American Academy of Dermatology (AAD)

Annual Meeting Highlights

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ABSTRACTS INDEX

ACNE

1. Daily Almond Intake Reduces Acne Lesions and Stabilizes Sebum in Non-Cystic Acne: A Randomized Controlled Trial

Min M, Khan Z, Lee A, Afzal N, Dulai AS, Adnan S, Nguyen N, Sivamani RK et al.

BACKGROUND:

- Acne vulgaris affects >50 million people annually, causing significant psychosocial burden.
- Existing therapies carry adverse effects, underscoring the need for safe dietary alternatives. Almonds are nutrient-rich and may benefit skin via antioxidant and lipid-modulating mechanisms.

OBJECTIVES:

- To determine whether daily almond supplementation reduces acne severity, modulates sebum production, and alters gut microbiome composition.

METHODS:

- A 20-week, randomized, double-blind, controlled trial enrolled 60 participants (age 15–45) with mild-to-moderate non-cystic acne (Investigator Global Assessment (IGA) 2–3; ≥10 inflammatory + ≥5 non-inflammatory lesions).
- Participants received either 60g/day of raw almonds (n=30) or a calorie-matched non-nut snack (n=30). Per-protocol completers: almond n=17, control n=19.
- Assessments at Weeks 4, 8, 12, and 20 measured lesion counts, sebum excretion, quality of life (QoL), mood, stool and plasma short-chain fatty acids (SCFAs), and gut microbiome as shown in Table 1.

RESULTS:

Table 1: Summary of Outcome Measures at Week 20

Outcome	Almond Group	Control Group
Total Lesion Count (Week 20)	↓ 20% (p = 0.02)	No significant change
Forehead Sebum - Week 4	Stable	↑ 42% (p = 0.03)
Forehead Sebum - Week 8	Stable	↑ 62% (p = 0.02)
Anti-inflammatory gut bacteria (Bifidobacterium, L. rhamnosus)	↑ Enriched	—
Butyrate-producing bacteria (Coprococcus, Butyrivibrio)	↑ Enriched	—
SCFAs / Microbiome Diversity / QoL / Mood	No significant difference	No significant difference

CONCLUSION:

- **Daily supplementation with 60g almonds significantly reduced acne lesion counts and prevented sebum elevation observed in controls, with favorable gut microbiome shifts.**
- **Almonds represent a safe, whole-food dietary strategy for acne management.**

2. Isotretinoin-Associated Suicidality in Adolescents: A Narrative Review

Ann Rydberg M.D., Keith Miller M.D., and Alastair McKean M.D.

BACKGROUND:

- Meta-analyses in adults show isotretinoin improves mental health and reduces suicide risk.
- Evidence in adolescents (≤18 years) - the highest-risk group for psychiatric adverse effects - is limited. This review evaluates whether isotretinoin increases suicidality in this population.

METHODS:

- PubMed, MEDLINE, EmBase, PsychINFO, and Cochrane Library were searched for studies (1982–September 2024) reporting suicidality after isotretinoin for acne vulgaris in patients ≤18 years. A total of 24 full-text articles were included.

RESULTS:

- Suicidality rates: Events were rare across cohorts (0–3/study). In 212,448 adolescents, isotretinoin users were less likely to attempt suicide during treatment, with no trigger effect at initiation. FDA data (1997–2017) showed ages 10–19 comprised 57.7% of completed suicides and 68.1% of attempts, likely reflecting prescription volume.
- Case reports: 8 reports and 5 series (16 adolescents) documented suicidal ideation; one completed suicide occurred in a 17-year-old. Symptoms resolved in several cases upon discontinuation.
- Risk factors: Among 37 completed suicides, 22% had a prior psychiatric history and 57% had a contributing factor (stress, substance use, family history). Ideation typically emerged early in or after treatment.
- Isotretinoin vs. oral antibiotics: Three comparative studies showed no significant difference in suicidality during treatment; one noted a higher post-treatment rate with isotretinoin.
- Treatment continuation: Isotretinoin was continued in 67% of 110 hospitalized patients and 54% of 85 patients post-suicide attempt.

CONCLUSION:

- **No consistent causal relationship between isotretinoin and suicidality was identified across study designs.**
- **Pre-treatment psychiatric screening is advised; suicidal ideation often occurs alongside additional risk factors.**
- **Enhanced monitoring is recommended at treatment initiation and after treatment completion.**

3. Microneedling combined with PRP Outperforms Monotherapy in Atrophic Acne Scars: A Systematic Review and Meta-analysis

Sanchez-Cruz C, Afreen S, Sairaj RT, et al.

BACKGROUND:

- Atrophic acne scars are a prevalent and psychosocially burdensome dermatological condition.
- Microneedling and platelet-rich plasma (PRP) individually demonstrate efficacy as minimally invasive treatments; however, evidence for their combined use remains limited.

OBJECTIVES:

- To evaluate the comparative effectiveness of combined microneedling + PRP versus monotherapy for atrophic acne scars.

METHODS:

- A systematic search of databases was performed to identify eligible clinical studies published through July 2025. Meta-analysis assessed conclusiveness of significant outcomes. 17 (n = 1,111) were included.
- Primary outcomes included change in Goodman and Baron's quantitative scar score, proportion achieving good/excellent response, and patient satisfaction.

RESULTS:

- Combination therapy significantly outperformed microneedling alone on Goodman & Baron score (MD –2.91; 95% CI –4.16 to –1.65; I^2 = 43.5%; p < 0.01), ≥2-grade improvement (RR 3.05; 1.68–5.51; p < 0.01), ≥75% photographic improvement (MD 2.39; 1.25–4.59; p < 0.01; TSA confirmed), and ≥50% improvement (RR 2.01; 1.16–3.48; p = 0.01; TSA inconclusive).
- Versus PRP monotherapy, combination therapy showed numerically higher odds of ≥50% improvement (RR 4.82; 1.34–17.35) but did not reach significance for most endpoints. (MD = mean difference; RR = risk ratio; CI = confidence interval; I^2 = heterogeneity; TSA = Trial Sequential Analysis; PRP = platelet-rich plasma).
- Adverse events (erythema, edema, pain, hyperpigmentation) were mild and comparable across all groups.

CONCLUSION:

❖ **Combined microneedling and PRP is more effective than either monotherapy alone for atrophic acne scars, with no additional safety burden. Standardization of PRP protocols and larger longitudinal trials are needed to optimize outcomes and confirm long-term benefits.**

4. Antihistamines as Adjuncts to Oral Isotretinoin in Acne Vulgaris: A Systematic Review and Meta-Analysis of RCTs

Sanchez Cruz C, Beltran Covarrubias SA, Chen Liang A, et al.

BACKGROUND:

- Acne vulgaris is a prevalent inflammatory dermatosis with significant psychosocial impact.
- Oral isotretinoin is the gold-standard therapy for moderate-to-severe disease, but mucocutaneous adverse effects frequently limit adherence. H_1-antihistamines, with anti-inflammatory and sebo-suppressive properties, may enhance isotretinoin's efficacy and tolerability.

OBJECTIVES:

- To evaluate the efficacy and safety of combining oral isotretinoin with H_1-antihistamines versus isotretinoin monotherapy in patients with acne vulgaris.

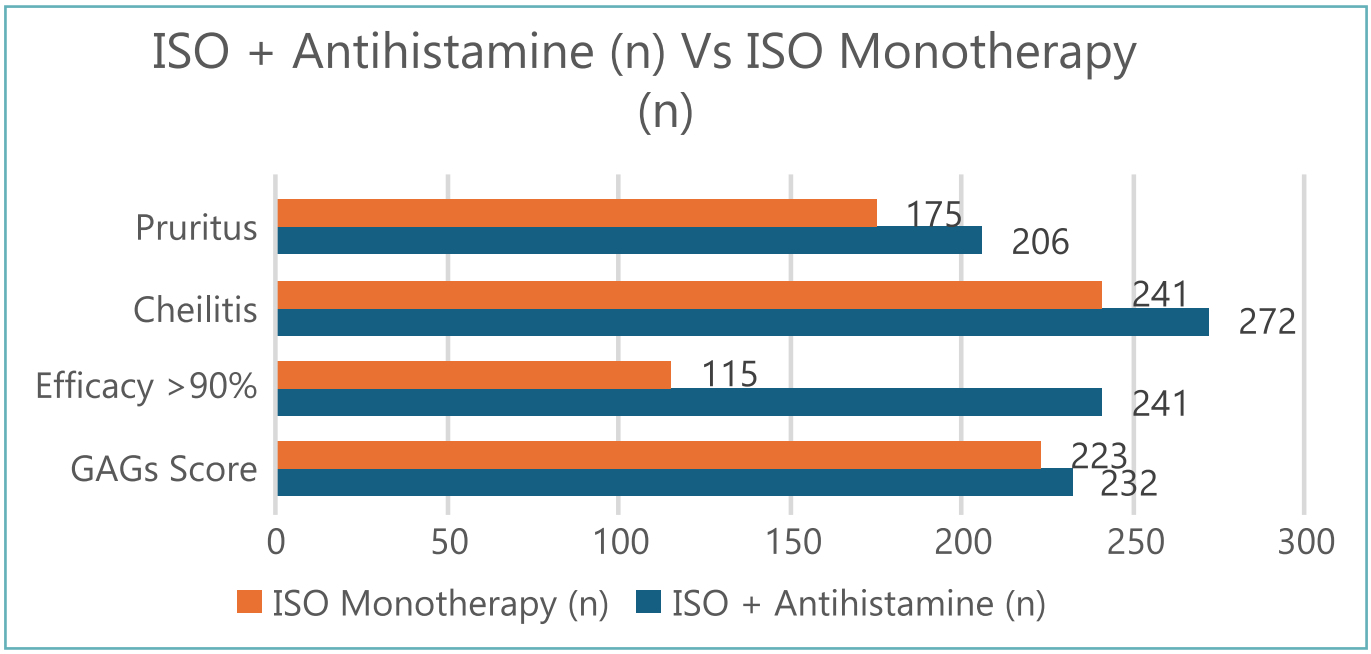
METHODS:

- Databases were searched for RCTs comparing isotretinoin (ISO) monotherapy with isotretinoin plus H_1-antihistamines.
- Primary outcomes: GAGS Global Acne Grading System (GAGS) score change, lesion counts, and treatment efficacy (>90% GAGS reduction).
- Secondary outcomes: mucocutaneous adverse effects and acne flare-ups.

RESULTS:

- 11 RCTs (n = 764) were included. Significant variables are shown in Figure 1.

Figure 1: Participant counts per significant outcome



- Combination therapy significantly reduced GAGS scores (MD −2.29; $p < 0.01$) and increased the likelihood of >90% GAGS reduction (RR = 1.54; $p < 0.01$). Pruritus was markedly reduced (RR = 0.35; $p < 0.01$) and cheilitis modestly decreased (RR = 0.83; $p = 0.04$).

- No significant differences were observed in lesion counts, dryness, or flare-ups. GRADE certainty was moderate for the four significant outcomes and low to very low for the rest. Trial sequential analysis (TSA) confirmed benefit only for >90% GAGS reduction and pruritus.

CONCLUSION:

- **The combination of oral isotretinoin with H_1-antihistamines demonstrates superior clinical outcomes compared to isotretinoin alone, with meaningful improvements in overall acne severity and reduced mucocutaneous side effects, particularly pruritus and cheilitis.**

5. Dietary Influences on Acne Vulgaris: Evidence Synthesis and Adolescent Counselling Framework

Kate Bryant

BACKGROUND:

- Acne vulgaris globally affects >85% of adolescents. Its pathogenesis is multifactorial, involving hormonal dysregulation, follicular hyperkeratinisation, Cutibacterium acnes proliferation, inflammation, and genetic predisposition.
- Diet has emerged as a potentially modifiable risk factor; however, evidence remains inconsistent, limiting reliable clinical guidance.

OBJECTIVES:

- To synthesize current evidence on dietary exposures implicated in acne pathogenesis and to propose a framework for evidence-informed, culturally safe dietary counselling in adolescent consultations.

METHODS:

- Randomized controlled trials (RCTs), cohort studies, and meta-analyses were examined conducting a narrative review.

RESULTS:

- Dietary factors associated with acne were categorized as exacerbating or potentially beneficial. Key findings and corresponding evidence levels are summarized in Table 2.

Table 2: Summary of Dietary Factors and Evidence in Acne Vulgaris

Category	Dietary Factor	Key Finding	Evidence Level
Exacerbating	High-Glycaemic Index Foods	↑ Insulin/IGF-1 → ↑ androgen signalling → ↑ sebum	Strong
	Milk (Especially Skim)	Hormones & IGF-1 promoting sebum + hyperkeratinisation *(strongest in Western cohorts)*	Moderate-Strong
	Whey Protein Supplements	↑ IGF-1; anabolic effects (observational, gym-going males)	Limited

Category	Dietary Factor	Key Finding	Evidence Level
Beneficial	Omega-3 Fatty Acids	Anti-inflammatory, immunomodulatory	Emerging
	Probiotics / Fermented Foods	Gut–skin axis modulation; ↓ inflammation; inhibits C. acnes	RCT support (adjunct)

GI = glycaemic index; IGF-1 = insulin-like growth factor 1; RCT = randomized controlled trial; C. acnes = Cutibacterium acnes.

CONCLUSION:

- **Diet is not the primary cause of acne vulgaris but is increasingly recognized as a modifiable contributory factor.**
- **Integrating evidence-informed dietary counselling into adolescent consultations enables clinicians to address modifiable risks, enhance patient engagement, and tailor guidance to cultural and psychosocial contexts.**
- **Advice should remain patient-centred and non-restrictive, acknowledging current evidence limitations.**

6. ABO Blood Group System and Acne Vulgaris: Severity Assessment and Scar Prevalence in a Colombian Cohort

García-Mayorca S, Fierro-Lozada JD, et al.

BACKGROUND:

- The ABO blood group (BG) system is a genetic determinant with recognized influence on immune function, bacterial adhesion, and inflammatory responses.
- Its potential role in acne vulgaris pathogenesis remains inadequately characterized, despite mechanistic plausibility through modulation of Cutibacterium acnes adhesion, innate immune activation, and tissue-level inflammatory cascades.

OBJECTIVES:

- To assess whether ABO blood group is associated with acne severity and scar prevalence in a Colombian dermatology cohort.

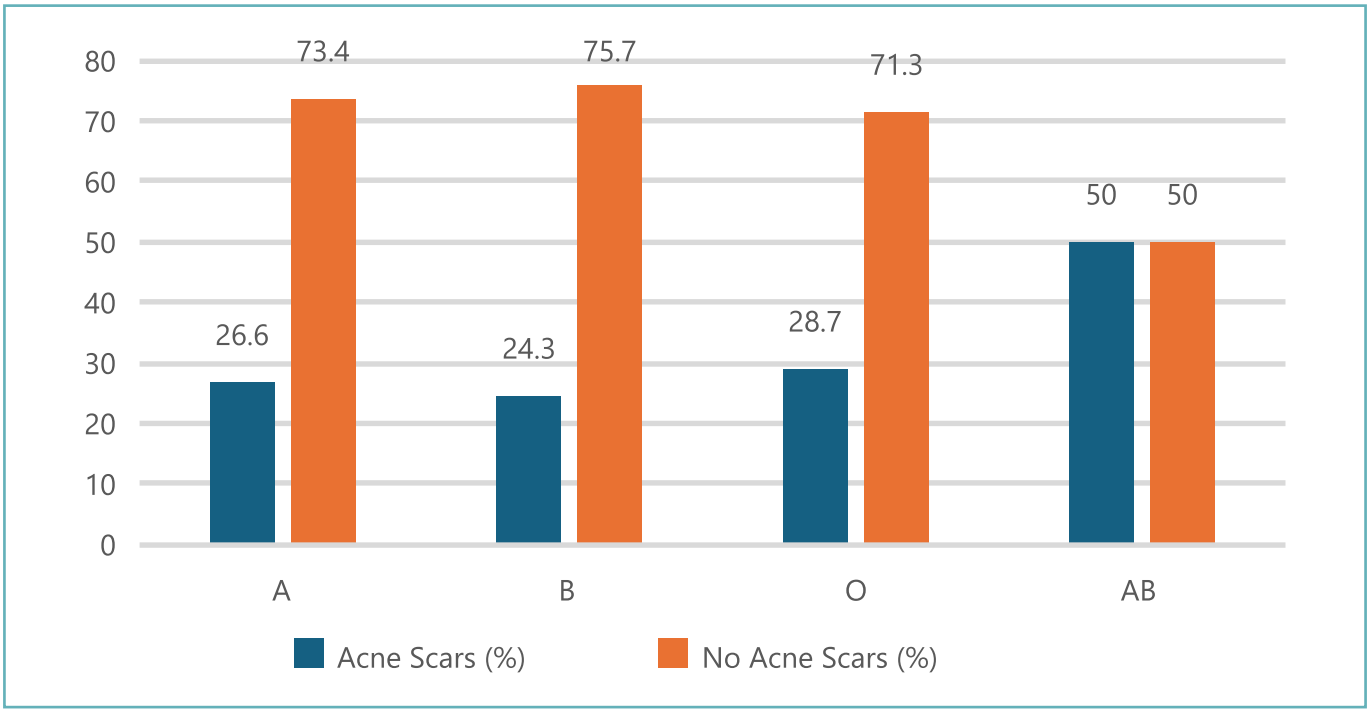
METHODS:

- A five-year (2019–2024) retrospective descriptive study was carried out at a dermatology referral centre in Bogotá, Colombia.
- Patient records were reviewed for age, sex, ABO blood group, anatomical lesion distribution, and acne severity categorised as mild, moderate, or severe based on lesion type and count.

RESULTS:

- A total of 747 patients were enrolled, of whom nearly two-thirds were female (64.3%, n ≈ 480).
- When stratified by severity, the majority presented with moderate acne (70.2%), while severe acne accounted for 20.2% of cases.
- Figure 2 illustrates the distribution of acne scar prevalence across ABO blood groups, with BG-AB showing the highest scar prevalence.

Figure 2: Distribution of Acne Scar Prevalence Across ABO Blood Groups



CONCLUSION:

- **Female predominance and moderate severity as the prevailing clinical grade align with established literature.**
- **Across BG-A, B, and O, blood group showed no meaningful influence on acne severity grade with the notable exception of BG-AB.**
- **Study suggests BG-AB may confer heightened scarring susceptibility, possibly through distinct inflammatory or wound-healing pathways.**

7. Consensus-Driven Multidisciplinary Framework for Pharmacist Integration in Acne and Atopic Dermatitis Management

Sihota A, Abouzant A, Blecher J, et al.

BACKGROUND:

- Acne vulgaris and atopic dermatitis (AD) are chronic, high-burden dermatological conditions requiring long-term multimodal management.
- Expanded Canadian provincial pharmacist legislation has created an opportunity to formalize the pharmacist's role in dermatological care.
- To address the absence of a national framework, panels of 22 dermatologists and pharmacists convened.

OBJECTIVES:

- To develop a consensus-based, collaborative framework defining the pharmacist's role in the management of mild-to-moderate acne vulgaris and atopic dermatitis alongside community dermatologists.

METHODS:

- Patient journey gaps in acne and AD care were identified across four domains: initial assessment, follow-up, communication, and interprofessional collaboration.
- Consensus statements were developed using the Nominal Group Technique (NGT). Table 3 summarizes the study design.

Table 3: Study Design Overview

Parameter	Detail
Panels (provinces)	4 - British Columbia, Ontario, Alberta, Montreal
Participants	22 dermatologists and pharmacists
Method	Nominal Group Technique (NGT)
Conditions	Mild-to-moderate acne vulgaris; atopic dermatitis (AD)
Guideline reference	Canadian and/or AAD guidelines

NGT = Nominal Group Technique; AD = atopic dermatitis; AAD = American Academy of Dermatology.

RESULTS:

- NGT yielded 11 consensus statements for acne and 10 for AD across shared domains including disease burden, assessment, pharmacist roles, skincare, collaboration, training, and guideline adherence. Table 4 compares statements across both conditions.

Table 4: Consensus Statement Domains - Acne Vulgaris vs. Atopic Dermatitis

Domain	Acne Vulgaris (11 statements)	Atopic Dermatitis (10 statements)
Disease burden & goals	Impacts quality of life; goals include lesion clearance, scar prevention, and QoL improvement	Multifactorial disease; management targets skin barrier, immune, and environmental contributors
Pathogenesis	Abnormal keratinization, excess sebum, C. acnes proliferation, inflammation	Skin barrier impairment, immune dysregulation, environmental triggers

Assessment	Standardized tools and patient-reported outcomes for severity and treatment monitoring	Validated tools and patient-reported outcomes for severity and treatment monitoring
Pharmacist role	Initiate, optimize, and monitor therapy; skincare advice; patient education	Assess, recommend, monitor, and educate patients
Initial assessment	Standardized in-person review; document presentation, history, and goals	Standardized in-person review; document presentation, history, and goals
Follow-up	Visual tools and scoring; monitor changes, goals, adherence	Virtual or in-person; monitor response, adjust therapy, assess adherence
Skincare guidance	Cleansers, moisturizers, sunscreens, cosmetic selection	Individualized cleansers, moisturizers; flare prevention
Collaboration	Coordinate with other HCPs as needed	Coordinate with other HCPs as appropriate
Training	Enhanced training on acne medications and best practices	Additional training on AD medications and assessment tools
Workflow & guidelines	Integrate into pharmacy workflow; follow Canadian/AAD acne guidelines	Integrate into pharmacy workflow; follow Canadian/AAD AD guidelines

C. acnes = Cutibacterium acnes; AD = atopic dermatitis; AAD = American Academy of Dermatology; HCP = healthcare provider; QoL = quality of life.

CONCLUSION:

- **This consensus establishes the first harmonized Canadian framework for pharmacist-led dermatological care.**
- **By defining clear, guideline-aligned roles within a multidisciplinary model, it provides a replicable blueprint to close care gaps and improve outcomes in mild-to-moderate acne and AD.**

8. Topical combination of clascoterone 1% cream and adapalene 0.3% gel for moderate-to-severe acne: a 16-week pilot study

Kircik L, Squittieri N, et al

BACKGROUND:

- Clascoterone cream 1%, a topical androgen receptor inhibitor, is approved for acne vulgaris in patients ≥12 years.
- Guidelines support multimodal topical therapy targeting multiple pathogenic pathways as first-line treatment across all acne severities.

OBJECTIVES:

- To evaluate the efficacy and safety of clascoterone 1% cream combined with adapalene 0.3% gel in patients with moderate-to-severe acne vulgaris.

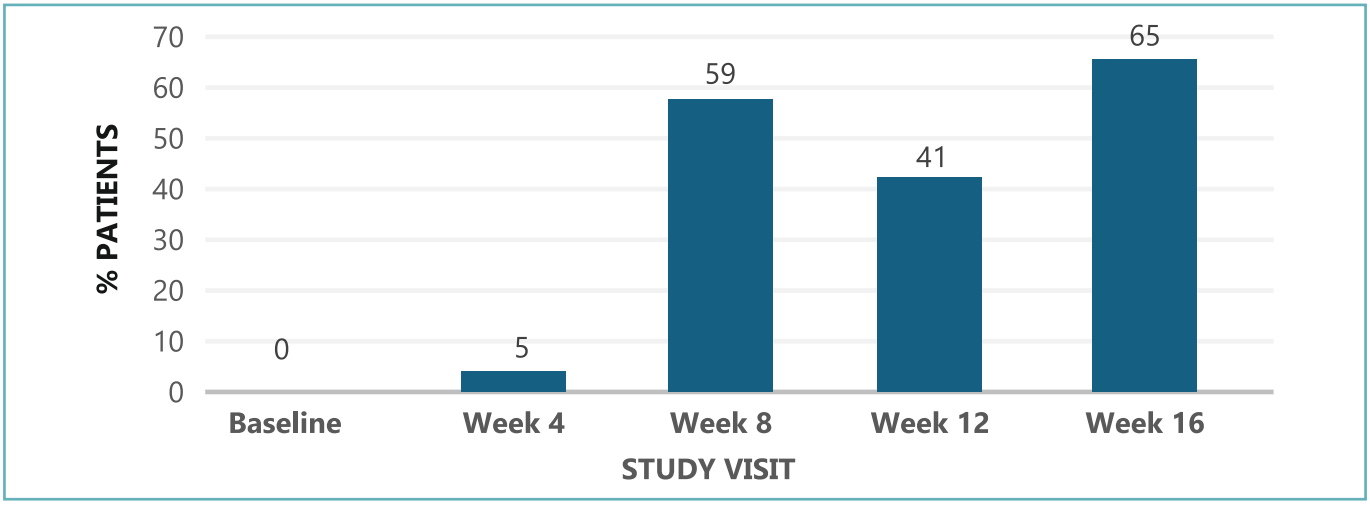
METHODS:

- 20-week open-label pilot study enrolled males and nonpregnant females ≥12 years with an Investigator's Global Assessment (IGA) score of 3–4.
- Clascoterone cream 1% was applied twice daily and adapalene gel 0.3% once nightly for 16 weeks, followed by 4-week follow-up.
- Primary endpoint: proportion achieving IGA success (score 0 = clear or 1 = almost clear) at Week 16.
- Secondary endpoints: percent reductions in inflammatory (ILC), noninflammatory (NILC), and total lesion counts (TLC). Skin-related quality of life (Dermatology Life Quality Index (DLQI); 0–30) and local tolerability were also assessed.

RESULTS:

- IGA score changes have been shown in Figure 3.

Figure 3: IGA score success ((% patients achieving clear/almost clear)



• Table 5 shows reductions in lesion counts.

Table 5: Lesion count reductions (all P <0.001 vs baseline)

Week 16 endpoint	Mean % reduction (SD)	P-value
ILC	90.5% (10.1)	<0.001
NILC	84.8% (13.5)	<0.001
TLC	87.3% (11.4)	<0.001
DLQI score reduction	3.7 (6.2)	0.02

ILC= inflammatory, NILC= noninflammatory, TLC= total lesion counts, DLQI= Dermatology Life Quality Index

- The regimen was well tolerated over 20 weeks with no adverse events.
- Most reactions were absent or trace throughout. Mild oiliness persisted in one patient through Week 20; mild burning and pruritus were transient and resolved by Week 16.

CONCLUSION:

- **The 16-week combination of clascoterone 1% cream and adapalene 0.3% gel produced significant reductions in lesion burden and improved QoL in patients with moderate-to-severe acne.**
- **The regimen was well tolerated over 20 weeks with no adverse events.**

9. Clascoterone 1% Cream Combined with Clindamycin 1.2%/Benzoyl Peroxide 5% Gel in Moderate-to-Severe Acne: A 16-Week Open-Label Pilot Study

Kircik L, Squittieri N, et al

BACKGROUND:

- Clascoterone cream 1%, a topical androgen receptor inhibitor approved for acne vulgaris in patients ≥12 years, targets androgen-driven sebum production.
- Combined with clindamycin 1.2%/benzoyl peroxide 5% (CP/BP) gel offers a mechanistically comprehensive topical approach aligned with multimodal treatment guidelines.

OBJECTIVES:

- To assess the efficacy, tolerability, and quality-of-life impact of clascoterone 1% plus CP 1.2%/BP 5% gel over 16 weeks in moderate-to-severe acne.

METHODS:

- This open-label, 16-week pilot study enrolled male and nonpregnant female patients aged ≥12 years with an Investigator's Global Assessment (IGA) IGA score of 3–4.
- Clascoterone cream 1% was applied twice daily and CP 1.2%/BP 5% gel once daily.
- The primary endpoint: IGA success (score of 0 or 1) at Week 16.
- Secondary endpoints: percent reduction from baseline in inflammatory (ILC), noninflammatory (NILC), and total lesion counts (TLC) at Week 16.
- Quality of life was measured via the Dermatology Life Quality Index (DLQI; 0–30 scale).
- Tolerability was graded for erythema, dryness, peeling, oiliness (0–4), pruritus, and burning (0–5).

RESULTS:

- Nine of 10 patients completed the study (56% female; mean age 33 ± 17 years). All had moderate acne (IGA = 3) at baseline.
- All 9 patients achieved IGA success at Week 16.
- Reductions in all lesion counts and DLQI improvement were statistically significant as shown in Table 6.

Table 6: Efficacy outcomes at Week 16

Outcome	Baseline (mean ± SD)	Week 16 reduction	p-value
Primary endpoint			
IGA success (score 0 or 1), n (%)	0 (0%)	9/9 (100%)	<0.05
Secondary endpoints — lesion count % reduction			
ILC (inflammatory)	18.0 ± 5.0	−96.4%	0.007
NILC (noninflammatory)	13.0 ± 4.9	−86.1%	0.009
TLC (total)	31.0 ± 5.8	−92.0%	0.008
Quality of life			
DLQI score reduction	5.7 ± 3.6	−3.1	0.014

DLQI = Dermatology Life Quality Index (0–30; higher = worse); IGA = Investigator's Global Assessment; ILC = inflammatory lesion count; NILC = noninflammatory lesion count; TLC = total lesion count.

- No adverse events were reported; local skin reactions remained absent or trace throughout.

CONCLUSION:

❖ **Clascoterone 1% combined with CP 1.2%/BP 5% gel achieved 100% IGA success with significant lesion count reductions and quality-of-life improvement over 16 weeks, with an excellent tolerability profile.**

10. Isotretinoin use and inflammatory bowel disease: onset, activity, and clinical outcomes - a retrospective cohort study

Cutrona M, Elizabeth A, et al

BACKGROUND:

- Inflammatory bowel disease (IBD), encompassing Crohn's disease (CD) and ulcerative colitis (UC), has been speculatively linked to isotretinoin since early case reports. While large meta-analyses have not confirmed a causal association with new-onset IBD, data on isotretinoin's effect in patients with pre-existing IBD remain scarce.

OBJECTIVES:

- To determine whether isotretinoin is associated with new IBD onset or altered disease activity in patients with established IBD, using validated clinical indices.

METHODS:

- Single-center retrospective cohort of IBD Center patients who received isotretinoin (2015–2025).
- Eligible patients had a baseline IBD visit within 4 months before starting isotretinoin and ≥1 follow-up within 12 months. Patients under 16 or with missing dates were excluded.
- Disease activity was assessed using the Partial Mayo Score (pMS) for UC and Harvey-Bradshaw Index (HBI) for CD.
- Primary outcome: composite IBD status change (≥1-point rise in HBI or pMS, or isotretinoin discontinuation due to IBD).
- Secondary outcomes: post-treatment clinical remission and changes in objective inflammatory markers (ESR, CRP, fecal calprotectin, intestinal ultrasound).

RESULTS:

- Remained in remission: 92% (34/37)
- IBD status change: 11% (4/37); No statistically significant changes were observed in any clinical parameter (Table 7).

Table 7: Isotretinoin outcomes

Isotretinoin Outcomes (n=37)			
Composite IBD Clinical Status Change After Isotretinoin (%)	4 (11)		
Median Isotretinoin Duration, weeks (IQR)	31 [26-46]		
Clinical Parameters	**Baseline**	**Post-Isotretinoin**	**P-value**
Clinical Remission (n=37)	32 (86)	34 (92)	0.7
HBI (n=21)	0 [0-0]	0 [0-0]	0.3
Partial Mayo Score (n=16)	0 [0-1.3]	0 [0-0.3]	0.8
Erythrocyte Sedimentation Rate (n=32)	11 [7-19]	8 [5-21]	0.2
C-Reactive Protein (n=36)	2.2 [0.8-3.0]	2.0 [0.9-3.0]	1
Calprotectin (n=9)	147 [64-228]	158 [35-275]	0.3

Medians [IQR] presented for continuous variables; n (%) for categorical.

CONCLUSION:

- **Isotretinoin did not significantly affect IBD disease activity in patients with well-controlled UC or CD.**
- **The 11% IBD status change rate was largely driven by concurrent biologic transitions unrelated to isotretinoin. All disease indices and inflammatory markers remained stable throughout treatment.**

11. Oral Isotretinoin Regimens in Acne Vulgaris: A Network Meta-Analysis of Efficacy, Safety, and Relapse

Garza-Dueñas GG, Kuceki G MD, et al

BACKGROUND:

- Despite isotretinoin's established efficacy in acne, its adverse effect burden has prompted exploration of alternative dosing strategies beyond the conventional regimen.

OBJECTIVES:

- To compare efficacy, safety, relapse risk, and patient satisfaction across oral isotretinoin dosing regimens via network meta-analysis.

METHODS:

- Databases were systematically searched for studies evaluating isotretinoin dosing.
- Six regimens were assessed: traditional (0.5–1.0 mg/kg/day), low-dose (<0.5 mg/kg/day), intermittent (0.5–0.7 mg/kg/day for 1 week every 4 weeks), high-dose (>1 mg/kg/day), alternative (alternate-day), and other regimens.
- A frequentist random-effects network meta-analysis estimated mean differences (MD), odds ratios (OR), and treatment rankings via P-scores (0–1; higher = better), with 95% CIs.

RESULTS:

- Traditional dosing ranked highest for end-of-treatment acne severity reduction (P-score 0.99) and lowest relapse risk (P-score 0.92).
- At 6–12 months follow-up, intermittent regimens showed greater Global Acne Grading System (GAGS) reduction versus traditional (MD 6.14; 95% CI 3.56–8.71; $p < 0.0001$), though end-of-treatment and follow-up analyses used different study subsets, limiting direct comparability.
- Low-dose regimens achieved the highest patient satisfaction (MD 0.54; $p < 0.0001$; P-score 1.00).
- Both low-dose (OR 2.65; $p = 0.008$) and intermittent regimens (OR 3.39; $p = 0.030$) carried significantly higher relapse risk versus traditional dosing.
- Cheilitis was least frequent with intermittent dosing (OR 0.08 vs traditional; $p < 0.0001$).

CONCLUSION:

- **Traditional isotretinoin remains the benchmark for efficacy and relapse prevention.**
- **Low-dose regimens offer superior patient satisfaction with better tolerability, while intermittent dosing minimizes adverse effects at the cost of higher relapse.**
- **Dosing should be individualized based on efficacy needs, tolerability, and patient preference.**

12. Trifarotene in Personalized Holistic Regimens for Acne and Acne Sequelae: Real-World Evidence for Improved Treatment Outcomes and Skin Quality

Dréno B, Martschin C, et al

BACKGROUND:

- Acne vulgaris and its sequelae - acne-induced hyperpigmentation (AIH), scarring, enlarged pores, and altered texture that significantly impairs quality of life.
- Effective management must address overall skin quality (SQ) beyond lesion clearance.
- Trifarotene, a potent, selective RAR-γ topical retinoid, exhibits anti-inflammatory, comedolytic, and anti-comedogenic activity, with evidence supporting efficacy in acne, sequelae, and skin barrier restoration.

OBJECTIVES:

- To evaluate clinical outcomes of personalized multimodal regimens incorporating trifarotene cream within a structured CTMP™ (Cleanse, Treat, Moisturize, Protect) framework, assessed using the multidimensional Skin Quality Assessment Scale (SQS).

METHODS:

- Four real-world cases (ages 15–25 years; Fitzpatrick phototypes II–VI) presenting with acne of varying severity and diverse SQ concerns were analyzed. Each patient received a personalized CTMP™ regimen comprising:
  - Trifarotene cream: administered nightly (daily) or three times weekly, based on acne severity
  - Cleansing: non-irritating pH 5 cleanser
  - Moisturization: non-comedogenic formulation applied twice daily
  - Photoprotection: broad-spectrum SPF 50+ (UVA/UVB) sunscreen
  - Adjunct therapies: oral lymecycline (100 mg/day) and/or non-animal stabilized hyaluronic acid (NASHA™) gel injections, where indicated
- Treatment was further tailored to phototype, sequelae risk, comorbidities, and patient preferences. Outcomes were evaluated using the SQS across domains of texture, discoloration, firmness, and hydro-lipid balance.

RESULTS:

- All patients showed significant improvements in both lesion counts and SQS parameters. Detailed case profiles, regimens, and outcomes are presented in Table 8.

Table 8: Patient Profiles, Personalized Regimens, and Outcomes

Case	Patient	FST	Presentation	Regimen	Outcomes
1	15 yr, Male	III	Moderate-to-severe papulopustular acne + nodules; family hx of severe scarring; oral therapy declined	Trifarotene nightly; hydrating cream + non-irritating cleanser	3 months: 40% lesion reduction 27 weeks: 80–90% reduction (inflammatory + non-inflammatory) SQS: moderate/severe → mild (pores, scars, redness, pigmentation, oiliness, dullness)

Case	Patient	FST	Presentation	Regimen	Outcomes
2	18 yr, Female	VI	Severe mixed acne (GEA Grade 3); extensive dark AIH; 5-yr hx; familial acne, high stress, competitive swimming	Trifarotene nightly + oral lymecycline 100 mg/day × 3 months; tinted SPF 50+; no exfoliation/peels	3 months: >75% reduction in pigmentation + acne severity 1 year: sustained remission, no relapse SQS: pigmentation 3→1; pores 3→0
3	25 yr, Female	II	Moderate acne + redness, pigmentation, dullness, oiliness, visible pores	Trifarotene 3×/week + 3 NASHA™ gel injections; twice-daily cleanse/moisturize; SPF 50+ daily	1 month: near-complete resolution (redness/pigmentation 2→1) 5 months: acne scarring improved despite non-compliance SQS: most scores → 0
4	24 yr, Male	III	Post-isotretinoin (10-yr facial/truncal acne); residual atrophic scars + texture concerns	Trifarotene nightly; gentle cleanser + moisturizing lotion	8 weeks: acne maintenance achieved SQS: moderate → mild (pores, redness, dullness); hydro-lipid profile rebalanced

AIH, acne-induced hyperpigmentation; CTMP™, Cleanse, Treat, Moisturize, Protect; FST, Fitzpatrick skin type; GEA, Global Evaluation Acne; NASHA™, non-animal stabilized hyaluronic acid; RAR-γ, retinoic acid receptor gamma; SPF, sun protection factor; SQ, skin quality; SQS, Skin Quality Assessment Scale

CONCLUSION:

- **Personalized trifarotene-based CTMP™ regimens consistently improved acne severity and multidimensional SQ across diverse patient profiles.**
- **Trifarotene demonstrated clinical versatility across monotherapy, antibiotic combination, aesthetic adjunct, and post-isotretinoin maintenance settings. Sustained remission was observed at 1-year follow-up (Case 2).**
- **Integration of validated SQ assessment tools such as the SQS into routine acne practice supports a holistic, patient-centered approach, particularly for those at risk of acne sequelae.**

13. Trifarotene: The Fourth-Generation Retinoid - Molecular Basis, Efficacy, and Clinical Outcomes in Acne

Li MK, Baldwin H, Eichenfield LF, Harper JC, Hougeir FG, et al.

BACKGROUND:

- Topical retinoids are a cornerstone of acne therapy.
- First-generation retinoids (e.g., tretinoin) and third-generation polyaromatic agents (e.g., adapalene, tazarotene) exhibit broad, non-selective retinoic acid receptor (RAR) activity across RARα, RARβ, and RARγ subtypes.
- Trifarotene is the first "fourth-generation" retinoid, engineered via rational, structure-based molecular design to achieve targeted RARγ selectivity.
- Approved by the FDA in October 2019, it has accumulated over 5 years of post-approval clinical and translational evidence.

OBJECTIVES:

- To synthesize preclinical and clinical evidence characterizing the molecular design, receptor pharmacology, and clinical performance of trifarotene across acne severity spectra and sequelae (scarring, post-inflammatory hyperpigmentation [PIH]).

METHODS:

- Structured search of PubMed and Google Scholar using terms: trifarotene, RARγ, acne vulgaris, truncal acne, scarring, PIH, pharmacokinetics, and randomized controlled trials (RCTs).
- Phase III pivotal and 52-week studies, Phase IV post-approval trials, and translational data were included.

RESULTS:

Molecular Design & Receptor Selectivity

- Trifarotene binds RARγ with an EC_{50} of 7.7 nM — ~65-fold more selective than RARβ. and ~16-fold more than RARβ. This is the highest RARγ selectivity of any approved retinoid as shown in Table 9.

Table 9: RAR Subtype Selectivity of Retinoids (EC_{50}, nM)

Compound (Generation)	RARα EC_{50} (nM)	RARβ EC_{50} (nM)	RARγ EC_{50} (nM)	RARγ Selectivity vs RARα
Trifarotene (4th-gen)	498	125	**7.7**	**~65×**
Adapalene (3rd-gen)	22	2	9	~2.4×
Tazarotene (3rd-gen)	11	2.5	11	~1×
Tretinoin (1st-gen)	0.9	0.9	0.7	Non-selective

Lower EC_{50} = more potent. Green = highly selective; Red = non-selective or potent across all subtypes. Trifarotene has ~65-fold selectivity for RARγ vs. RARα, and ~16-fold vs. RARβ. It activates keratinization, desquamation, cornification, and cell adhesion gene transcripts 3-fold more potently than tazarotene in ex vivo human skin.

- In ex vivo human skin, trifarotene activated keratinization, desquamation, cornification, and cell adhesion transcripts 3-fold more potently than tazarotene.
- Rapid hepatic metabolism limits systemic exposure; absorption remained below quantification limits with daily topical use up to 2 g.

Clinical Efficacy (N > 2,300 across 6 studies)

- Six studies evaluated trifarotene 50 µg/g cream across moderate-to-severe acne, scarring, and PIH.
- Phase III RCTs confirmed investigator's global assessment (IGA) and physician's global assessment (PGA) success over vehicle at Week 12; the 52-week extension showed sustained IGA 65.1% / PGA 66.9%, with quality of life (QoL) improvement (53.8% no impact vs. 22.6% at baseline).
- Phase IV data extended benefit to sequelae: atrophic scar reduction (−5.9 vs. −2.7; P<.0001) and post-acne hyperpigmentation index (PAHPI) improvement (−18.9% vs. −11.3%; P<.001).

Safety & Tolerability

- Local reactions (erythema, dryness, scaling, stinging/burning) peaked at Week 1–2 then declined.
- Facial tolerability: 16–36%; truncal: 9–23%. Over 52 weeks, 48.1% had treatment-related AEs, but only 12.6% were cutaneous.
- No cardiovascular signals at supratherapeutic doses; no interaction with oral contraceptives.

CONCLUSION:

- **Trifarotene offers the highest RARγ selectivity (~65-fold over RARα) of any approved topical retinoid.**
- **Clinical studies showed consistent efficacy for facial/truncal acne, scarring, and PIH.**
- **Pre-clinical gene-expression data further support its role in acne sequelae, establishing trifarotene as a mechanistically distinct, evidence-based option in acne management.**

14. Five decades of topical retinoid evolution in acne: mechanisms, generations, and clinical advances

Stein Gold L, Baldwin H, et al.

BACKGROUND:

- Topical retinoids have been central to acne treatment for over 50 years since tretinoin's approval in 1971.
- Progressive advances in receptor pharmacology, molecular biology, and formulation science have yielded four distinct retinoid generations with improved selectivity and tolerability profiles.

OBJECTIVES:

- To review retinoid milestones across four generations, focusing on receptor selectivity, mechanisms of action in acne pathogenesis, and clinical evidence including management of sequelae such as atrophic scarring and post-inflammatory hyperpigmentation (PIH).

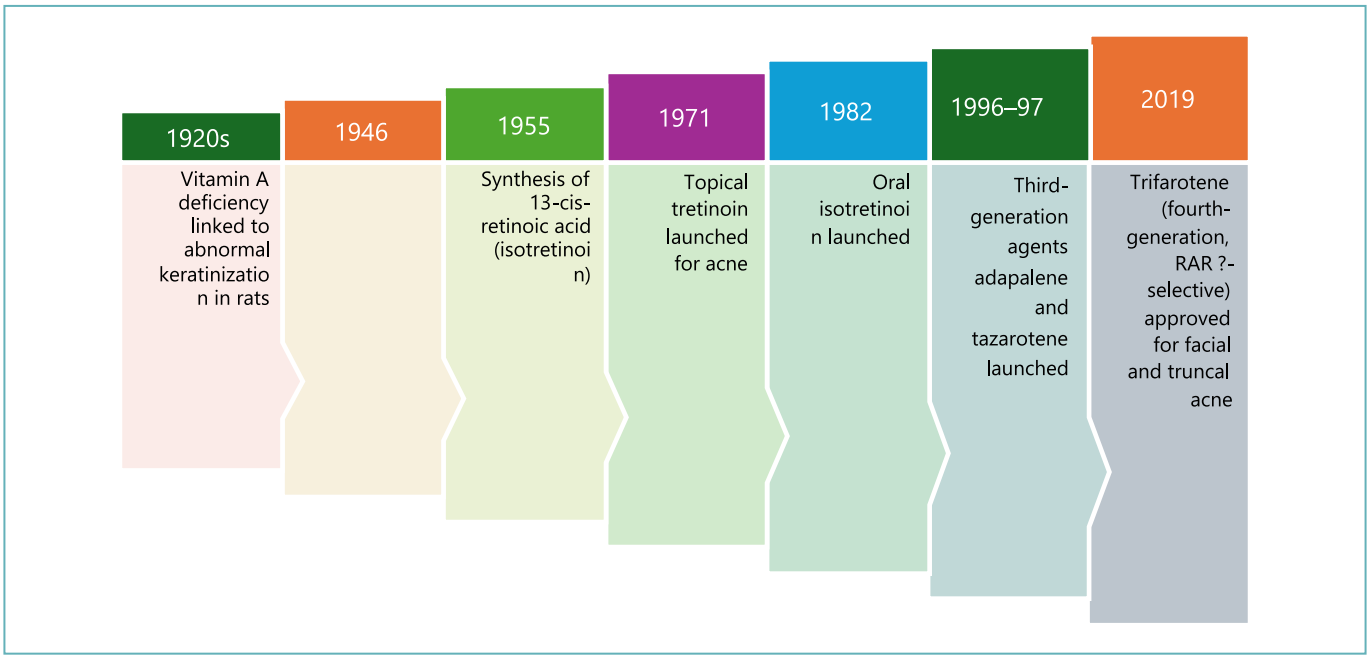
METHODS:

- Structured peer-reviewed literature search covering retinoid development, receptor biology, mechanisms of action, clinical efficacy, tolerability, and therapeutic role in acne and its sequelae.

RESULTS:

- Retinoid development timeline has been shown in Figure 4 below.

Figure 4: Key milestones in Retinoid development



- Four generations of Retinoids are compared in Table 10.

Generation	Structure	Receptor selectivity	Key agents	Indications
First	Natural vitamin A derivatives	Nonselective RAR/RXR	Tretinoin, isotretinoin, retinol	Acne, photoaging, psoriasis
Second (oral)	Synthetic monoaromatic	Nonselective RAR/RXR	Acitretin, etretinate	Psoriasis, ichthyosis
Third	Synthetic polyaromatic	Selective RARβ/γ	Adapalene, tazarotene	Acne, psoriasis, photoaging
Fourth	Pyranone derivatives	Exclusive RARγ agonism	Trifarotene	Facial and truncal acne

Table 10: Four generations of retinoids

- Retinoids through their combined actions interrupt the inflammatory cascade leading to dermal matrix degradation, acne scarring, and PIH (Figure 5).

Figure 5: Retinoid mechanisms in acne inflammation

- **TLR modulation:** Retinoids reduce TLR2/4 activity and suppress inflammasome activation triggered by C. acnes
- **Cytokine suppression:** Downregulate key proinflammatory cytokines (TNFk, IL-1β, IL-8, IL-10) via AP-1 and NF-kB inhibition
- **AP-1 inhibition:** Adapalene demonstrates potent AP-1 inhibition vs retinoic acid; dose-dependent effect shown across agents
- **MMP & AMP reduction:** Decreased neutrophil chemotaxis, reduced MMPs, and lowered antimicrobial peptide expression limit tissue destruction

Toll-Like Receptor (TLR),Tumour Necrosis Factor-alpha (TNFα), Interleukin-1 beta (IL-1β), Interleukin-8 (IL-8), and Interleukin-10 (IL-10), Activator Protein-1 (AP-1), Nuclear Factor kappa B (NF-κB), Matrix Metalloproteinases (MMPs), Antimicrobial Peptide (AMP)

- Topical retinoids consistently outperformed vehicle in managing acne sequelae across five trials.
- Tretinoin reduced post-inflammatory hyperpigmentation (PIH) more effectively at 40 weeks (92% vs 57%, $P<0.001$).
- Adapalene 0.3% plus benzoyl peroxide 2.5% reduced atrophic scar count by 15.5% versus a 14.4% increase with vehicle at 24 weeks ($P<0.005$).
- Tazarotene 0.1% improved pigmentation outcomes in darker skin types at 18 weeks (all $P<0.05$).
- Trifarotene reduced atrophic scars by 55.2% vs 29.9% at 24 weeks ($P<0.0001$) and improved the Post-Acne Hyperpigmentation Index (PAHPI) score by 18.9% vs 11.3% at 24 weeks ($P<0.001$).

CONCLUSION:

- **Four generations of topical retinoids-from nonselective tretinoin to the Retinoic Acid Receptor-gamma (RARγ)-exclusive trifarotene-reflect 50+ years of refinement in selectivity, tolerability, and indications.**
- **Clinical evidence confirms their role beyond lesion clearance, encompassing atrophic scarring and post-inflammatory hyperpigmentation (PIH) management across diverse skin types.**

15. Long-term clascoterone cream 1% reduces facial sebum and improves acne severity over 52 weeks

Draelos ZD, Weiner S, et al.

BACKGROUND:

- Androgen-driven sebum overproduction is central to acne pathogenesis.
- Clascoterone cream 1%, a topical androgen receptor inhibitor approved for acne in patients ≥12 years, inhibits sebum biosynthesis in vitro, though its in vivo mechanism remains unconfirmed.

OBJECTIVES:

- To assess changes in sebum production, acne severity, and tolerability over 52 weeks of clascoterone cream 1% treatment in mild-to-moderate acne vulgaris.

METHODS:

- This single-site, open-label study enrolled patients ≥12 years with mild-to-moderate acne (10–100 non-inflammatory; 10–50 inflammatory lesions; ≤2 nodules; no cysts).
- Clascoterone cream 1% was applied twice daily to the full face.
- Primary endpoint: change from baseline in forehead sebum (sebumeter, 0–350 $\mu g/cm^2$).
- Secondary endpoints: Investigator's Global Assessment (IGA) score, inflammatory lesion count (ILC), noninflammatory lesion count (NILC), and facial characteristics (oiliness, pore size, shine).
- Tolerability was assessed by investigators (peeling, dryness, redness, swelling) and patients (stinging, burning, itching) on a 0–4 scale.

RESULTS:

- Of 40 enrolled patients (mean age 20.9 years; 60% female), 39 completed the study. Baseline IGA: 57.5% mild, 42.5% moderate; mean sebum 115.9 ± 50.5 μg/cm^2.
- All efficacy endpoints reached statistical significance at every timepoint (P <0.001).
- Sebum level (μg/cm^2) reduction from baseline to week 52= −47% (115.9 □ 61.5 μg/cm^2)
- Inflammatory lesions reduced by −73% (16.8 →~4.5 count)
- Non-inflammatory lesions reduced by −61% (22.1 →~8.6 count)
- IGA scores improved by 55% from baseline to Week 52 (P <0.001).
- All facial characteristics — oily appearance (−79%), facial shine (−78%), and pore size (−46%) — showed progressive and significant improvements throughout the study.
- Tolerability scores (peeling, dryness, redness, swelling; stinging, burning, itching) remained at or near zero throughout.

CONCLUSION:

❖ **Clascoterone cream 1% applied twice daily for 52 weeks produced significant, progressive reductions in sebum production, lesion counts, and IGA scores with an excellent tolerability profile, reinforcing its role as an effective long-term topical therapy for acne vulgaris.**

16. 2-Mercaptonicotinyl Glycine (2-MNG) Serum for Acne-Induced Post-Inflammatory Hyperpigmentation: A Randomized Placebo-Controlled Trial

Kovylkina N, Sachdev M, Deloche-Bensmaine C, Chagnoleau C,et al.

BACKGROUND:

- Acne-induced post-inflammatory hyperpigmentation (AI-PIH) is a prevalent acne sequela in Fitzpatrick phototypes IV–VI.
- A dermocosmetic (DC) serum combining Vitamin B3 and 2-Mercaptonicotinyl Glycine (2-MNG), developed for melasma, was evaluated for AI-PIH.

OBJECTIVES:

- To evaluate clinical and instrumental efficacy of 2-MNG DC serum vs. placebo in AI-PIH (Fitzpatrick IV–VI).

METHODS:

- Randomized, double-blind, placebo-controlled trial (N=112 females; phototypes IV–VI; mild-to-moderate AI-PIH per post-acne hyperpigmentation index (PAHPI)).
- 2-MNG serum (Group A, n=55) or placebo (Group B, n=50) applied twice daily for 3 months, with concomitant SPF 50 sunscreen.
- Assessments at baseline, Month 1, 2, and 3 included: PAHPI, investigator global assessment (IGA), instrumental skin color (L* value skin luminance, lesion pigmentation, spot contrast, lesion density), hydration, transepidermal water loss (TEWL), and 3D texture/redness analysis.

RESULTS:

- 105 subjects completed the study. 2-MNG serum produced significant ($p<0.001$) improvements across all endpoints vs. placebo (Table 11):

Table 11: Efficacy Outcomes — 2-MNG Serum vs. Placebo Over 3 Months

Parameter	Baseline	Month 1	Month 2	Month 3
PAHPI — 2-MNG (n=55)	12.1	10.7 (↓ 11.7%)*	**7.8 (↓ 36.0%)****	**6.8 (↓ 43.5%)****
PAHPI — Placebo (n=50)	12.0	11.2	10.3	9.8
IGA — 2-MNG	2.7	2.1 (↓ 19.7%)*	**1.2 (↓ 55.1%)****	**1.1 (↓ 59.9%)****
IGA — Placebo	2.7	2.5	2.2	2.0
Spot Contrast — 2-MNG	3.7	3.1 (↓ 16.2%)*	**2.5 (↓ 32.4%)***	**1.8 (↓ 51.4%)***
Spot Contrast — Placebo	3.5	3.3	3.1	2.8
Pigmentary Lesion Density — 2-MNG	3.6	3.0 (↓ 15.3%)*	**2.2 (↓ 37.8%)***	**1.7 (↓ 51.5%)***
Pigmentary Lesion Density — Placebo	3.4	3.2	2.8	2.8
Lesion Pigmentation — 2-MNG	56.4	55.7*	**55.1***	**54.4***
Lesion Pigmentation — Placebo	64.1	63.7	63.3	62.9
Forehead L* Value — 2-MNG	46.3	46.9*	**47.5***	**48.2* (+96%)**
Forehead L* Value — Placebo	45.9	46.1	46.5	46.8

* $p \leq 0.01$; ** $p \leq 0.001$ vs. placebo. Darker shading = greater improvement. PAHPI = post-acne hyperpigmentation index; IGA = investigator global assessment; L* = skin luminance (higher = lighter). Percent reductions calculated from baseline within Group A.

- PAHPI: 1.82× superior to placebo at Month 1; >2× at Months 2–3.
- IGA: reduced 19.7% →59.9% (Months 1–3); >2× placebo from Month 2.
- Skin tone improvement exceeded placebo by >100% at all timepoints ($p<0.001$).
- Forehead L* value improved by 96% at Month 3.

CONCLUSION:

❖ **2-MNG DC serum significantly reduced AI-PIH vs. placebo from Month 1, with sustained benefit through Month 3 across all clinical and instrumental parameters, supporting its use in darker phototypes.**

17. Topical Insulin as a Microneedling Adjuvant for Post-Acne Atrophic Scars: A Systematic Review and Meta-Analysis

Garza-Dueñas GG, Figueirôa Valente L, Martani D, et al.

BACKGROUND:

- Microneedling promotes dermal remodeling via controlled micro-injuries and is effective for post-acne scarring.
- Topical insulin has emerged as a candidate adjuvant, acting through phosphatidylinositol 3-kinase/protein kinase B (PI3K/Akt) pathway activation to upregulate growth factors, stimulate angiogenesis, and enhance type III collagen synthesis. Its clinical benefit, however, remains uncertain.

OBJECTIVES:

- To compare the efficacy of microneedling plus topical insulin versus microneedling with other adjuvants in post-acne atrophic scars.

METHODS:

- PubMed, Embase, Cochrane, and Scopus were searched for relevant comparative studies.

RESULTS:

- Seven studies (255 patients; 215 [84.3%] in the insulin arm) were included.
- Protocols involved 3–6 sessions at ≥3-week intervals with ≥1 month follow-up.
- Comparators included platelet-rich plasma (PRP), vitamin C, hyaluronic acid, and microneedling alone.
- Pooled analysis showed no statistically significant difference favoring insulin (Mean difference (MD) 11.45%; 95% CI −2.08 to 24.98; $p = 0.10$), with high heterogeneity ($I^2 = 91.3\%$).

CONCLUSION:

❖ **Topical insulin did not demonstrate significant superiority over other adjuvants when combined with microneedling for post-acne atrophic scars.**

18. Systemic Inflammatory Marker Changes with Oral Isotretinoin in Acne: A Systematic Review and Meta-Analysis

Campos de Oliveira C, Ximenes Mendes B, Munoz Melhado L, et al.

BACKGROUND:

- Acne vulgaris is a chronic inflammatory disorder driven by follicular obstruction, bacterial overgrowth, and immune dysregulation.
- While oral isotretinoin is the gold standard for moderate-to-severe acne, its systemic immunomodulatory effects on hematological indices remain poorly defined.

OBJECTIVES:

- To quantify the effect of oral isotretinoin on systemic inflammatory blood markers in acne patients.

METHODS:

- PubMed, Embase, and Cochrane Library were searched. Outcomes were reported as Mean difference (MD) with 95% CI.

RESULTS:

- Fourteen studies (3,059 patients; 71.7% female) were analyzed.
- Isotretinoin significantly reduced Neutrophil/lymphocyte ratio (NLR) (MD −0.20; 95% CI −0.32 to −0.08; p < 0.01), Lymphocyte/monocyte ratio (LMR) (MD −0.05; 95% CI −0.05 to −0.05; p = 0), and Systemic inflammatory index (SII) (MD −43.51; 95% CI −65.31 to −21.72; p < 0.01), while Monocyte/HDL-c ratio (MHR) significantly increased (MD +0.74; 95% CI 0.13 to 1.36; p = 0.02).
- Monocyte/lymphocyte ratio (MLR), mean platelet volume (MPV), plateletcrit, platelet count, platelet/lymphocyte ratio (PLR), red cell distribution width (RDW), or systemic inflammation response index (SIRI) showed no significant change.

CONCLUSION:

- **Oral isotretinoin selectively modulates systemic inflammatory indices, reducing NLR, LMR, and SII while elevating MHR, indicating a measurable immunomodulatory effect.**

19. Post Hoc Analysis of CAB Gel (Clindamycin 1.2%/Adapalene 0.15%/ Benzoyl Peroxide 3.1%) on Acne and Skin Oiliness Outcomes Across 12- and 24-Week Studies

Draelos ZD, Tanghetti EA, et al.

BACKGROUND:

- Sebum overproduction is a key contributor to acne pathogenesis and a common patient concern.
- Clindamycin phosphate 1.2%/adapalene 0.15%/benzoyl peroxide 3.1% (CAB; Cabtreo®) is the only FDA-approved triple-combination topical acne gel, with proven efficacy and safety across short- and long-term studies.

OBJECTIVES:

- To compare the efficacy of microneedling plus topical insulin versus microneedling with other adjuvants in post-acne atrophic scars.

METHODS:

- Post hoc analysis of pooled data from 4 randomized, double-blind 12-week trials (N=1,115; oily skin subgroup: N=451) and two open-label 24-week studies (N=50; oily skin subgroup: N=18).
- Oily skin was defined as an on Acne Quality of Life (Acne-QoL) item #19 score of 0–2 at baseline. Endpoints included: oiliness shift to 'moderately' or 'low/not' oily (score 3–6), treatment success (≥2-grade Evaluator's Global Severity Score/ IGA, Investigator's Global Assessment (EGSS/IGA) reduction + clear/almost clear), inflammatory (IL) and noninflammatory lesion (NIL) counts, and safety/tolerability.

RESULTS:

- All key efficacy and safety outcomes are summarized in Table 12.

Table 12: Efficacy and Safety Outcomes — Oily Skin Subgroup

Outcome	CAB — 12 wk (n=143–244)	Vehicle — 12 wk (n=113–207)	CAB — 24 wk (N=18)
Oiliness shift to 'moderately' or 'low/not' oily	67.8%	63.7%	88.9%
Treatment success (≥2-grade EGSS/IGA reduction + clear/almost clear)	50.8%***	18.3%	66.7%
Inflammatory lesion reduction	−77.0%***	−53.2%	−87.1%
Noninflammatory lesion reduction	−72.8%***	−47.9%	−67.5%
Mean tolerability score (1 = mild)	≤0.6	—	<0.45
Discontinuation due to AEs	<3%	<3%	—

CAB, clindamycin phosphate 1.2%/adapalene 0.15%/ benzoyl peroxide 3.1%; EGSS, Evaluator's Global Severity Score; IGA, Investigator's Global Assessment; AE, adverse events.

CONCLUSION:

- **CAB gel was efficacious and well-tolerated in acne patients with oily skin, with treatment success rates of 51% and 67% at 12 and 24 weeks, respectively.**
- **Oiliness perception improved in 68% and 89% of participants at these timepoints.**
- **The pH-balanced, aqueous polymeric gel formulation may independently reduce oiliness perception, further supporting CAB as a holistic option for oily, acne-prone skin.**

20. Adjunctive Ceramide Skincare Improves Barrier Function and Tolerability During Isotretinoin Therapy: A Randomized Controlled Study

Callender V, Gonzalez C, Kulthanan K, et al.

BACKGROUND:

- Acne is associated with reduced ceramides and skin barrier dysfunction (elevated (TEWL)).
- Isotretinoin - the standard of care for severe/treatment-resistant acne - commonly causes dryness, tightness, and scaling that lead to discontinuation.
- Ceramide-containing skincare can reinforce the barrier and mitigate these side effects.

OBJECTIVES:

- To compare a ceramide-containing vs. control skincare regimen on barrier function, hydration, and tolerability in isotretinoin-treated acne patients.

METHODS:

- RCT; N=126 (age 13–35 yr; moderate/severe acne; isotretinoin-naïve; Brazil).
- All received isotretinoin 0.5 mg/kg/day and were randomized to ceramide regimen (n=51; cleanser + sunscreen + face cream with three skin-identical ceramides, multivesicular emulsion) or control regimen (n=54; glycerin-based cleanser + sunscreen + face cream).
- Demographics: 51 Females/54 Males; Fitzpatrick I–II (n=25), III–IV (n=74), V–VI (n=6).
- Outcomes assessed at baseline, W4, W8, W12: subjective tolerance (dryness, scaling, tightness; 5-point scale), objective dryness, TEWL, hydration (AU), and confocal microscopy (interkeratinocyte brightness).

RESULTS:

- The ceramide regimen was superior across all barrier and tolerability outcomes (Table 13), with the greatest between-group differences observed at W4 - when isotretinoin side effects typically peak.

Table 13: Outcomes - Ceramide-Containing vs. Control Regimen

Parameter	Baseline	W4	W8	W12	Key Differencevs Control
TEWL ($g/m^2/h$) Ceramide/ Control	19.77 / 19.51	19.87 / 22.29	18.41 / 22.88	17.86 / 22.31	**↓ 11% at W4; ↓ 21% at W8; ↓ 22% at W12 (all p<.05)**
Hydration(AU) Ceramide/ Control	62.07 / 61.11	67.13 / 58.69	69.10 / 58.33	68.04 / 61.24	**↑ 13% at W4; ↑ 16% at W8 (p<.01)**
Scaling— Subjective Ceramide/ Control	0.18 / 0.20	0.96 / 1.52	0.62 / 1.13	0.71 / 0.65	**↓ 45% at W4; ↓ 56% at W8 (p<.01)**
Tightness— SubjectiveCeramide/ Control	0.04 / 0.04	0.49 / 1.41	0.31 / 0.85	0.31 / 0.80	**↓ 96% at W4; ↓ 93% at W8; ↓ 88% at W12 (all p<.01)**
Dryness— Objective Ceramide/ Control	0.14 / 0.15	1.45 / 1.87	1.41 / 1.56	1.06 / 1.52	**↓ 35% at W12 (p<.05)**
Interkeratinocyte Brightness(Confocal Microscopy)	—	—	—	—	**↑ 20.5% mean change at W12 (p=.038) vs control**

TEWL = transepidermal water loss (lower = better barrier); Hydration (AU) = arbitrary units (higher = better); Scaling/Tightness/ Dryness scored 0–4 (lower = better). % differences calculated vs. control at each timepoint. Green = statistically significant superiority.

CONCLUSION:

- **Adjunctive ceramide skincare significantly outperformed control in isotretinoin-treated patients: tightness ↓88–96%, scaling ↓45–56%, dryness ↓35%, hydration ↑13–16%, TEWL ↓11–22%.**
- **These benefits support its use to improve treatment adherence by reducing barrier-related side effects.**

21. Isotretinoin Aftercare: A Practitioner Survey on Post-Treatment Acne Management

Zarabian N, Farah M, et al.

BACKGROUND:

- Acne vulgaris affects ~50 million Americans annually.
- Post-isotretinoin relapse occurs in 10–60% of patients, yet no standardized post-treatment management guidelines exist for post-isotretinoin acne management (PIAM).

OBJECTIVES:

- To characterize dermatology practitioners' real-world approaches to PIAM, including maintenance therapy, follow-up, and relapse management.

METHODS:

- Data were collected via SurveyMonkey; the first 200 respondents received gift card incentives. Descriptive statistics were applied.

RESULTS:

Respondent Demographics (N = 410)

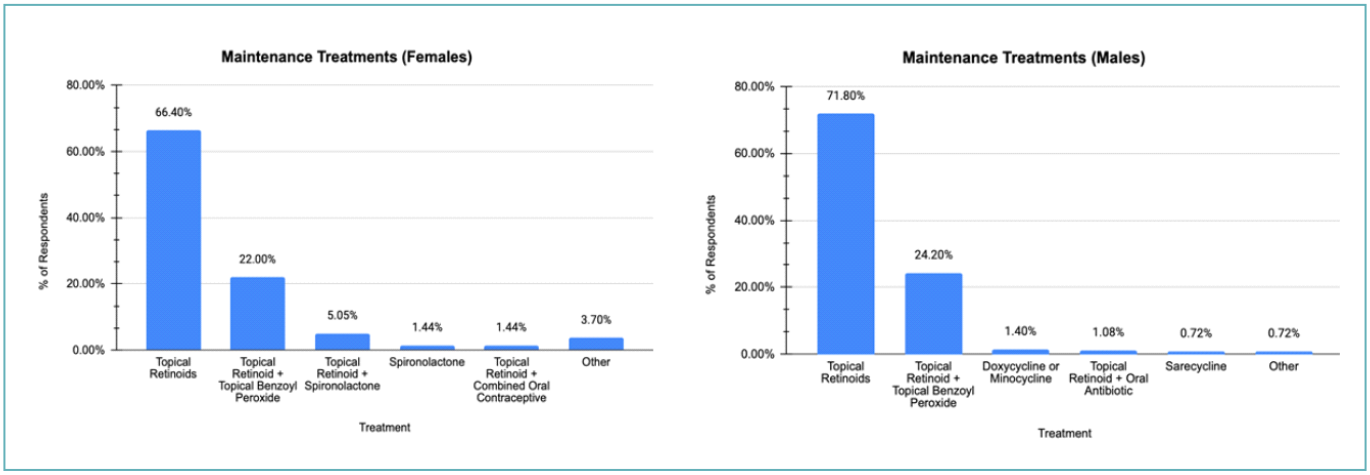
- Board-certified Dermatologist (47.4%), Resident (29.5%), Physician Assistant (17.4%), Fellowship (0.25%)
- Private group practice (40.1%), academic/university (36.4%), private solo practice (14.4%), and community hospital (6.1%).

Isotretinoin Dosing Targets

- Target cumulative dose: 150–200 mg/kg (44.2%) or 120–150 mg/kg (37.1%); 53.9% recommended cessation ~3 months post-clearance.

Maintenance Therapy Utilization Patterns have been shown in Figure 6.

Figure 6: Maintenance Treatment (MT) in males and females



Post-Treatment Follow-Up: 75.2% scheduled routine follow-up (1 mo: 38.4%; 2 mo: 29.5%; 6 mo: 22.2%); 61.1% advised ongoing surveillance — biannually (57.3%) or annually (19.7%).

Relapse Risk Factors and Management

- Top relapse predictors: severe acne at baseline (25.5%), inadequate cumulative dose (21.6%), and treatment duration <2 months post-clearance (14.0%).
- Topical retinoids + BPO were first-line for mild–moderate relapse; spironolactone was added in females (53.1%) and doxycycline/minocycline in males (61.0%) for moderate cases.
- >75% would prescribe a second isotretinoin course for severe relapse, with 60.2% using identical dosing endpoints.

CONCLUSION:

- **This is the first survey to quantify PIAM utilization. Many dermatologists forgo routine MT despite high relapse rates.**
- **Topical retinoids + BPO are the most evidence-aligned regimen, yet optimal timing and duration remain undefined.**

22. Real-World Doxycycline Dosing Patterns and Acne Treatment Pathways: A Multi-Center EHR Cohort Study (2010–2022)

Smith CA, Murdock A, et al.

BACKGROUND:

- Doxycycline is the most prescribed oral antibiotic for moderate-to-severe acne.
- Sub-antimicrobial dosing (≤40 mg/day) offers comparable efficacy with fewer adverse effects and promotes antibiotic stewardship, yet real-world prescribing data remain scarce.

OBJECTIVES:

- To characterize real-world doxycycline dosing distributions and downstream acne treatment pathways using multi-center electronic health Record (HER) data.

METHODS:

- Retrospective cohort study of EHR data
- Included: patients aged ≥9 years with ICD-9/10 acne codes and ≥1 oral doxycycline prescription lasting ≥7 days (analytic cohort: N=5,197).
- Doses were classified as sub-antimicrobial (≤40 mg/day), low (50–99 mg/day), or standard (≥100 mg/day).
- Secondary outcomes: subsequent acne treatment within 1 year and dose category changes among doxycycline continuers.

RESULTS:

- Cohort characteristics: median age 29 years (interquartile range, IQR 21–40), 68.8% female, 62.2% seen by a dermatologist.
- Median doxycycline duration was 30 days (IQR 14–30). All dosing, pathway, and dose-change data are presented in Table 1.

Table 14: Doxycycline Dosing, Treatment Pathways, and Dose Changes (N=5,197)

Parameter	Detail	n	%
Sub-antimicrobial dose (≤40 mg/day)	40 mg ER od / 20 mg BID	87	1.7%
Low dose (50–99 mg/day)	50 mg od / BID	304	5.8%
Standard dose (≥100 mg/day)	100 mg od / BID	4,806	92.5%
Topical-only (n=3,153 with follow-up)	Most common transition	1,680	53.3%
Continued doxycycline		779	24.7%
Other oral antibiotic		471	14.9%

Isotretinoin / Spironolactone		113 / 110	3.6% / 3.5%
No follow-up Rx / lost	Of total cohort	2,044	39.3%
Dose unchanged among continuers (n=778)		730	93.8%
Dose increase / decrease		25 / 23	3.2% / 3.0%

- Sub-antimicrobial doxycycline was prescribed to only 1.7% of patients despite evidence supporting equivalent efficacy and a superior safety profile.
- Dose de-escalation among continuers was rare (<4%), reflecting a missed stewardship opportunity. Potential misclassification of doxycycline for non-acne indications is a key limitation.

CONCLUSION:

- **Sub-antimicrobial doxycycline is markedly underutilized in acne.**
- **Clinicians should integrate it into treatment protocols, advocate for insurance coverage, and reassess dosing at follow-up.**

23. Sarecycline for Moderate-to-Severe Facial Acne Vulgaris: Pooled Efficacy Data from Three Phase 3 Trials

Del Rosso J, Zhang J, et al.

BACKGROUND:

- Sarecycline is a narrow-spectrum oral tetracycline-class antibiotic approved for inflammatory lesions of moderate-to-severe acne vulgaris (AV).
- Three Phase 3 trials have independently evaluated its efficacy; however, a pooled analysis offers greater statistical power and broader characterization across disease severities.

OBJECTIVES:

- To evaluate the onset of action, Investigators' Global Assessment [IGA] success rate, and inflammatory lesion (IL) reduction with sarecycline versus placebo

METHODS:

- Three 12-week, randomized, double-blind, placebo-controlled Phase 3 trials in patients aged 9–45 years; N= 2,393 (sarecycline n=1,264; placebo n=1,129)
- Randomization: 1:1 (sarecycline:placebo) in 2 trials; 2:1 in 1 trial
- Treatment: Sarecycline 1.5 mg/kg/day or placebo (once daily, oral)
- Moderate acne at baseline (IGA 3); n=1,062 sarecycline / n=950 placebo
- Severe acne at baseline (IGA 4); n=202 sarecycline / n=179 placebo
- Key endpoints: IGA success (score 0–1 with ≥2-grade reduction from baseline), percent IL reduction, and absolute noninflammatory lesion (NIL) reduction.

RESULTS:

- Sarecycline significantly outperformed placebo across all endpoints. Full efficacy data are presented in Table 15.

Table 15: Efficacy Outcomes — Sarecycline vs Placebo

Endpoint	Sarecycline	Placebo	P-value
IGA success (clear/almost clear) at Week 12	25.9% (n=1,264)	13.3% (n=1,129)	<0.0001
IL reduction at Week 3 (first post-baseline)	−30.5%	−22.4%	0.0001
IL reduction at Week 12	−58.5%	−41.2%	<0.0001
NIL reduction at Week 12	−40.4%	−29.2%	<0.01
IL reduction at Wk 12 — Moderate (IGA 3)	−56.0%	−39.5%	<0.0001
IL reduction at Wk 12 — Severe (IGA 4)	−53.6%	−36.8%	<0.0001

IL, inflammatory lesion; IGA, Investigator's Global Assessment; NIL, noninflammatory lesion. LS mean changes from MMRM analysis.

CONCLUSION:

- **Pooled Phase 3 data confirm that sarecycline 1.5 mg/kg/day significantly improves IGA scores and reduces inflammatory lesions in moderate-to-severe facial AV.**
- **Onset of effect is detectable as early as Week 3 and is sustained through Week 12, with consistent efficacy regardless of baseline severity.**

Dermatitis, Atopic

1. Updated AAD Clinical Practice Guidelines: Systemic Therapies for Adult Atopic Dermatitis

Hawryluk EB, et al.

BACKGROUND:

- The rapid emergence of new clinical data for targeted systemic therapies necessitated an interim update to the 2023 and 2025 American Academy of Dermatology (AAD) guidelines for managing adult atopic dermatitis (AD).
- This update focuses on integrating recent evidence for biologics and Janus kinase inhibitors (JAKis).

OBJECTIVES:

- To provide updated, evidence-based clinical guidance on the efficacy and safety of seven FDA-approved systemic JAKis and biologics for adults with moderate-to-severe AD.

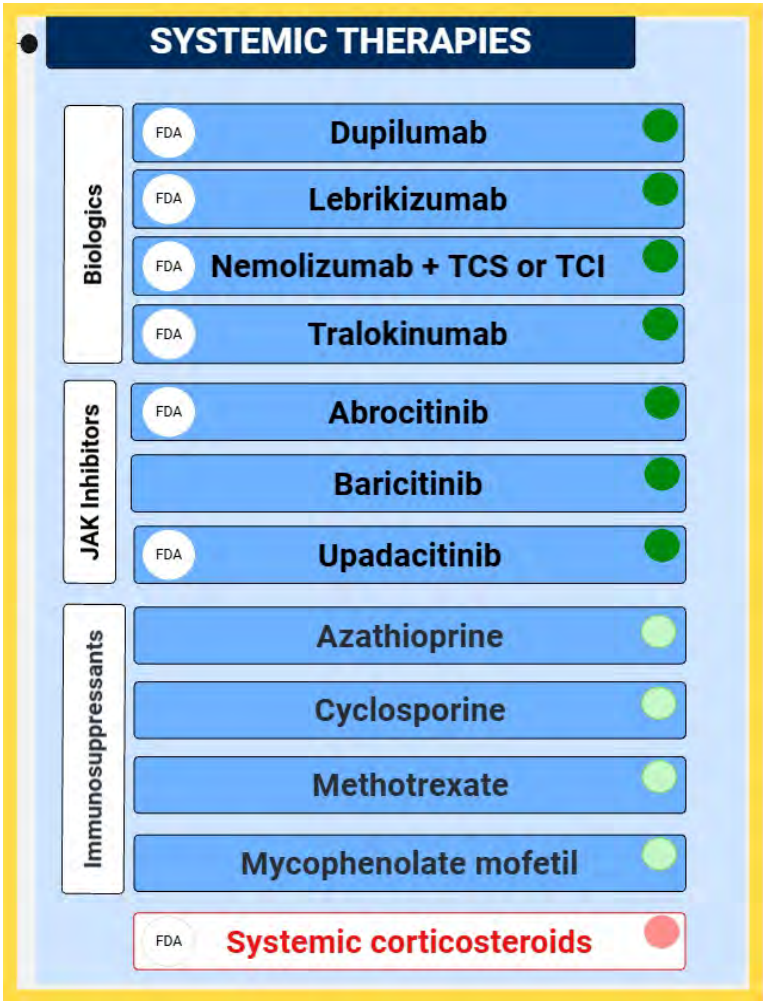
METHODS:

- An expert workgroup performed a systematic review of MEDLINE, CENTRAL, and Cochrane databases.
- The GRADE approach was used to evaluate the certainty of evidence and formulate recommendations as either "strong" or "conditional".

RESULTS:

- The search identified four new clinical trials. All seven evaluated systemic agents maintained strong recommendations in favor of their use as shown in Figure 7.

Figure 7: Evidence Certainty and Recommendation Strength



Key

- Strong recommendation in favor of the intervention
- Conditional recommendation in favor of the intervention
- Strong recommendation against the intervention
- Conditional recommendation against the intervention
- FDA indicated for atopic dermatitis

CONCLUSION:

- **This update establishes seven strong, evidence-based recommendations for systemic AD treatment.**
- **These findings reflect the evolving therapeutic landscape and are intended to optimize treatment selection and facilitate shared decision-making between clinicians and patients.**

2. Impact of Early Moisturizer Use on Pediatric Atopic Dermatitis Incidence: A Systematic Review and Meta-Analysis

Nguyen N, et al.

BACKGROUND:

- Prophylactic emollient use in infancy is a proposed strategy to prevent atopic dermatitis (AD), though recent randomized controlled trials (RCTs) have yielded conflicting results regarding its efficacy in high-risk groups.

OBJECTIVES:

- To evaluate whether initiating moisturizer use in early infancy reduces the incidence of AD in high-risk pediatric populations.

METHODS:

- Identified and analyzed 9 RCTs involving a total of 2,659 high-risk infants (first-degree relative with AD) where moisturizer was started within the first 9 weeks of life.
- Comparisons were made against placebo or standard care.
- Primary outcomes: AD incidence at 6, 6–12, and 24 months

RESULTS:

- Emollients were associated with a significant reduction in AD risk during the first year of life, but this benefit disappeared by the 24-month mark (Table 16).

Table 16: Statistical Efficacy of Emollient Prophylaxis

Outcome Period	Relative Risk (RR)	95% Confidence Interval (CI)	p-value	Heterogeneity (I^2)
6 Months	0.55	0.36–0.84	0.006	0%
6–12 Months	0.62	0.44–0.89	0.01	0%
24 Months	0.93	0.82–1.05	0.22	0%
Overall Pooled Analysis	0.82	0.71–0.95	0.009	15%

CONCLUSION:

- **Early emollient application provides short-term protection against AD in high-risk infants, but the effect does not persist through 24 months.**
- **These results suggest that early moisturizing may delay the onset of the disease rather than preventing it entirely.**

Pharmacology

1. Retinoid Prescription Patterns and Clinical Indications: A Colombian Cross-Sectional Study

Lesmes Cataño V, et al.

BACKGROUND:

- Retinoids are Vitamin A derivatives essential in dermatology for regulating cell growth and apoptosis.
- While used for various conditions, they are frequently prescribed for off-label purposes. Current data regarding the appropriateness of retinoid use within the Colombian healthcare system is insufficient.

OBJECTIVES:

- To evaluate the prescription profiles and clinical indications for retinoids among outpatients in Colombia during a three-month period in 2024.

METHODS:

- This cross-sectional study utilized a national database representing 9.2 million individuals. Researchers analyzed demographics, ICD-10 diagnoses, and medication data for patients prescribed retinoids.

RESULTS:

- A total of 6,912 patients were identified. The population was primarily female (71.0%) with a mean age of 37.5 ± 18.5 years. Prescription and Prescriber Distribution is shown in Table 17.

Table 17: Retinoid Prescription and Prescriber Distribution in Colombia

Variable	Frequency (n)	Percentage (%)
Formulation Type		
Topical Formulations	6,057	87.6%
Oral Formulations (Isotretinoin)	853	12.4%
Topical Agent		
Tretinoin Cream	3,007	43.5%
Prescriber Type		
General Practitioners	6,271	90.7%
Dermatologists	495	7.2%

Indication Appropriateness:

- Approved Indications: 14.1%
- Unapproved (Off-label) Indications: 85.9%

Additionally, 51.7% of patients were taking concomitant medications for other conditions, most notably analgesics and antihypertensives.

CONCLUSION:

- **The study reveals a significant reliance on retinoids for off-label indications (85.9%), with the vast majority of prescriptions originating from general practitioners rather than specialists.**
- **These findings suggest a critical need for enhanced medical education and robust pharmacovigilance to align clinical practice with evidence-based guidelines in Colombia.**

2. Impact of Omega-3 Fatty Acids on Dermatitis Risk During Isotretinoin Therapy

Olds H, et al.

BACKGROUND:

- Isotretinoin is a potent acne treatment but frequently leads to mucocutaneous adverse effects, including barrier dysfunction and eczematous dermatitis.
- Omega-3 fatty acids (EPA/DHA) may mitigate these effects by restoring epidermal lipids, enhancing barrier repair, and downregulating pro-inflammatory cytokines like IL-1, IL-6, and TNF-α.

OBJECTIVES:

- To investigate whether omega-3 supplementation reduces the risk of developing eczematous dermatitis in patients undergoing isotretinoin therapy.

METHODS:

- In this prospective cohort study conducted at Wayne Health Dermatology, patients receiving isotretinoin completed surveys regarding therapy duration, eczema flares, and omega-3 use.
- Researchers analyzed the incidence of dermatitis.

RESULTS:

- Interim data from 12 patients showed that 33.3% of non-users (2 of 6) experienced eczematous dermatitis, compared to 0% of omega-3 users (0 of 6). This represents an absolute risk reduction of 33.3%.
- The corrected OR was 0.14 (95% CI: 0.005–3.63), though the small sample size resulted in a p-value of 0.455, which is not yet statistically significant.

CONCLUSION:

❖ **Preliminary findings indicate that omega-3 supplementation is associated with a lower observed incidence of isotretinoin-induced eczematous dermatitis.**

3. Dermatological Adverse Reactions and Therapeutic Potential of GLP-1 Agonists

Najmi M, et al.

BACKGROUND:

- Glucagon-like peptide-1 (GLP-1) receptor agonists are increasingly utilized for managing type 2 diabetes mellitus and obesity.
- While their gastrointestinal side effects are well-documented, their impact on the skin is less understood.

OBJECTIVES:

- To evaluate the spectrum of both adverse and therapeutic dermatological effects associated with GLP-1 receptor agonist therapy to improve clinical decision-making.

METHODS:

- A PubMed literature search was conducted for studies published through November 2025.
- Key search terms included GLP-1 agonists (e.g., semaglutide, tirzepatide) and dermatologic conditions (e.g., alopecia, rash, pruritus).

RESULTS:

- The review identified a variety of cutaneous responses. The most common adverse effects across the medication class are summarized in figure 8 below:

Figure 8: Common Cutaneous Adverse Effects of GLP-1 medications

Dermatologic condition	Adverse effects	Benefits
Hidradentis Suppurativa (HS)	-	Liraglutide: 60% reduction in lesion everity Semaglutide: dose-dependent improvement
Eczematous / Drug Eruptions	Eczematous dermatitis (28.5% of all cutaneous adverse effects,; drug eruptions (19.6%); pruritus (22.3%); hyperhidrosis (15.6%)	-
Psoriasis	Liraglutide associated with flare	Improvement with exenatide and semaglutide (reduced Psoriasis Area and severity Index scores, reduced Dermatology Life Quality Index scores)
Alopecia	Telogen effluvium: trizepatide 22.7%, semaglutide 13.3%, liraglutide 11.8%	↑ Hair density in androgenic alopecia; regrowth in reclacitrant folliculitis dealvans
Hypersensitivity reactions	Urticaria tirzeatide 14.9%, liraglutide 12.8%, semaglutide 7.7% Allergic reactions (semaglutide 8%) Injection site reactions: Exenatide commonly imlicated	-

CONCLUSION:

- **GLP-1 receptor agonists possess a dual dermatological nature, acting as both potential triggers for adverse reactions (such as eczematous eruptions and alopecia) and therapeutic agents for inflammatory skin diseases like HS and psoriasis.**
- **Clinicians should monitor for these effects to optimize patient care.**

ACNOTIN 10 20
Isotretinoin USP 10 mg/20 mg

ACNETREX 10 20
Isotretinoin CapsulesUSP 10mg/20mg

Rocimus
Tacrolimus ointment 0.03% w/w

STERCIA
Finasteride Tablets 1 mg

Rocimus
Tacrolimus ointment 0.1% w/w

MEGA We care