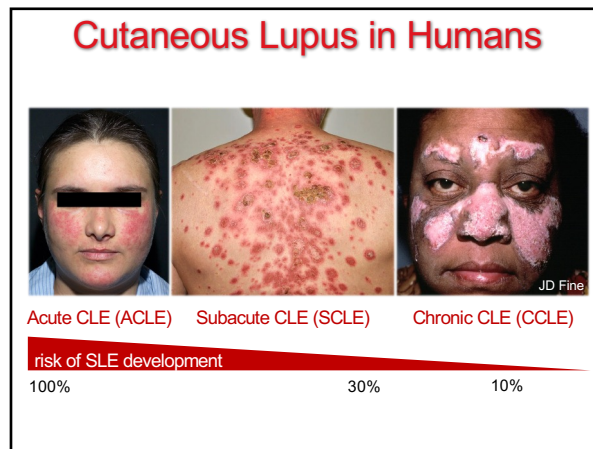
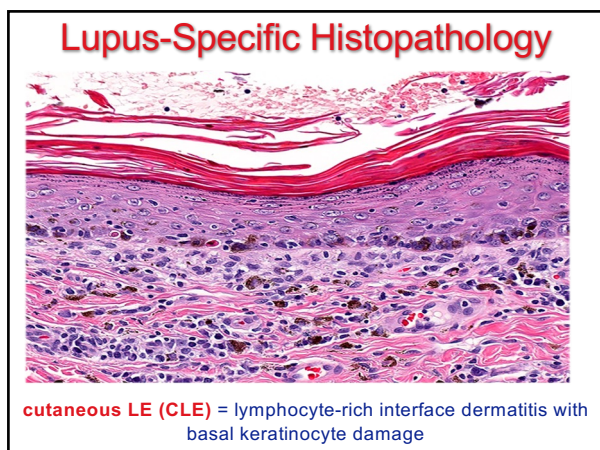


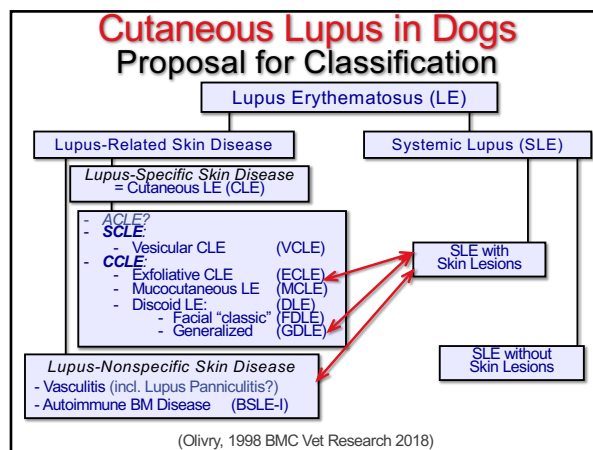
1



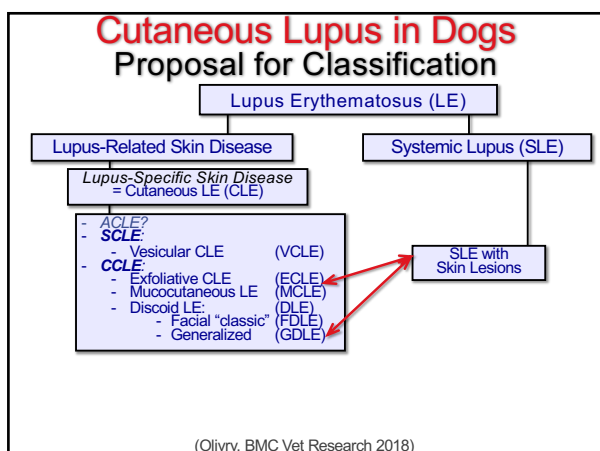
2



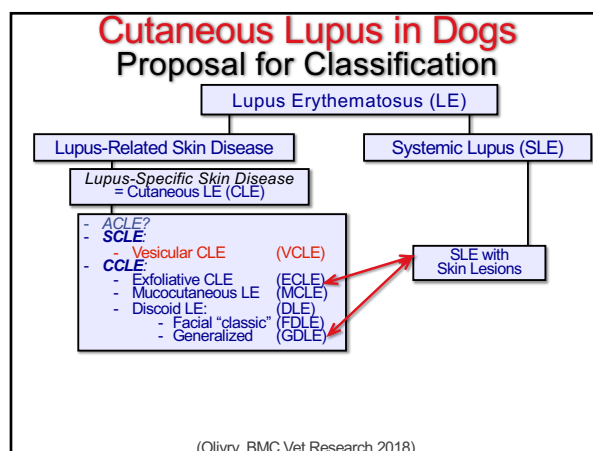
3



4



5



6

## Canine VCLE Historical Perspective

- 1969 hidradenitis suppurativa (Schwartzman, Br J Derm 1969)  
 1981 bullous pemphigoid (White, JAVMA 1981)  
 1983 erythema multiforme (Scott, JAAHA 1983)  
 1995 ulcerative dermatosis of Collies and Shelties (Ihrke, Current Vet Therapy XII 1995)  
 2001 vesicular cutaneous lupus erythematosus (Jackson, Vet Dermatol 2001)

7

## Canine VCLE Signalment (25 Dogs)

- breeds: 11 Shetland sheepdogs  
 7 rough collies  
 7 border collies  
 – female-to-male ratio: 0.9  
 – age of onset: 2.0-11.0 (mean: 5.5 years)

(Olivry, BMC Vet Research 2018)

8

## Canine VCLE Signalment and History (11 Dogs)

- signs arose in the summer: 8 dogs (73%)  
 – signs recurred every summer: 3 dogs (27%)



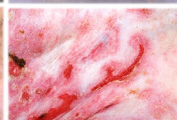
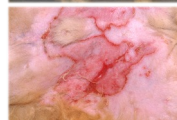
photosensitivity as in  
human SCLÉ?



(Jackson, Vet Dermatol 2004)

9

## Canine VCLE

rough  
colliesShetland  
sheepdogsborder  
collies

10

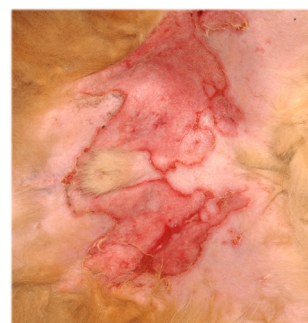
## Canine VCLE



presence of lesions in sparsely haired areas  
and mucocutaneous junctions

11

## Canine VCLE

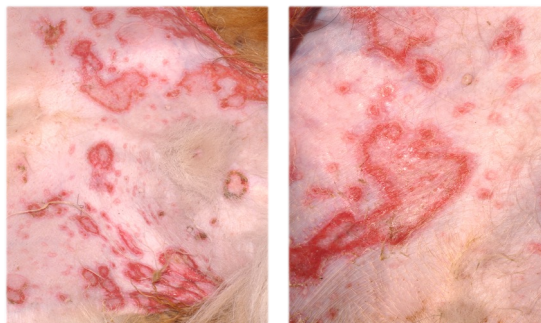


presence of lesions in sparsely haired areas  
and mucocutaneous junctions

12



### Canine VCLE



erythematous macules, target and polycyclic lesions that become eroded

13

### Canine VCLE



ulceration of older lesions

14

### Canine VCLE



involvement of mucocutaneous junctions

15

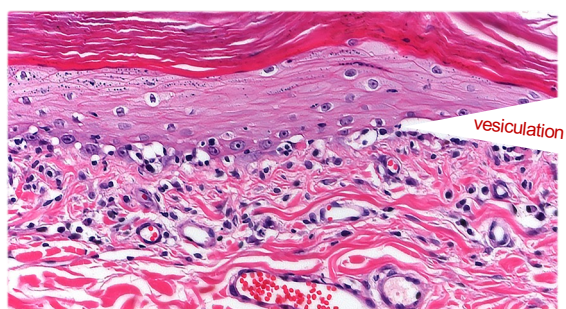
### Canine VCLE



involvement of mucocutaneous junctions

16

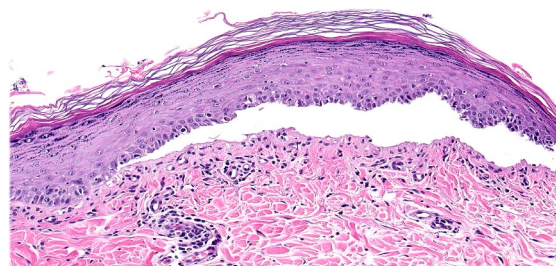
### Canine VCLE Histopathology



lymphocyte-rich interface dermatitis with keratinocyte vacuolation

17

### Canine VCLE Histopathology



confluence of basal cell vacuolization with intra-basilar clefting

18

### Canine VCLE Treatment with Glucocorticoids



Shetland sheepdog, MC, 7 years  
complete remission after 6 weeks of prednisolone at 1 mg/kg once daily

19

### Canine VCLE Treatment with Cyclosporine

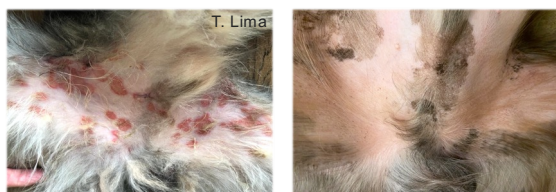


Shetland sheepdog, FS, 6.5 years  
complete remission after 4 months of cyclosporine at 10 mg/kg once daily

(Banovic, Vet Dermatol 2017)

20

### Canine VCLE Treatment with Oclacitinib



Border collie, MC, 7 years  
complete remission after 6 weeks of oclacitinib at 0.6 mg/kg twice daily

(First report of oclacitinib's effectiveness: AK Lima Res Soc Develop 2022)

21

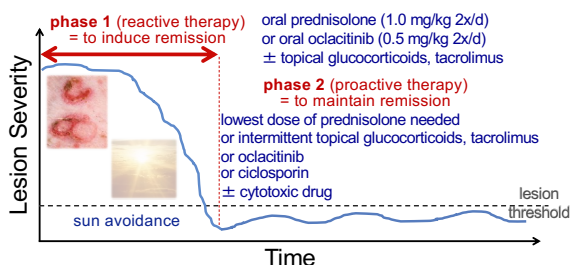
### Canine VCLE Treatment with Oclacitinib



Collie, MI, 6 years  
complete remission after 5 weeks of oclacitinib at 0.6 mg/kg twice daily

22

### Canine VCLE Treatment Recommendations (2023)



23

### Canine VCLE Prognosis and Outcome

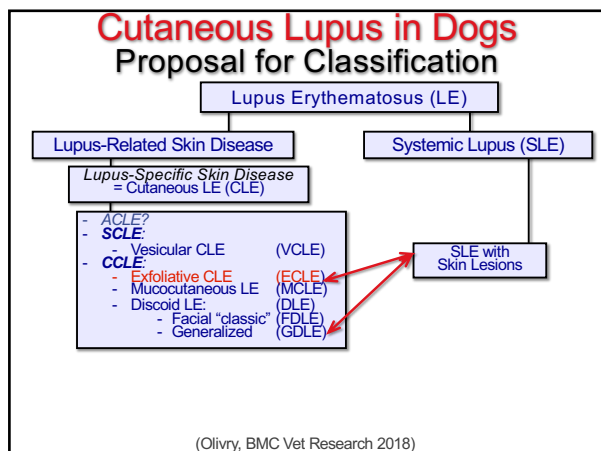


before treatment      after 6 weeks of prednisolone



24





25

### Canine ECLE Historical Perspective

1992 hereditary lupoid dermatosis  
(Gross, Ihrke and Walder book)

1999 exfoliative cutaneous lupus erythematosus  
(Olivry, NAVDF 1999)

**Clinical, histopathological and immunological characteristics of exfoliative cutaneous lupus erythematosus in 25 German short-haired pointers**

SHARON L. BRYDEN\*, STEPHEN D. WHITE‡, STANLEY M. DUNSTON†,  
AMANDA K. BURROWS\* and THIERRY OLIVRY†

*Veterinary Dermatology* 2005, 16, 239-252

26

### Canine ECLE Signalment and History (25 Dogs)

— **signalment:**

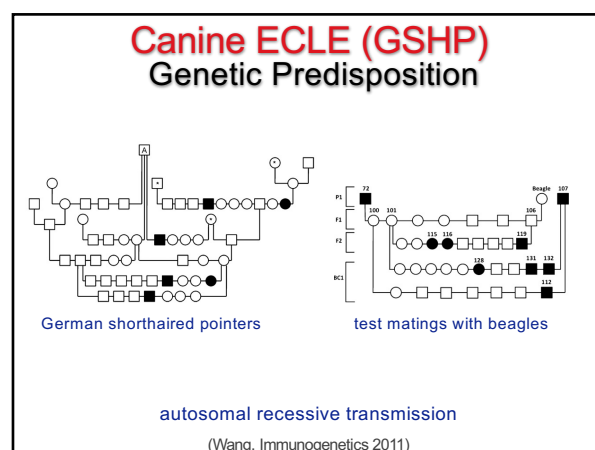
- breed: German Shorthaired Pointers; common ancestors; siblings affected
- sex: 17 females, 8 males; F:M ratio = 2.1
- age of onset: median: 10 months; range: 1.8 - 48m

— **first lesions:**

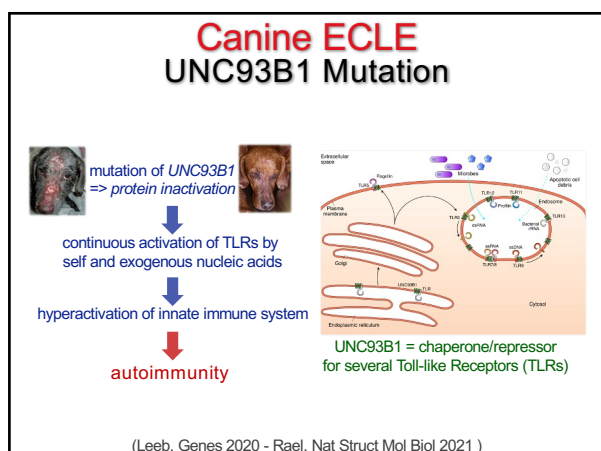
- distribution: muzzle, pinnae, head, dorsum
- type: erythema, scaling and alopecia

(Bryden, Vet Dermatol 2005)

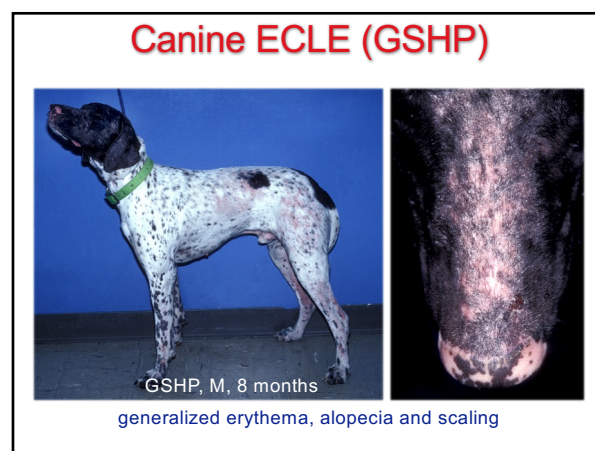
27



28

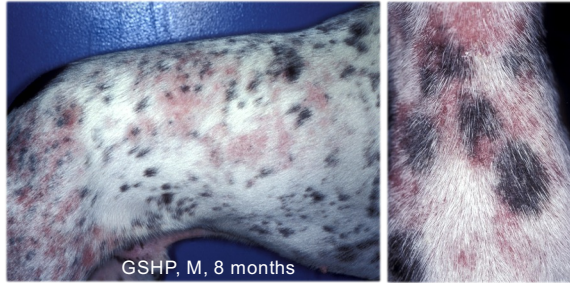


29



30

### Canine ECLE (GSHP)

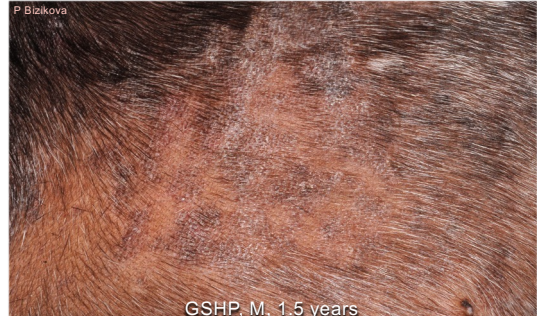


GSHP, M, 8 months

generalized erythema, alopecia and scaling

31

### Canine ECLE (GSHP)



GSHP, M, 1.5 years

scaly, dyspigmented patches and plaques

32

### Canine ECLE (GSHP)



GSHP, M, 1.5 years

scaly, dyspigmented patches and plaques

33

### Canine ECLE (Vizslas)



generalized erythema, alopecia and scaling

34

### Canine ECLE (Vizslas)



E. Vidémont

patchy erythema, alopecia and scaling

35

### Canine ECLE (Vizslas)



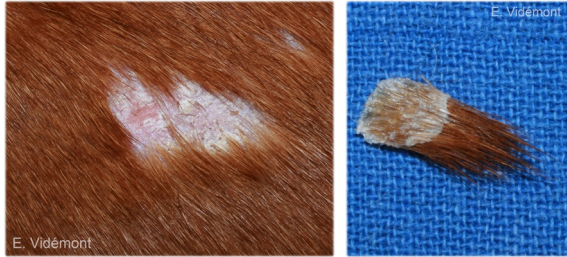
E. Vidémont

erythema, alopecia and scaling – some scarring?

36



### Canine ECLE (Vizslas)



erythema, alopecia, scaling

37

### Canine ECLE (GSHP)



scaling:	25/25 (100%)	pruritus:	7/25 (28%)
alopecia:	19/25 (76%)	thrombopenia:	6/25 (24%)
follicular casts:	7/25 (28%)	pain/lameness:	7/25 (28%)

(Bryden, Vet Dermatol 2005)

38

### Canine ECLE (GSHP)

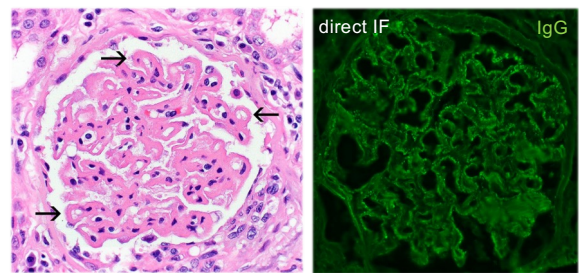


skin/ear infections:	6/6 (100%)	hunched back:	6/6 (100%)
lymphadenopathy:	6/6 (100%)	infertility:	6/6 (100%)
lameness:	6/6 (100%)	thrombopenia	4/6 (75%)

(Mauldin, Vet Dermatol 2010)

39

### Canine ECLE (GSHP)

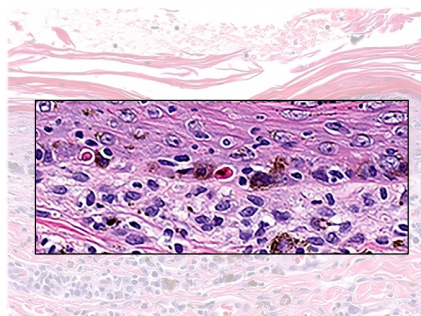


proteinuria:	5/5 (100%)
membranous glomerulonephropathy:	7/7 (100%)
serum antinuclear autoantibodies:	1/5 (20%)

(Amerman, Vet Pathol, in press 2023)

40

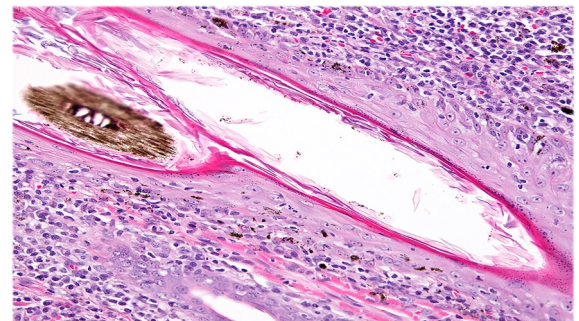
### Canine ECLE (GSHP)



lymphocyte-rich interface dermatitis

41

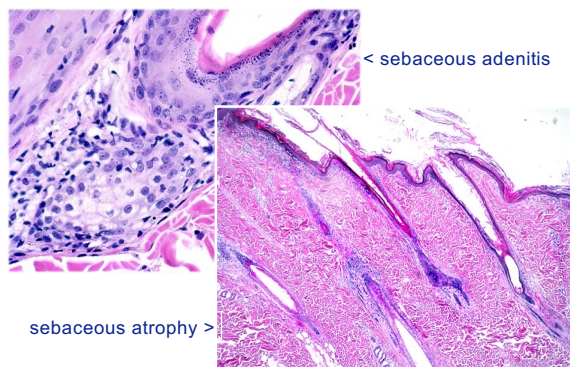
### Canine ECLE (GSHP)



lymphocyte-rich interface folliculitis

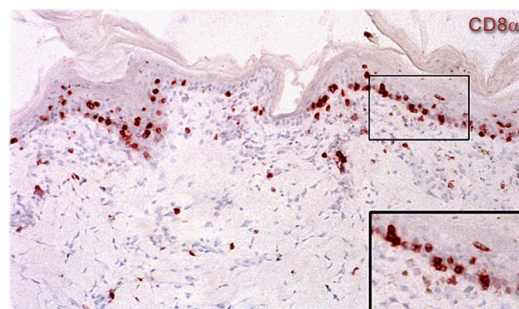
42

### Canine ECLE (GSHP)



43

### Canine ECLE (GSHP)

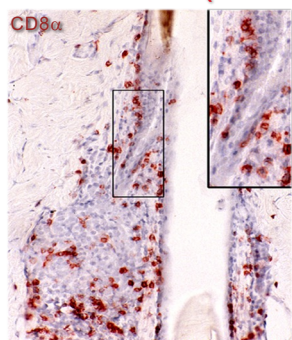


cytotoxic gamma-delta epitheliotropic T- cells

(Bryden, Vet Dermatol 2005)

44

### Canine ECLE (GSHP)



invasion of sebaceous glands and ducts by cytotoxic T-cells

(Bryden, Vet Dermatol 2005)

45

### Canine ECLE (GSHP) Treatment and Outcome

#### – prognosis:

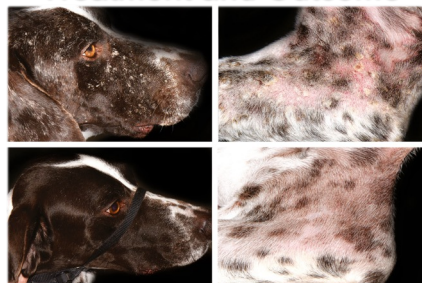
- # of dogs reported with ECLE: 36
- # of dogs euthanized: 16 (44%)
- # with treatment outcome reported: 13
- # with complete remission of ECLE: 4 (31%)

#### – most effective therapy:

- high-dose glucocorticoid immunosuppression!

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### Canine ECLE (GSHP) Treatment and Outcome

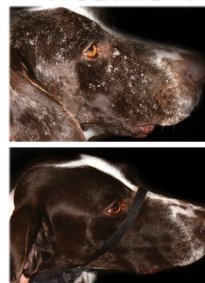


GSHP, MC, 3 years  
complete remission after 4 months of mycophenolate mofetil

(Ferrigno, Vet Dermatol 2019)

47

### Canine ECLE (GSHP) Treatment and Outcome



GSHP, MC, 3 years  
complete remission after 4 months of mycophenolate mofetil  
normalization of type-1 and inflammatory immune response

(Ferrigno, Vet Dermatol 2019)

48



### Canine ECLE (Viszla) Treatment and Outcome



Hungarian Vizsla, MC, 8 years  
complete remission after 2 months of oclacitinib at 1.8 mg/kg once daily

(Harvey, Vet Dermatol, 2023)

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### Canine ECLE (GSHP) Treatment and Outcome



Viszla, M, 8 m



after 1 month of prednisolone  
+ hydroxychloroquine  
+ mycophenolate  
+ oclacitinib

50

### Canine ECLE (Viszla) Treatment and Outcome

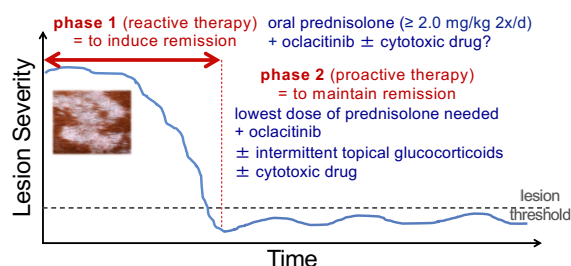


Viszla, M, 8 m

after 1 month of prednisolone  
+ hydroxychloroquine  
+ mycophenolate  
+ oclacitinib

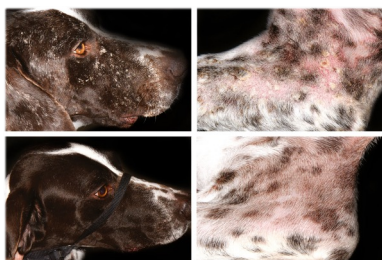
51

### Canine ECLE Treatment Recommendations (2023)



52

### Canine ECLE Treatment and Outcome

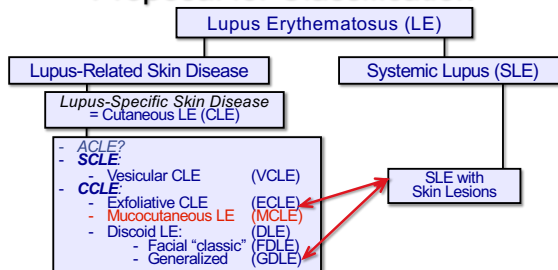


TREATMENT SUCCESS PROBABILITY



53

### Cutaneous Lupus in Dogs Proposal for Classification



(Olivry, BMC Vet Research 2018)

54

### Canine MCLE Historical Perspective (1)

- 1995 perivulvar discoid lupus erythematosus (1 dog) (Poirier, Can Vet J 1995)
- 1996 vulvar discoid lupus erythematosus (1 dog) (Bensignor, PMCAC 1996)
- 1998 mucocutaneous lupus erythematosus (2 dogs) (Olivry, Br Vet Derm Study Group 1998)
- 2004 mucocutaneous lupus erythematosus (4 dogs) (Schrauwen, Vet Record 2004)

55

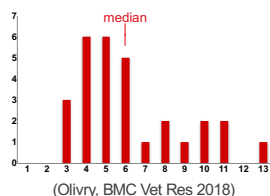
### Canine MCLE Historical Perspective (2)

- 2006 discoid lupus erythematosus variant (1 dog) (Gerhauser, Vet Pathol 2006)
- 2014 perianal/perivulvar lupus erythematosus (3 dogs) (Scott, Jpn J Vet Dermatol 2014)
- 2015 mucocutaneous lupus erythematosus (21 dogs) (Olivry, Vet Dermatol 2015)

56

### Canine MCLE Signalment (35 dogs)

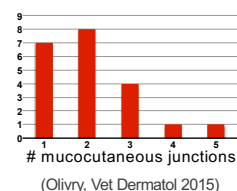
- breeds:
  - German + Belgian shepherd dogs (and crosses):  
16 + 2 = 18 (51%)
- female:male ratio: 22:13 = 1.7
- age of onset: median (range) : 6 yrs (3 – 13)



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### Canine MCLE Lesion Distribution (21 Dogs)

- anal/perianal: 12 (60%)
- genital/perigenital: 12 (57%)
- oral/perioral: 10 (48%)
- ocular/periorcular: 6 (29%)
- nasal/perinasal: 4 (19%)



58

### Canine MCLE



GSD, FS, 3 yrs

GSD, FS, 6 yrs

GSD, FS, 6 yrs

anal/perianal erosions and ulcers: 23/35 (66%)

(Olivry, BMC Vet Res 2018)

59

### Canine MCLE



GSD, FS, 5 yrs

GSD, M, 5 yrs

X, FS, 6 yrs

anal/perianal erosions and ulcers: 23/35 (66%)

(Olivry, BMC Vet Res 2018)

60



### Canine MCLE



GSD, FS, 3 yrs

GSD, FS, 5 yrs

Keeshond, MC, 13 yrs

genital/perigenital erosions and ulcers: 16/35 (46%)

(Olivry, BMC Vet Res 2018)

61

### Canine MCLE



GSD, FS, 6 yrs

GSD, FS, 6 yrs

C Griffin

Tervueren, M, 7 yrs

Min Pinscher, FS, 6 yrs

oral/perioral erosions and ulcers: 9/35 (26%)

62

### Canine MCLE



GSD, M, 4 yrs

GSD, M, 4 yrs

periocular erosions and ulcers: 6/35 (17%)

(Olivry, BMC Vet Res 2018)

63

### Canine MCLE



Labrador, M, 8 yrs

GSD, FS, 6 yrs

nasal/perinasal erosions and ulcers 4/35 (11%)

(Olivry, BMC Vet Res 2018)

64

### Canine MCLE Lesion Distribution (21 Dogs)



anal (66%) &gt; genital (46%) &gt; labial (26%) &gt; ocular (17%) &gt; nasal (11%)

(Olivry, BMC Vet Res 2018)

65

### Canine MCLE



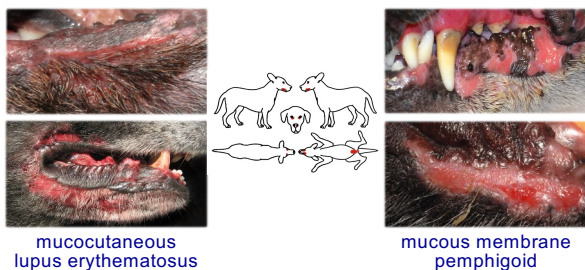
F. Banovic

occasional scars → MCLE is a CCLE variant!

(Olivry, BMC Vet Res 2018)

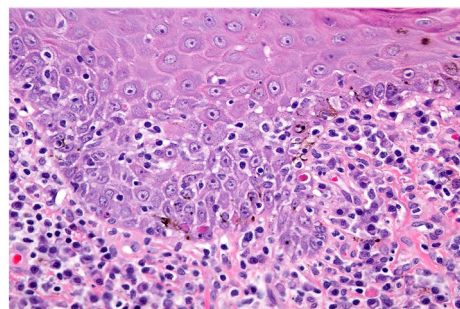
66

## Canine MCLE versus MMP



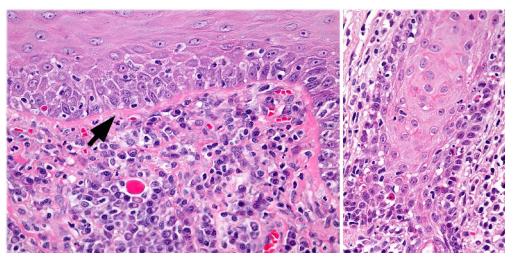
67

## Canine MCLE



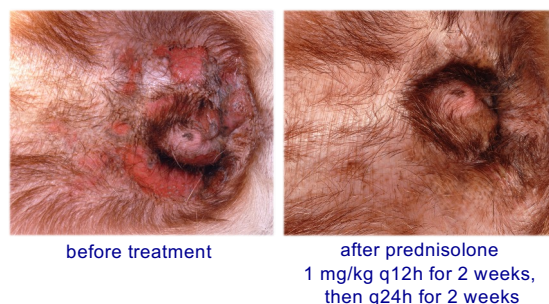
68

## Canine MCLE Histopathology



69

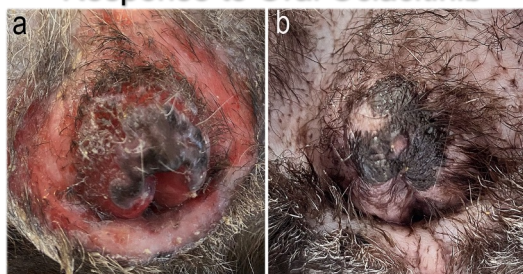
## Canine MCLE Response to Oral Glucocorticoids



Labrador retriever, FS, 2 yrs

70

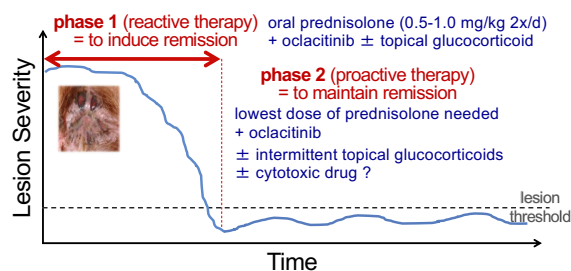
## Canine MCLE Response to Oral Oclacitinib



Greyhound, FS, 9 years  
(Harvey, Vet Dermatol, 2023)

71

## Canine MCLE Treatment Recommendations (2023)



72

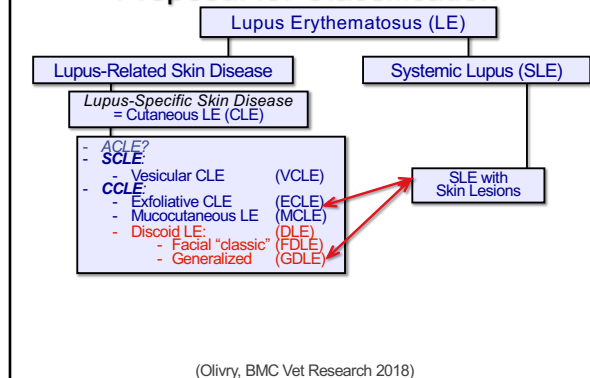


### Canine MCLE Treatment and Outcome



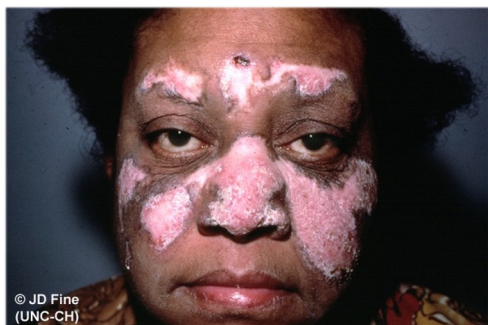
73

### Cutaneous Lupus in Dogs Proposal for Classification



74

### Human Localized (Facial) DLE



© JD Fine  
(UNC-CH)

dyspigmentation, erythema, scaling, atrophic scars

75

### Canine Facial DLE (FDLE) Historical Perspective

- 1979 1<sup>st</sup> report of FDLE in 2 dogs  
(Griffin, Vet Immunol Immunopathol 1979)
- 1983 1<sup>st</sup> case series of canine FDLE in the USA  
(Scott, JAAHA 1983)
- 1986 1<sup>st</sup> case series of canine FDLE in Europe  
(Olivry, Prat Med Chir Anim Comp 1986)

76

### Canine Facial DLE (FDLE)



depigmentation, erythema, scarring with loss of normal architecture, crusting ± alopecia

77

### Canine Facial DLE (FDLE)



June 2013

depigmentation, erythema, scarring with loss of normal architecture, crusting ± alopecia

78

### Canine Facial DLE (FDLE)



November 2013

depigmentation, erythema, scarring with loss of normal architecture, crusting  $\pm$  alopecia

79

### Canine Facial DLE (FDLE)



depigmentation, erythema, scarring with loss of normal architecture, crusting  $\pm$  alopecia

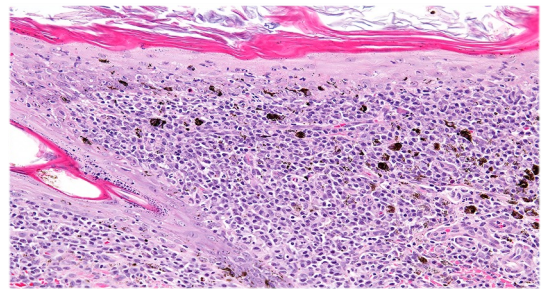
80

### Canine Facial DLE (FDLE) Main Differential Diagnosis = MMP



81

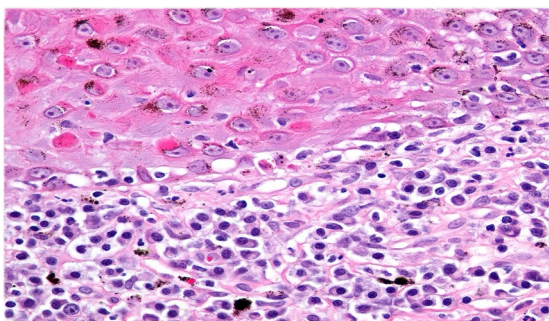
### Canine Facial DLE (FDLE)



lymphocytic interface dermatitis with basement membrane thickening and keratinocyte damage

82

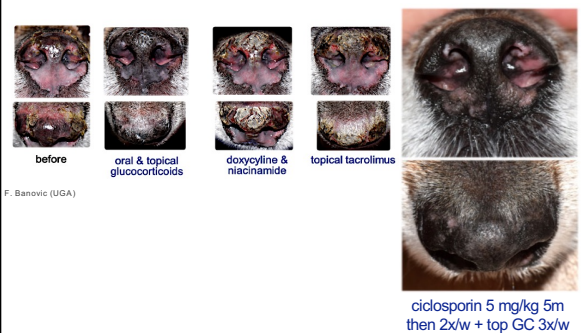
### Canine Facial (Localized) DLE (FDLE)



lymphocytic interface dermatitis with basement membrane thickening and keratinocyte damage

83

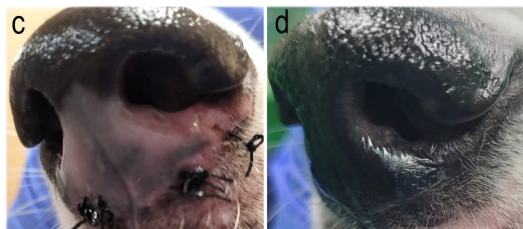
### Canine Facial DLE (FDLE) Comparative Efficacy



84



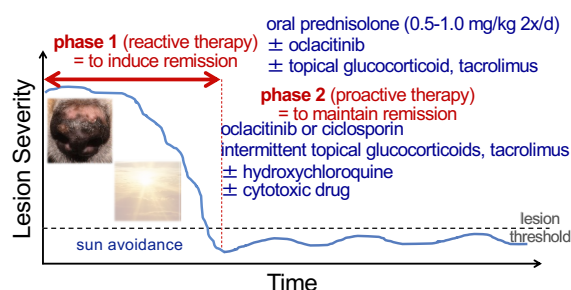
### Canine Facial DLE (FDLE) Treatment and Outcome



Greyhound, FS, 10 years  
complete remission after 10 weeks of oclacitinib at 0.45 mg/kg twice daily  
(Harvey, Vet Dermatol 2023)

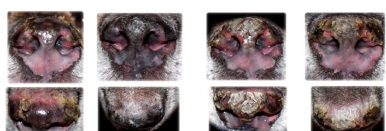
85

### Canine Facial DLE (FDLE) Treatment Recommendations (2021)



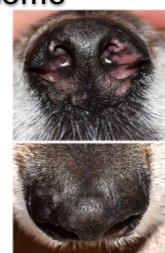
86

### Canine Facial DLE (FDLE) Treatment and Outcome



F. Banovic (UGA)

TREATMENT SUCCESS PROBABILITY



ciclosporin 5 mg/kg 5m  
then 2x/w + top GC 3x/w

87

### Human Disseminated DLE

(Bhat, Indian J Dermatol 2012)



depigmentation, erythema, scaling, atrophic scars

88

### Canine Generalized DLE (GDLE) Historical Perspective (1)

- 2012 1<sup>st</sup> report of GDLE in a dog with response to hydroxychloroquine (Oberkirchner, Vet Dermatol 2012)
- 2013 1<sup>st</sup> report of GDLE with alopecia in a dog with systemic lupus erythematosus (Olivry, Vet Pathol 2013)
- 2014 1<sup>st</sup> report of GDLE in a dog with response to cyclosporine (Banovic, Vet Dermatol 2014)
- 2015 1<sup>st</sup> report of GDLE in a dog with response to niacinamide and tetracycline (Rossi, J Amer Anim Hosp Assoc 2015)

89

### Canine Generalized DLE (GDLE) Historical Perspective (2)

#### Veterinary Dermatology

Vet Dermatol 2016; 27: 489-e131

DOI: 10.1111/vde.12389

**Clinical and microscopic features of generalized discoid lupus erythematosus in dogs (10 cases)**

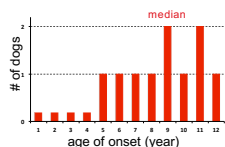
Frane Banovic\*†‡, Keith E. Linder§, Maarja Uri†§, Michael A. Rossi\*\* and Thierry Olivry†‡

(Banovic, Vet Dermatol 2016)

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### Canine Generalized DLE (GDLE) Signalment (10 Dogs)

- breeds: 7 purebred and 3 crossbred dogs
  - 2 Chinese crested dogs
  - 2 Labrador retrievers
- female:male ratio: 5:5 = 1.0
- age of onset: median (range): 9 yrs (5 – 12)



(Banovic, Vet Dermatol 2016)

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### Canine Generalized DLE (GDLE) Lesion Distribution (10 Dogs)

- lateral thorax: 10 (100%)
- dorsum: 10 (100%)
- neck: 10 (100%)
- abdomen: 8 (80%)
- proximal limbs: 8 (80%)

(Banovic, Vet Dermatol 2016)

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### Canine Generalized DLE (GDLE) Lesion Distribution (10 Dogs)

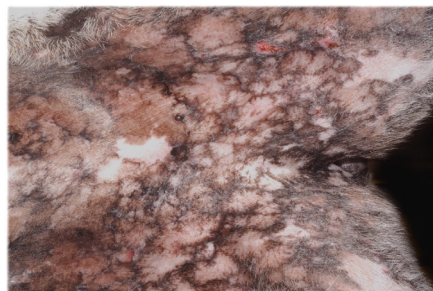


lateral thorax, neck: 10/10 (100%)

(Banovic, Vet Dermatol 2016)

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### Canine Generalized DLE (GDLE) Lesion Distribution (10 Dogs)

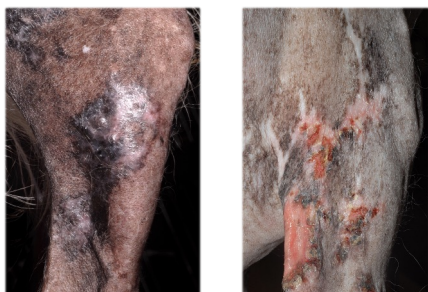


abdomen: 8/10 (80%)

(Banovic, Vet Dermatol 2016)

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### Canine Generalized DLE (GDLE) Lesion Distribution (10 Dogs)



limbs: 8/10 (80%)

(Banovic, Vet Dermatol 2016)

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### Canine Generalized DLE (GDLE) Lesion Distribution (10 Dogs)



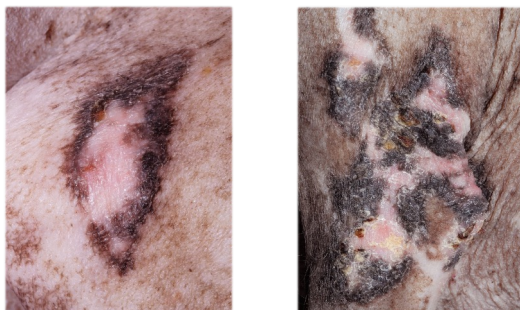
head: 7/10 (70%)

(Banovic, Vet Dermatol 2016)

96



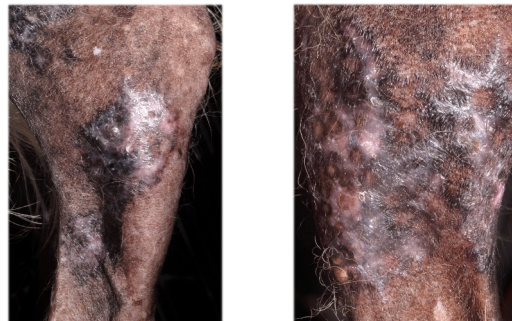
### Canine Generalized DLE (GDLE)



plaques with central scarring,  
pigmentation changes and variable scaling

97

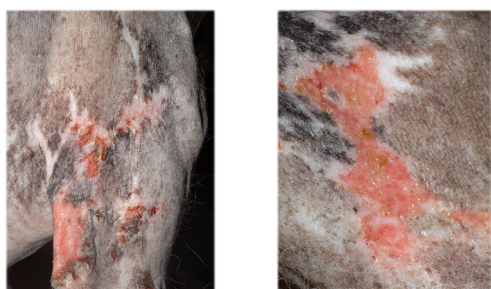
### Canine Generalized DLE (GDLE)



plaques with central scarring,  
pigmentation changes and variable scaling

98

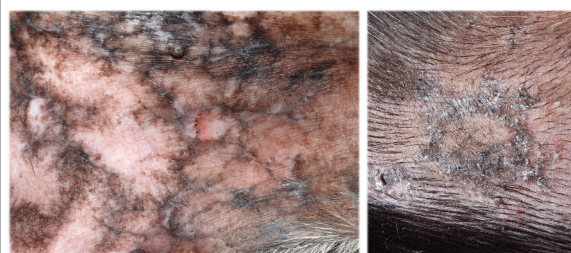
### Canine Generalized DLE (GDLE)



occasional deep erosions and ulcers

99

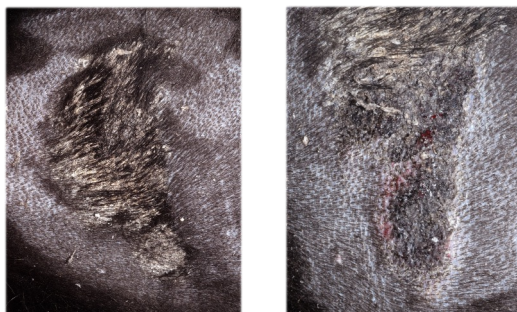
### Canine Generalized DLE (GDLE)



reticulated hyperpigmentation

100

### Canine Generalized DLE (GDLE)



rarely prominent adherent scaling

101

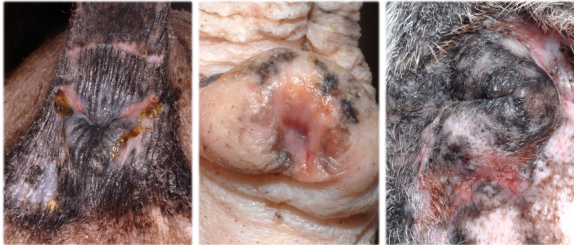
### Canine Generalized DLE (GDLE)



scarring alopecia

102

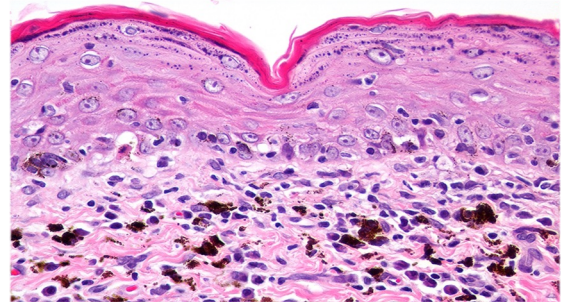
### Canine Generalized DLE (GDLE)



mucocutaneous junction involvement

103

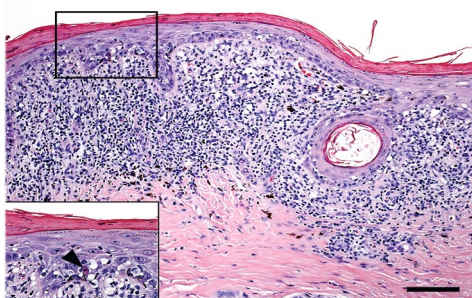
### Canine Generalized DLE (GDLE) Histopathology



lymphocyte-rich interface dermatitis

104

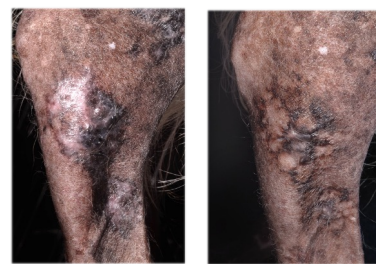
### Canine Generalized DLE (GDLE) Histopathology



lymphocyte-rich interface dermatitis

105

### Canine Generalized DLE (GDLE) Treatment and Outcome



before treatment

after 1 year of  
hydroxychloroquine

Chinese crested dog, FS, 9 yrs

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### Canine Generalized DLE (GDLE) Treatment and Outcome



before treatment

after 4 months of  
hydroxychloroquine + tacrolimus

Chinese crested dog, MC, 9 yrs

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### Canine Generalized DLE (GDLE) Treatment and Outcome



before treatment

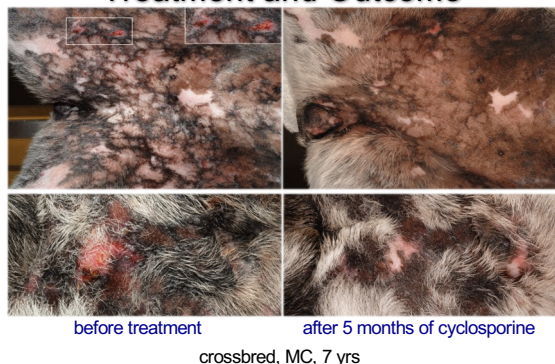
after 8 months of cyclosporine

Toy Poodle, FS, 11 yrs

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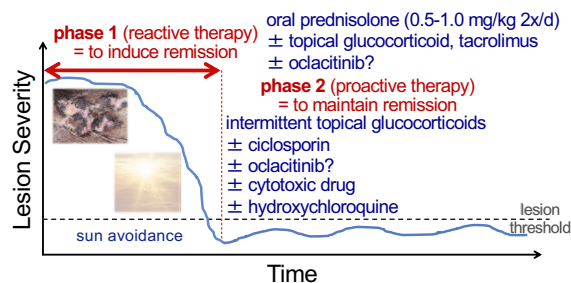


### Canine Generalized DLE (GDLE) Treatment and Outcome



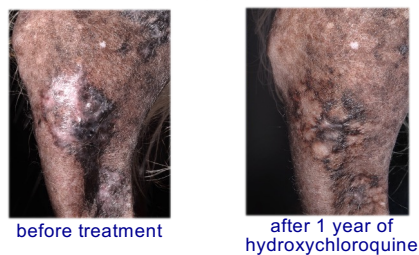
109

### Canine GDLE Treatment Recommendations (2021)



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### Canine GDLE Treatment and Outcome



111

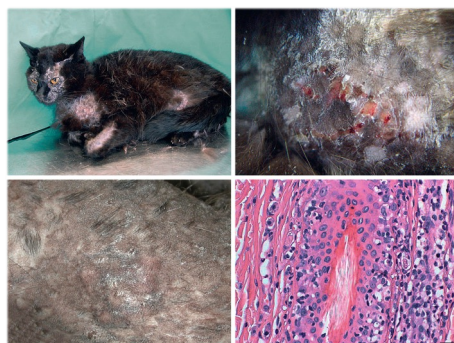
### Feline "SLE" = GDLE + SLE



(Vitale, Vet Dermatol 2003)

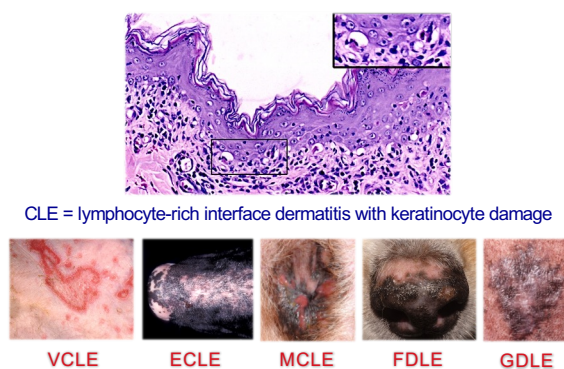
112

### Feline GDLE

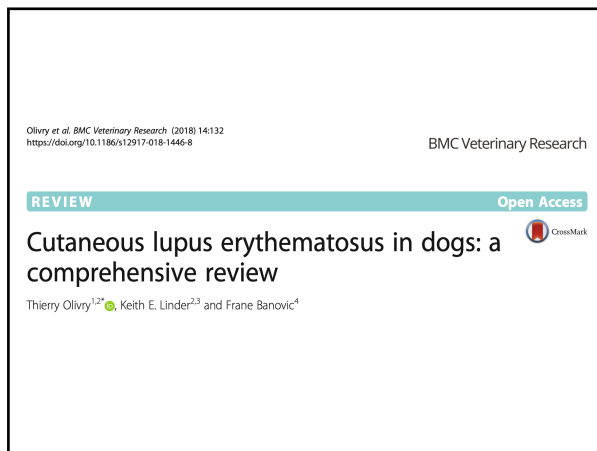


113

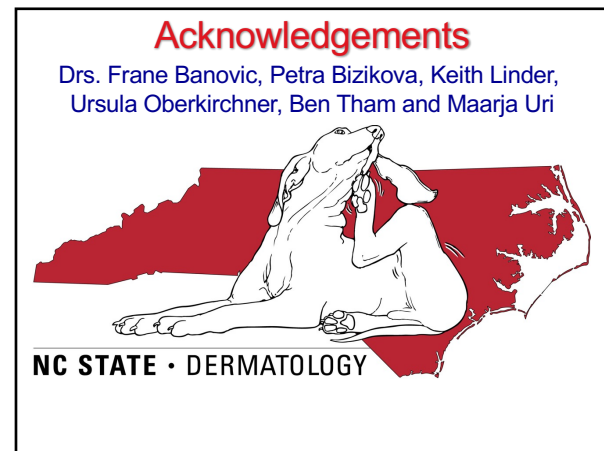
### Lupus-Specific Histopathology



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