

Effektiver Einsatz von Antiparasitika in der modernen Kleintierdermatologie

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Plan für heute

- 2 klinische Patienten
- Diskussion

Yorkshire Terrier, m, 9 Jahre, 5 kg

Grund der Vorstellung:

Krusten auf dem gesamten Körper,
Haarausfall, starker Juckreiz seit 6
Monaten





Anamnese:

- Hautveränderungen der Augenlider, Ohrlapfen- behaarter Rand, Ohrenentzündung, ventraler Thorax und Abdomen, behaarte Bereiche der Pfoten schmerzhaft und blutig, Rute haarlose Stellen und Krusten
- Juckreiz 5/10, sekundär zu prim. Alopezie
- Allgemeinzustand: etwas depressiv, sonst obB
- Advocate® (Moxidectin/Imidacloprid) 3x im Abstand von 2 W
- Cefalexin wiederholt jeweils 4 W → keine Heilung, weniger blutig
- Blut (BB, Organprofil) vor drei Monaten → OK

Klinische Untersuchung

- Ggr. Lymphadenomegalie der Lnn. Poplitei
- T 38,7 C









Dermatologische Untersuchung

- Generalisierte entzündliche Alopezie mit Krusten, Erythemen, Komedonen und follikulären Casts

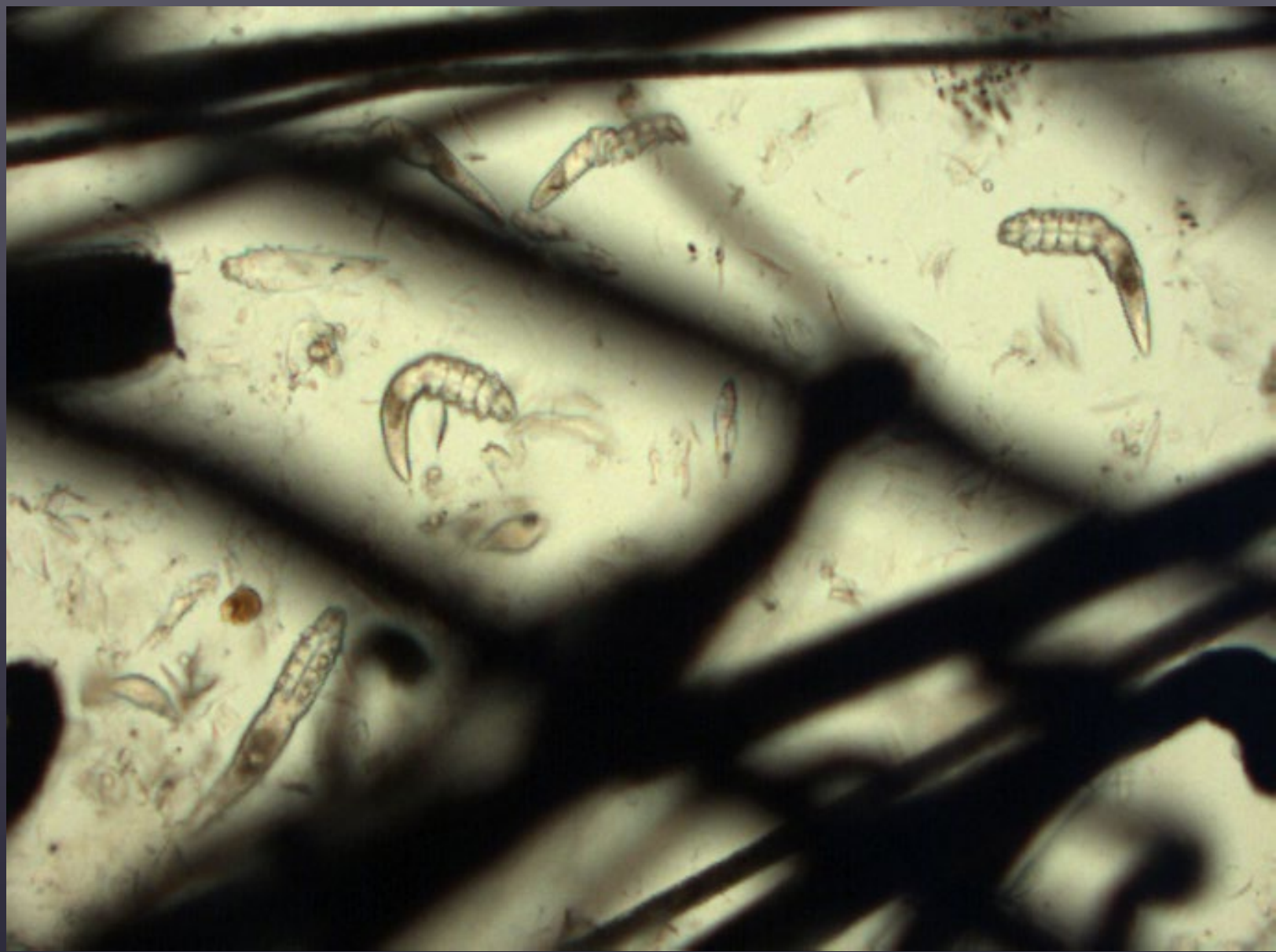
Differentialdiagnosen zu:

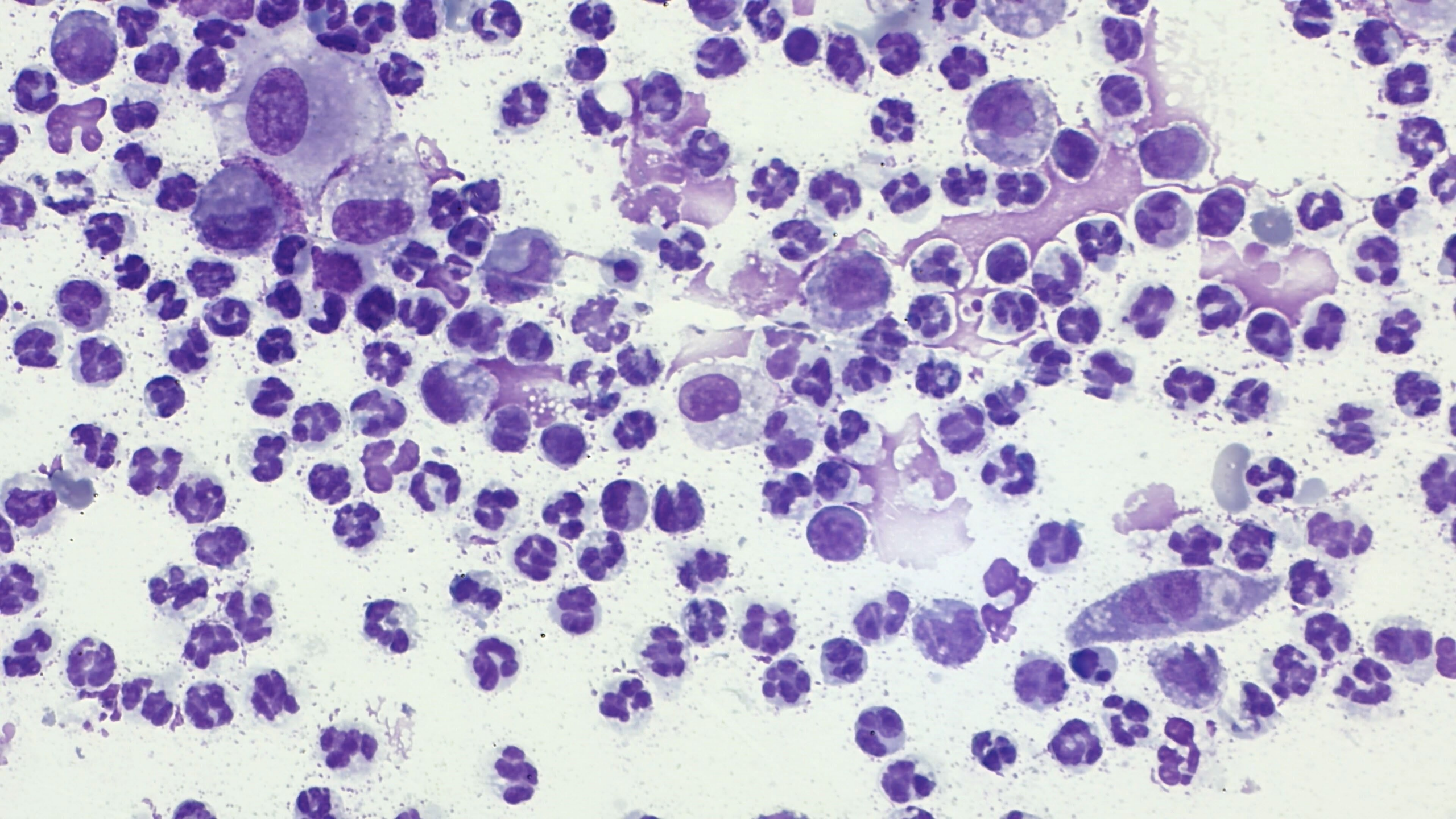
Follikuläre Casts, Komedone, Alopezie

- Demodikose
- Bakterielle Follikulitis
- Dermatophytose
- Sebadenitis
- Cushing Syndrom
- Kutanes Lymphom

Sek. Juckreiz

- Sek. Pyodermie
- Malassezien Dermatitis





Diagnose

- Generalisierte Demodikose (adult onset)
- Superfizielle bis teilweise tiefe Pyodermie (Pforten)
- Bakterielle Otitis externa aufgrund der Otodemodikose

Weitere Schritte?

- Suche der zugrundeliegenden Erkrankungen (Immunsuppression)

Zugrundeliegende Erkrankung?

- **Cushing Syndrom** → BB, Biochemie, Urin, UCC, eventuell Ultraschall und weitere Funktionstests
- **Hypothyreose** → T4, TSH ...
- **Andere metabolische Erkrankungen** ? BB, BCH, Urin
- **Neoplasie** ? → Tumor Suche → Bildgebende Diagnostik
- **Leishmaniose** ?

Krvny obraz (Opticka prietokova cytometria/mikroskopia)

* Erytrocyty	5.99	T/l		5.5 - 8.5
* Hematokrit	0.39	l/l	-	0.44-0.52
* Hemoglobín	143	g/l	-	150-190
* Leukocyty	19.4	G/l	+	6.0-12.0
* Neutr. granulocyty	76	%	+	55-75
* Lymfocyty	10	%	-	13-30
* Monocyty	11	%	+	0-4
* Eozinofily	1	%		0-6
* Bazofily	0	%		0
* Neutr. tycinky	2	%		0-4
* Hypochromazia	neg.			neg.
* Anizocytoza	neg.			neg.

Liscie udolie 57 • 842 31 Bratislava

* Trombocyty	458	G/l		150-500
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Diferencialny krvny obraz (absolutne hodnoty)

* Neutrofilne gran..	14.7	G/l	+	3.0-9.0
* Lymfocyty	1.9	G/l		1-3.6
* Monocyty	2.1	G/l	+	0.04-0.5
* Eozinofily	0.2	G/l		0.04-0.6
* Bazofily	0.0	G/l		< 0.04
* Tycinky	0.4	G/l		< 0.5

Retikulocyty (Laser-light scattering hematology system)

Retikulocyty (abs.)	53.3	/nl		< 110.0
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Klinicka chemia (fotometricky ISE)

Fructozami ny	192.33	µmol / l		< 374
ALP	34.94	U/l		< 147
GLDH	1.70	U/l		< 8
ALT (GPT)	20.29	U/l		< 88
AST (GOT)	17.90	U/l		< 51
CK	60.70	U/l		< 200
Bilirubin celk.	0.09	µmol / l		< 3.4
Glukoza	6.40	mmol / l	+	3.05-6.1
Total Protein	73.11	g/l		54-75
Abumin	27.10	g/l		25-44
Globuliny	46.01	g/l	+	< 45
alb/glob ratio	0.59			> 0.59
Urea	4.56	mmol / l		3.3-8.3
Kreatinin	42.50	µmol / l		35-106
Sodík (Na)	142.65	mmol / l		140-155
PO4	1.46	mmol / l		0.7-1.6
Vapník (Ca)	2.28	mmol / l	-	2.3-3.0
Draslík (K)	4.66	mmol / l		3.5-5.1
Zelazo	17.09	µmol / l		15-45
Li paza	47.93	U/l		< 120

SDMA (PHO)	0.32	µmol/L		< 0.65
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Tyroxin - stanovenie (T4) - CIA

T4 (bazalna hladina)	0.7	µg/dl	-	1.3-4.5
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- Urin:

USG: 1,060, pH 7, alles andere ob

UCC → kein Cushing

- Ultraschall: obB

BU → Methicillin sensitiver *St. pseudintermedius*

Parameter	Hodnota	Referencne hodnoty
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Bakteriologicke vysetrenie (aerobne):

stredna koncentracia *Staphylococcus pseudintermedius* (1)

Test citlivosti (Mikrodilution):

(1)

peniciliny

* Penicillin G	R
* Ampicillin	R
* Amoxicillin	R
* Amoxic.+Clavulan	S

cefalosporiny

* Cephalexin	S
* Cefovecin	S
* Cefquinom	S

fluorochinony

* Difloxacin	S
* Enrofloxacin	S
* Marbofloxacin	S
* Ofloxacin	S
* Pradofloxacin	S
* Orbifloxacin	S

tetracykliny

* Tetracycline	S
* Doxycyclin	S

aminoglykozidy

Gentamicin	S
* Neomycin/Framycin	S
* Kanamycin	S
* Tobramycin	S

makrolidy

* Erythromycin	R
* Spiramycin	R

linkozamidy

* Clindamycin	R
* Lincomycin	R

Diagnose

- Generalisierte Demodikose (Adult onset)
- Bakterielle Follikulitis/ Furunkulose
- Bakterielle Otitis externa
- Zum jetzigen Zeitpunkt unklare primäre Erkrankung

Therapie

- Bravecto[®] Tabl. alle 3 Monate
- Cefalexin 25mg/kg BID bis zur Kontrolle
- Chlorhexidin 4% Shampoo 2 x in der Woche
- Otodine[®] alle 2 Tage



4 W später



4 W später

- Geschabsel: vereinzelt Demodex Milben (nur tote Milben) - 90%
- Zytologie: negativ (inkl. Ohren)





Fiona, Dobermann, 7 Monate, w





Vorberricht

- Wegen generalisierten Hautveränderungen, mit V. a. autoimmunes Geschehen überwiesen
- Kommt aus Kroatien
- Hautproblem seit ca. 3 Monaten, breitet sich aus
- Haarlose juckende Stellen, Krusten, rote Haut

Vorberricht

- Demodex vor 2M (Geschabsel) → Advocate - 3 x je 1 Woche, Ivomec s.c. wöchentlich 3x mal → nicht besser
- BB und Organprofil waren i.O.
- Cefalexin, Amoxicillin-Clav. verabreicht über 3 W → weniger blutig
- In den letzten zwei W → Apoquel 16mg - 2 x ½ → Haut progressiv schlechter









Klinische Untersuchung

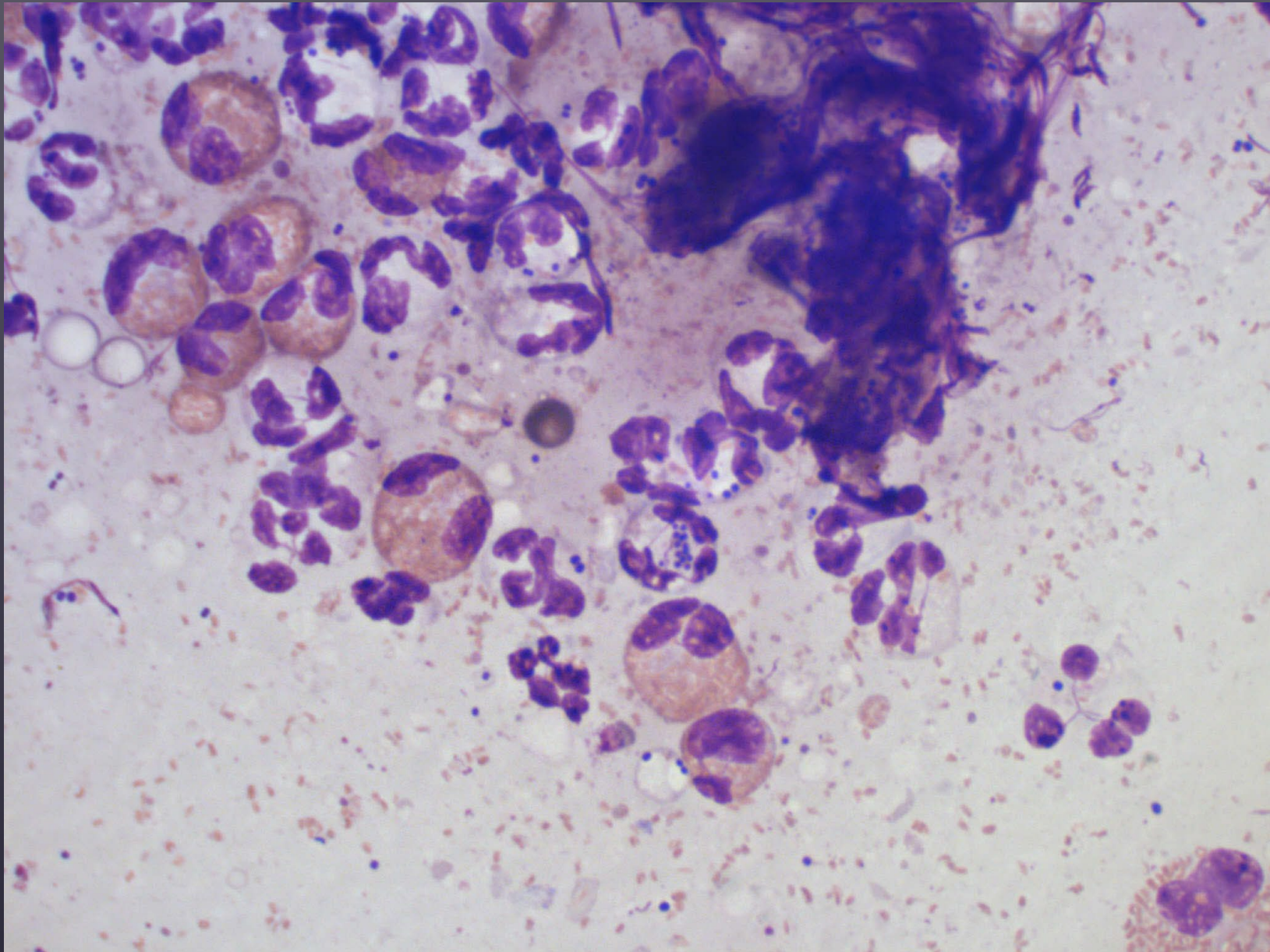
- Mittelgradige Lymphadenomegalie (inkl. popl., mandibular., superfic. cervicales)
- T 38,2° C

Problemliste

- Multifokale entzündliche Alopezie mit Papeln und Krusten und Furunkulose
- Sek. Juckreiz

Differentialdiagnosen

- Demodikose (generalisiert)
- Bakterielle Follikulitis und Furunkulose
- Dermatophytose





Diagnose

- Juvenile generalisierte Demodikose
- Bakterielle Follikulitis und Furunkulose
- V.a.reaktive Lymphadenomegalie

Thérapie?

Therapieplan

- Bravecto[®] (Fluralaner)
1 x alle drei Monate (oder mindestens bis zu 2 x negativem Geschabsel)
- Behandlung der tiefen Pyodermie mit/ohne Antibiose ?
- Lokale antiseptische Behandlung
Chlorhexidin Shampoo alle 2 Tage zu Beginn, danach alle 4-7 Tage
- Kontrollen alle 4W

Fiona – 4 Wochen später



Recheck

- Geschabsel → vereinzelt tote Milben (besser 95%)
- Zytologie → negativ

Fiona – 8 Wochen später



Diskussion

- 2 Patienten mit GD und Pyodermie
- Juvenile vs. adult onset
- Ohne systemische und mit syst. Antibiose

Treatment of demodicosis in dogs: 2011 clinical practice guidelines

Ralf S. Mueller*, Emmanuel Bensignort, Lluís Ferrert, Birgit Holm§, Stephen Lemarie¶, Manon Paradis** and Michael A. Shipstone††

- Korrekte p.o. antibiotische Therapie, kombiniert mit lokaler Therapie
- Bei allen Hunden mit generalisierter Demodikose

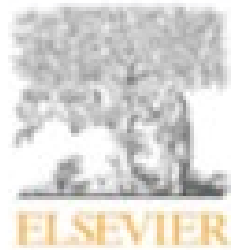
Jahr 2011

Treatment of secondary bacterial skin infection

Cytology is essential in the evaluation of a dog with demodicosis (see identification of bacterial infections above). When an infection is present, it should be treated based on the standard of care in each country. It is beyond the scope of these guidelines to detail recommendations for antimicrobial therapy. Ideally, a bacterial culture should be performed to determine the choice of antibiotic. Culture and susceptibility testing are ideal in dogs with rod-shaped bacteria present on cytology, in cases with apparent bacterial resistance or in very severe, potentially life-threatening infection (COE V). If a culture is not possible, cytological determination of the bacterial type (rods or cocci) is essential prior to empirical antibiotic therapy, because many antibiotics empirically suited for Gram-positive coccal infections are ineffective for Gram-negative rods.

Appropriate oral antibiotic therapy and concurrent topical antimicrobial therapy (whole-body soaks or shampoos) are recommended for all dogs with generalized demodicosis and secondary bacterial skin infection (COE V). In

addition to antimicrobial benefits, topical therapy contributes to the overall wellbeing of the dog by removing crusts and debris that may contain mites, exudate and inflammatory mediators. Benzoyl peroxide (2–3%) and chlorhexidine-based shampoos (3–4%) are commonly recommended for dogs with demodicosis. They have a prolonged antibacterial activity on skin.³⁵ Benzoyl peroxide is degreasing, thus drying, and may be irritant, so it may be prudent to follow up with a moisturizer to prevent drying of the skin.³⁶ The frequency of topical therapy depends on the dog, owner and concurrent miticidal therapy, but weekly bathing is most commonly recommended (COE V). Antimicrobial therapy should be continued for 1–2 weeks beyond clinical and microscopic resolution of the bacterial skin infection.



Contents lists available at SciVerse ScienceDirect

Veterinary Parasitology

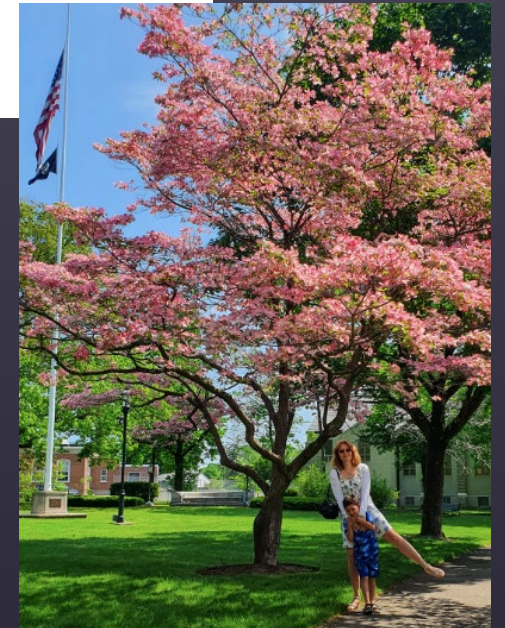
journal homepage: www.elsevier.com/locate/vetpar



Influence of systemic antibiotics on the treatment of dogs with generalized demodicosis

Ekaterina Kuznetsova^a, Sonya Bettenay^b, Lyubov Nikolaeva^a, Monir Majzoub^c,
Ralf Mueller^{d,*}

Jahr 2012





- 58 Hunde → zwei Gruppen mit GD und Pyodermie
- Ivermectin 0,6mg/kg SID p.o., Benzoylperoxid-Shampoo

1. Gruppe: Mit Antibiotika 2. Gruppe: Ohne Antibiotika

→ **Kein Unterschied in der Behandlungsdauer zwischen den beiden Gruppen**

- Erfolgreiche Behandlung von GD (Ursache der Pyodermie) kann zur Heilung der Pyodermie beitragen
- Orale Antibiotika sind bei vielen Hunden mit GD und bakterieller Pyodermie möglicherweise nicht erforderlich, wenn sie eine angemessene Therapie für GD erhalten
- **Gelegentlich werden einzelne Hunde orale Antibiotika benötigen**
- Bei Hunden mit schwerer klinischer Demodikose und Pyodermie, die mit einer topischen, aber nicht systemischen Antibiotikatherapie behandelt werden → Überwachung Septikämie/Fieber angezeigt.

Efficacy of fluralaner for the treatment of canine demodicosis

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*Dermatology Clinic For Dogs and Cats "Dermawet",
Warsaw, Poland

†Veterinary Clinic "Brynów", Katowice, Poland

Canine generalized demodicosis is a common and often very severe skin disorder. At present no universal and fully effective therapy of this disease is known. The aim of this study was to evaluate the efficacy of fluralaner (Bravecto, MSD Animal Health; Madison, NJ, USA) in the treatment of demodicosis in dogs. Client-owned dogs ($n = 163$) of different breeds and both sexes with generalized demodicosis confirmed by deep skin scraping and/or hair plucking were included. Animals were divided into two age groups at presentation for the treatment: group one, 2–18 months (62.6%) and group two, over 2 years of age (37.4%). Dogs were treated with fluralaner (25 mg/kg) orally, twice three months apart. No other treatment against demodicosis was used. Individuals with secondary pyoderma additionally received cefalexin (30 mg/kg). Skin scraping and/or hair plucking were performed 1, 2 and 3 months after the first fluralaner administration. The overall response to therapy was 100%. The majority of dogs (87.1%) had negative skin scrapings as soon as one month after first fluralaner administration. Twenty-one individuals (12.9%) (all belonging to group two) needed two months after the initial fluralaner administration to achieve negative scrapings. No adverse effects were observed. Obtained results suggest that fluralaner may be an effective, safe and convenient treatment option for dogs with generalized demodicosis. The number of dogs with negative scrapings after one month was significantly higher in group one compared with group two ($P < 0.001$, χ^2 test).

Sources of funding: Self-funded.

Conflicts of interest: None declared.

Veterinary Dermatology

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DOI: 10.1111/vde.12252

Abstracts of the 28th Annual Congress of the ECVD-ESVD, 24–26 September 2015, Krakow, Poland

Jahr 2015



- 163 Hunde mit generalisierter Demodikose
- 2 Gruppen
 - Junge Hunde mit GD
 - “adult onset Demodikose”
- 87% der Hunde waren nach einem Monat negativ im Geschabsel
- Therapie der Pyodermie mit Antibiotika

Diagnosis and treatment of demodicosis in dogs and cats

Clinical Consensus Guidelines of the World Association for Veterinary Dermatology

Jahr 2020

Ralf S. Mueller* , Wayne Rosenkrantz†, Emmanuel Bensignor‡ , Joanna Karaś-Tęcza§, Tara Paterson¶ and Michael A. Shipstone**

Weekly amitraz rinses at 0.025–0.05% are effective for canine demodicosis; long-haired animals should be clipped.

Oral ivermectin at 0.3–0.6 mg/kg daily, moxidectin at 0.3–0.5 mg/kg daily, milbemycin oxime at 1.0–2.0 mg/kg daily and doramectin injected subcutaneously every week at 0.6 mg/kg are effective therapies for canine demodicosis, but an initial gradual dose increase is recommended for systemic moxidectin and ivermectin to identify dogs sensitive to toxicosis induced by those macrocyclic lactones. Topical moxidectin/imidacloprid should be considered for mild-moderate cases of canine demodicosis.

A number of studies have evaluated the efficacy of isoxazolines for canine demodicosis in pet dogs. The published data are very encouraging and make this drug class an excellent treatment option for dogs with demodicosis.

Diagnosis and treatment of demodicosis in dogs and cats

Clinical Consensus Guidelines of the World Association for Veterinary Dermatology

Ralf S. Mueller* , Wayne Rosenkrantz†, Emmanuel Bensignor‡ , Joanna Karaś-Tęcza§, Tara Paterson¶ and Michael A. Shipstone**

Consensus Statement 8 In dogs with demodicosis, systemic antibiotics will typically not be needed and topical antibacterial therapy combined with good miticidal agents will be sufficient unless severe bacterial infection is present.

Diagnosis and treatment of demodicosis in dogs and cats

Clinical Consensus Guidelines of the World Association for Veterinary Dermatology

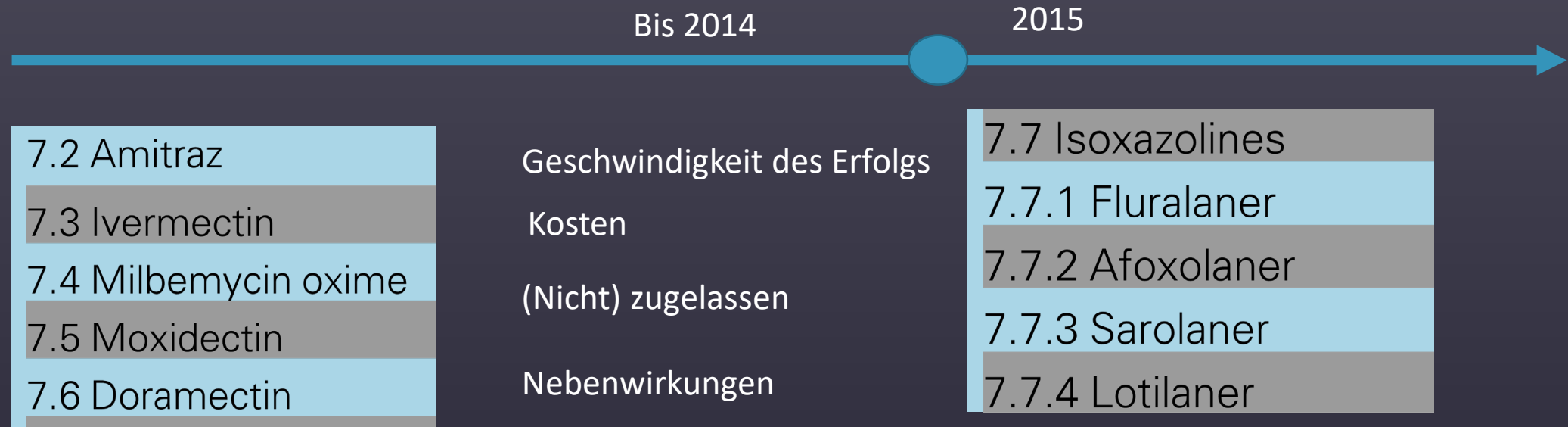
Ralf S. Mueller* , Wayne Rosenkrantz†, Emmanuel Bensignor‡ , Joanna Karaś-Tęcza§, Tara Paterson¶ and Michael A. Shipstone**

Consensus Statement 11 A number of studies have evaluated the efficacy of isoxazoline for canine demodicosis in pet dogs. The published data are very encouraging and make this drug class an excellent treatment option for dogs with demodicosis.

Diagnosis and treatment of demodicosis in dogs and cats

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Es wäre schön Studien zu haben....

- Die alte und neue Therapieansätze vergleichen würden...
- Die Geschwindigkeit des Therapieerfolgs bei neuen Medikamenten und GD
- Die Notwendigkeit der Antibiose bei GD, wenn behandelt mit Isoxazolinen

- ABER!!!!
- Kaum mehr Patienten mit GD (dank Isoxazolinen)
- Vergleichende Studien mit alter Therapie aus ethischen Gründen nicht machbar

Generalisierte Demodikose/Isoxasoline

→ effective mitizide Therapie

Einsatz von Antibiotika in einzelnen Fällen mit generalisierter Demodikose soll individuell beurteilt werden

- Zahl der Patienten ↓ mit generalisierter Demodikose → weniger Einsatz von Antibiotika
- Tötungsgeschwindigkeit von Demodex-Milben mit “alter” und “neuer” Therapie kann nicht verglichen werden

