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[Marchegiani A, Spaterna A, Cerquetella M, Tambella A M, Fruganti A and Paterson S. Fluorescence biomodulation in the management of canine interdigital pyoderma cases: a prospective, single-blinded, randomized and controlled clinical study. Vet Dermatol 2019; 30:371-e109.]

### INTRODUCTION

Canine interdigital pyoderma (CIP) is a chronic inflammatory skin condition affecting interdigital spaces, footpads and nail folds or combinations thereof. The condition is a complex, multifaceted disease and it is frustrating both to diagnose the underlying disease and institute appropriate therapy. It can be associated with allergy (atopic dermatitis, cutaneous adverse food reaction), ectoparasites (*Demodex canis*), endocrine disease (hypothyroidism, hyperadrenocorticism), foreign bodies and conformational problems. Secondary infection is a common sequela to the underlying disease. Localized areas of folliculitis can progress to furunculosis leading to a significant foreign body reaction due to the release of keratin into the skin with the formation of fistulae and draining tracts.

Resolution of the infection often requires prolonged courses of antibiotics and relapse is not uncommon (even if the underlying trigger is managed) due to the persistence of foreign material within the skin. In addition to chronic antibiotic therapy, topical or systemic anti-inflammatory drugs including glucocorticoids and cyclosporin can be used to manage the foreign body reaction in the dermis (follicular material).



# AIM OF THE STUDY

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The aim of the study was to **evaluate and compare** the effect of Fluorescent Light Energy (FLE) administered concurrently with systemic antibiotics in comparison to systemic antibiotics alone on clinical manifestations of CIP.

## MATERIAL AND METHODS

A total of 36 dogs with interdigital lesions were randomly assigned to two groups:

- Group A: systemic antibiotics<sup>\*</sup> alone 17 dogs
- Group B: systemic antibiotics<sup>\*</sup> + FLE 19 dogs

Response to therapy was assessed by reduction in lesion scores and improvement in lesion site cytological findings.

Dogs were scored over a 12-week period on the basis of two measured parameters:

- Clinical score of four lesion types (0-4 scale)
  - Haemorrhagic vesicles/bullae
  - Fistulae with draining tracts
  - Haemorrhagic crust/papules
  - Ulcers/erosions
- Cytological score of the number of neutrophil engulfing bacteria (0-4 scale)
- \* Antibiotics determined by culture and sensitivity testing performed at the time of enrollment.



#### RESULTS

At enrollment, no significant difference was present between the clinical scores for the two groups.

Time to clinical resolution and clinical and cytological scores:

- From Week 3 to study end, there was a statistically significant improvement in the time to clinical resolution in favour of Group B (FLE + systemic antibiotics).
- At Week 6, 84.6% of dogs treated with FLE + antibiotics achieved clinical resolution compared to 26.5% of dogs treated with antibiotics alone (Figure 1).
- From Week 3 to study conclusion, there was a statistically significant improvement in the mean clinical (Figure 2) and cytological scores in favour of Group B.

FIGURE 1 Percentage of dogs showing clinical resolution for each treatment group. P-value based on two-sided Fisher's Exact test. Table corrected from original publication







## CONCLUSION

Canine interdigital pyoderma is a painful and debilitating disease in which the quality of life of dogs and their owners can be profoundly affected. It is a frustrating disease that commonly requires prolonged courses of antibiotics.

In this study, the use of Fluorescent Light Energy (FLE) was able to accelerate the clinical resolution and to reduce the length of the course of antibiotic therapy required to treat CIP, when used as an adjunct therapy with systemic antibiotics versus systemic antibiotics alone. Similar results were obtained in previous studies in dogs with superficial and deep pyoderma. The ability of FLE to support skin regeneration in both infectious and non-infectious inflammatory skin conditions has also been described in human literature, including studies showing its ability to down-regulate inflammatory mediators.



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