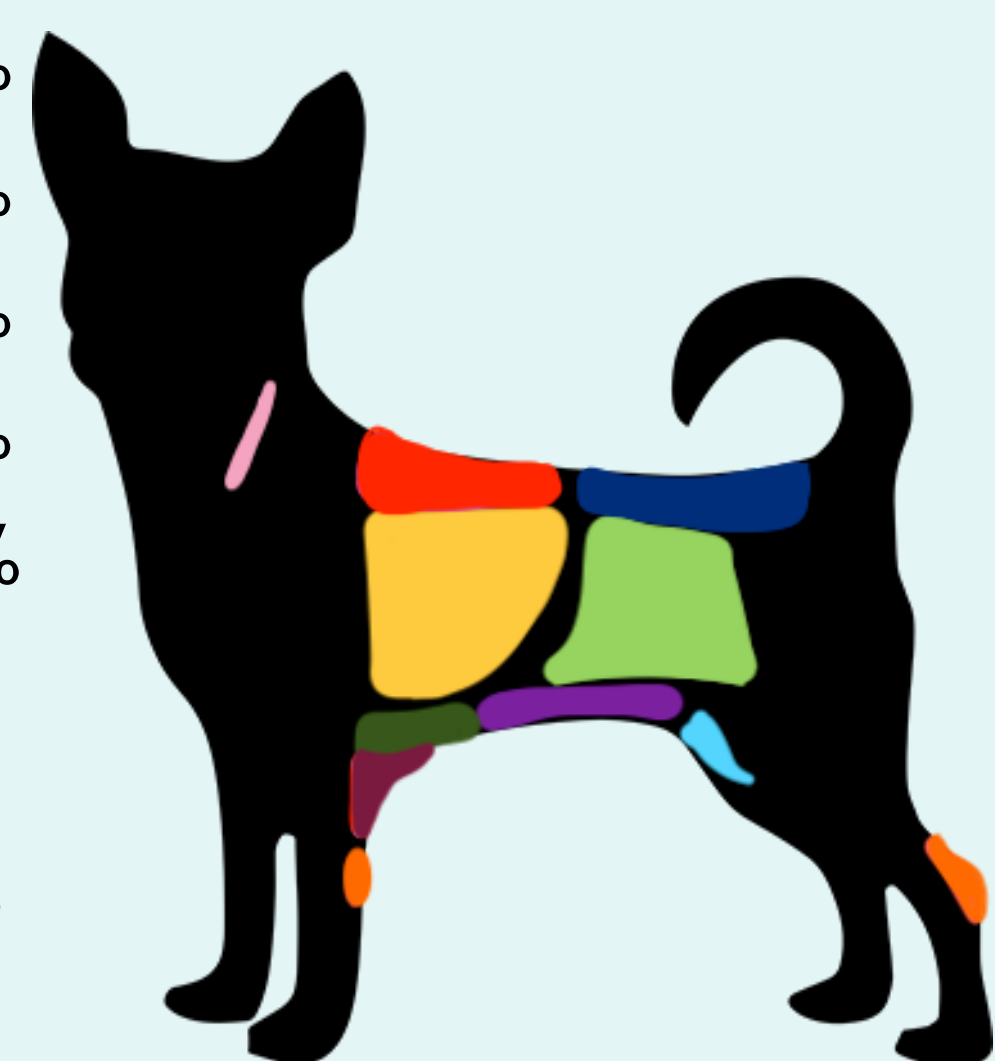
INTRODUCTION

Moderate heat burns (MHB) are thermal injuries produced after a long exposure at moderate temperatures. The heating sources used to prevent hypothermia are the main causes in veterinary clinics. Other factors increase the risk of developing MHB.



History	Position of the patient	Lesions distribution
1 Anesthesia	Sternal	50%
2 Anesthesia	Sternal	30%
3 Anesthesia	Left recumbency	30%
4 Anesthesia	Ventro-dorsal	20%
5 Anesthesia	Sternal	20%
6 Anesthesia	Left recumbency	20%
7 Anesthesia	Ventro-dorsal	20%
8 Hospitalization	Unavailable	10%
9 Hairdresser	Unavailable	10%
10 Sun exposure	Lat. recumbency	10%

Table 2: position of the patient and frequency of distribution of the lesions.



Outcome

- Time needed for MHB to heal: **4,4 weeks**.
- In some cases, if the lesion healed by first intention, the time required to heal was shorter: **2 weeks**.
- The burns healed by retraction and reepithelization.



Figure 3: MHB healing

CONCLUSIONS

- Although preventive measures are used to avoid thermal injuries, MHB are still detected in veterinary hospitals.
- Dogs with short hair coats and small breeds seem to be at higher risk to develop MHB.
- The tutors of the predisposed dogs should be advised of the risk.
- Important to prevent hypothermia in these patients. If hypothermia is present, preventive measures should increase:
 - ✗ Heating sources onto wet areas of the body.
 - ✓ Padding between the patient and heating source.
 - ✓ Check the temperature of gloves filled with warm water or similar heating sources used during hospitalization.
- Important to diagnose early the lesions associated with MHB in order to start the necessary measures to prevent progression.