CANINE ATOPIC AND FOOD ALLERGIC DERMATITIS

Diagnostic and Treatment Recommendations

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CLINICAL PEARLS

- **Pruritus** usually comes before skin lesions; if lesions appear first, suspect another cause.
- **Seasonal flares** suggest environmental allergens; year-round signs may be from indoor allergens.
- **Oclacitinib:** rapid relief (24-48 h). Lokivetmab: full effect in 1-2 weeks.
- **Food elimination:** strict novel-protein or hydrolyzed diet for 8-12 weeks; shorter trials miss delayed responders.
- **Long-term control** needs a multimodal plan: drugs + allergen avoidance + skin barrier support.

⚠ **Diagnostic Pitfall:** Sarcoptic mange can mimic atopic dermatitis - consider trial of isoxazoline or ivermectin before confirming CAD.

SUMMARY

Condition	Canine Atopic and Food Allergic Dermatitis
Prevalence	3-15% of dogs; breed predisposition in West Highland White Terriers, Bulldogs, Golden Retrievers, Labrador Retrievers [1]
Key Clinical Features	Pruritus (often before skin lesions); erythema; lichenification; secondary Staphylococcus and Malassezia infections; predilection sites: face, paws, axillae, groin
Primary Etiology	IgE-mediated hypersensitivity to environmental allergens (atopic dermatitis) or dietary antigens (food allergy); skin barrier dysfunction and dysbiosis are contributing factors
Diagnostic Approach	Favrot criteria (>=5 of 8 criteria); rule out ectoparasites (scabies trial), food allergy (8-12 week elimination diet), and other differentials before confirming CAD
Treatment Essentials	Oclacitinib or lokivetmab for rapid control; cyclosporine for long-term maintenance; ASIT for long-term allergen desensitization; treat secondary infections aggressively; multimodal approach required
Prognosis	Good-to-excellent control in 65-70% with appropriate multimodal management; relapse >80% after drug discontinuation; lifelong management required
Evidence Quality	12 sources; multiple Level II RCTs for biologics and cyclosporine; primary guideline ICADA 2015; predominance of manufacturer-sponsored RCTs for oclacitinib and lokivetmab; PMID verification pending

EVIDENCE PROFILE

Evidence Base	Multiple Level II RCTs (oclacitinib, lokivetmab, cyclosporine); Level III for ASIT, topical therapy, and EFA; Level IV for antimicrobial therapy in secondary infections; 12 sources total
Key Guideline	Olivry et al. ICADA Guidelines 2015 [2] -- comprehensive CPG covering all major treatment modalities; most recent ICADA consensus statement
Guideline Quality	AGREE II assessment pending; ICADA 2015 is an expert consensus with embedded RCT data; last updated 2015 -- biologics (oclacitinib, lokivetmab) postdate the guideline and are not included
Recommendation Discordance	25% (1 of 4 strong recommendations): antimicrobial therapy for secondary infections (Strong, Level IV)

EVIDENCE-RECOMMENDATION CONCORDANCE[1]

Intervention	Recommendation Strength	Evidence Level	Concordance[2]	Ref
Oclacitinib (Apoquel®)	● Strong	II	✓	[4]
Lokivetmab (Cytopoint®)	● Strong	II	✓	[5]
Cyclosporine (Atopica®)	● Strong	II	✓	[6]
Glucocorticoids (short-term)	○ Conditional	II	✓	[2]
Allergen-specific immunotherapy	○ Conditional	III	✓	[8]
Essential fatty acid supplementation	○ Conditional	III	✓	[9]
Antimicrobial therapy (for secondary infection)	● Strong	IV	⚠	[10]
Topical therapy (shampoos, sprays)	○ Conditional	III	✓	[2]

[1]Concordance = alignment between recommendation strength and evidence level. Strong recommendations are concordant at Levels I-III; discordant at Levels IV-V.

[2]Discordance (Strong + Level IV/V) flagged in amber; reflects a strong recommendation unsupported by Levels I-III evidence [12]

DIAGNOSTIC CRITERIA[1]

Threshold: ≥5 criteria (Favrot 2010) | **Sensitivity:** 85% | **Specificity:** 79%

1. Age at onset <3 years
2. Dog living mostly indoors
3. Glucocorticoid-responsive pruritus
4. Chronic or recurrent yeast infections
5. Affected front feet
6. Affected ear pinnae
7. Non-affected ear margins
8. Non-affected dorsolumbar area

Interpretation: Meeting ≥5 criteria supports CAD diagnosis; fewer criteria warrant broader differential consideration, including food allergy, sarcoptic mange, and Malassezia dermatitis.

[1]Favrot C, et al. Vet Dermatol. 2010;21(1):23-31. Criteria validated in European dog populations; sensitivity/specificity may vary in other populations.

TREATMENT SUMMARY: First-Line Agents

Agent	Dosing	Safety & Monitoring
Oclacitinib (Apoquel®)	0.4-0.6 mg/kg PO BID × 14d, then SID	CBC at baseline; avoid in dogs <12 months or with serious infections; monitor for GI upset, susceptibility to demodicosis, and neoplasia
Lokivetmab (Cytopoint®)	1-2 mg/kg SC q4-8 weeks	Minimal monitoring; rare injection site reactions; safe in puppies ≥3 months; may use with other therapies
Cyclosporine (Atopica®)	5 mg/kg PO SID × 4-6 wks, then taper	GI upset is common initially; gingival hyperplasia; avoid live vaccines; drug interactions (ketoconazole increases levels)

TREATMENT SUMMARY: Second-Line/Adjunctive

Agent	Dosing	Safety & Monitoring
Prednisolone/Prednisone	0.5-1 mg/kg PO SID × 5-7d for flares	Short-term only; PU/PD, polyphagia; avoid long-term due to iatrogenic hyperadrenocorticism
Allergen-specific immunotherapy	Per allergist protocol, 9-12 month trial	Rare anaphylaxis (<1%); requires allergy testing first; 60-70% response rate
Topical therapy	Medicated shampoos 1-2×/week; leave-on conditioners	Generally safe; phytosphingosine, ceramides for barrier repair; chlorhexidine for secondary infection

Response to Treatment & Expected Outcome

Metric	Value	Evidence Level[1]
Time to initial response (oclacitinib)	24-48 hours	II
Time to initial response (lokivetmab)	1-7 days	II
Time to initial response (cyclosporine)	4-6 weeks	II
Long-term control rate (any first-line agent)	65-75%	II
ASIT success rate	60-70%	III
Relapse rate after drug discontinuation	High (>80%)	III

[1]Evidence levels: II = RCT data; III = cohort/observational studies.

Response is typically measured by validated pruritus scales (PVAS) and lesion scores (CADESI-4).

EVIDENCE GAPS

1. Head-to-head RCTs comparing oclacitinib vs. lokivetmab
2. Long-term safety data (>3 years) for JAK inhibitors in dogs
3. Optimal duration and protocols for allergen-specific immunotherapy
4. Role of microbiome modulation (probiotics, fecal transplant) in CAD management
5. Validated biomarkers for predicting treatment response
6. Cost-effectiveness analyses comparing treatment strategies

PUBLIC HEALTH & ONE HEALTH

Zoonotic Potential: None. Canine allergic dermatitis is not transmissible to humans.

One Health: Shared environmental allergens (dust mites, pollens) affect both species; human atopic dermatitis research informs veterinary approaches.

REGULATORY & REPORTING

Reporting: Not reportable. No regulatory notification requirements.

Restrictions: None. No drug withdrawal periods for companion animals; some topical products may temporarily affect the coat for show dogs.

APPLICABILITY NOTES	
Oclacitinib (Apoquel) trials	Primary efficacy data derive from Zoetis-sponsored registration trials. Results are consistent across studies and corroborated by post-marketing cohort data, but independent head-to-head replication against other first-line agents is limited. Manufacturer sponsorship should be considered when interpreting absolute effect size estimates.
Lokivetmab (Cytopoint) trials	Primary clinical evidence derives from Zoetis-sponsored trials. Independent replication studies are emerging. Dose-finding and safety data are robust across multiple trials; efficacy estimates reflect manufacturer-controlled trial conditions.
ICADA 2015 guideline	The ICADA guideline is now 10 years old and does not include oclacitinib or lokivetmab, which entered the market after 2015. Recommendations for biologics in this synopsis are derived from primary trial data, not from the guideline. Formal AGREE II assessment is pending and is noted in Table 3.

METHODOLOGY NOTE

Evidence Framework: This synopsis applies a modified SORT/GRADE approach adapted for veterinary evidence synthesis [13]. The original SORT system, developed by Ebell et al. (2004), grades evidence quality (Levels 1-3) and recommendation strength (A-C) for patient-oriented outcomes. Our veterinary modification expands the evidence scale to five levels (I-V) to accommodate the broader range of evidence quality in veterinary medicine.
Veterinary Modifications: (1) Level I requires systematic review or meta-analysis of veterinary RCTs; (2) Level II includes multiple independent RCTs without synthesis; (3) Level III encompasses cohort studies and lower-quality RCTs; (4) Level IV represents case series, case-control studies, and expert opinion; (5) Level V indicates extrapolation from other species or in vitro data. Recommendation strength (Strong/Conditional) follows GRADE [14] conventions.
Limitations: The framework's validity is limited by: (1) sparse veterinary CPGs meeting AGREE II [15] standards, (2) the predominance of industry-funded trials, and (3) reliance on expert consensus where RCT evidence is absent. Users should interpret discordant recommendations (strong recommendations based on weak evidence) as areas warranting informed clinical judgment. PMID verification for all citations in this version is pending investigator sign-off.
AI-Assisted Development: This synopsis was developed through human-AI collaboration under scientific direction. AI assistance (Claude Sonnet 4.6 and Claude Opus 4.6, Anthropic; claude.ai web interface) was used for literature screening, data extraction, and draft generation, employing proprietary VES workflows governed by the VES Methods Manual V3.16.0 and the VES Standards Manual V3.10.0. All clinical content, evidence assessments, and recommendations were reviewed and validated by the named reviewer, who assumes full responsibility for the scientific accuracy and clinical relevance of this document.
Scientific Oversight: We acknowledge the legitimate concerns about the accuracy and reliability of AI-generated content in scientific and medical contexts. All PMIDs cited in this document have been or will be independently verified against PubMed by the named reviewer before external distribution. The named reviewer is accountable for all scientific judgments, interpretations of evidence, and clinical recommendations. This document is intended to support, not replace, the professional expertise and judgment of qualified veterinary practitioners.
Evidence Synthesis Category: This document is a Veterinary Evidence Synopsis (VES) -- a standardized rapid evidence synthesis product designed to support point-of-care clinical decision-making in veterinary practice. This synopsis was produced in compliance with RAISE (Reporting AI in Systematic Evidence Synthesis) transparency standards. AI model identity (Claude Sonnet 4.6 / Opus 4.6), task allocation (screening, extraction, draft generation), and human oversight (investigator review, sign-off, and accountability) are disclosed above in accordance with RAISE requirements.

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