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Fluorescence light energy in the management of multidrug resistant canine pyoderma cases: a prospective exploratory study

Andrea Marchegiani, Alessandro Fruganti, Matteo Cerquetella, Andrea Spaterna

Università degli Studi di Camerino, Scuola di Bioscienze e Medicina Veterinaria

Corresponding author: Andrea Marchegiani (andrea.marchegiani@unicam.it)

The increasing in prevalence of staphylococcal antimicrobial resistance has been also associated with pyoderma in dogs [1,2]. In addition, prolonged antibiotic treatment, as often needed in severe cases of pyoderma, has been related to influencing possible development of multidrug resistance (MDR) [3]. Phovia™ System (Vetoquinol) is a fluorescence light energy device, which consists of a topical photoconverter gel and an LED lamp. A previous work has shown the ability of Phovia to improve pyoderma lesions as adjunct therapy to systemic antibiotics [4]. The aim of the present study was to evaluate the effect of the Phovia on clinical manifestations of multidrug resistant canine deep pyoderma (CDP) and canine pododermatitis (CP) when administered as solely management. The study protocol was successfully submitted to the Italian Ministry of Health (approval number 0004931-P-27/02/2017) and dog owners signed an informed consent prior to inclusion. Sixteen client-owned dogs affected by CP (5 dogs) and CDP (11 dogs) were scored using a dedicated scoring system [4] and received a single Phovia applications twice weekly, until clinical resolution, intended as total disappearance of the lesions, was achieved. A roughly two-millimeter layer of photoconverter gel was applied on the lesions and illuminated with a LED lamp for two minutes at approximately five centimeters distance. Mean time to achieve complete resolution was 5.2 ± 3.6 weeks (median 3 weeks) for CP cases and 4.2 ± 1.5 weeks (median 4 weeks) for CDP ones. Phovia shows promise as an aid to managing clinical signs while reducing reliance on antibiotics for MDR pyoderma. In this study, Phovia was responsible for the decrease of lesion scores and resolution of MDR pyoderma infection without any adjunct therapy, having a potential useful role to play in the management of such conditions, promoting complete clinical resolution of lesions.

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[2] Cain CL, Morris DO, O'Shea K, Rankin SC. Genotypic relatedness and phenotypic characterization of *Staphylococcus schleiferi* subspecies in clinical samples from dogs. *American Journal of Veterinary Research* 72:96–102, 2011.

[3] Summers JF, Brodbelt DC, Forsythe PJ, Loeffler A, Hendricks A. The effectiveness of systemic antimicrobial treatment in canine superficial and deep pyoderma: A systematic review. *Veterinary Dermatology* 23:305–330, 2012.

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