

ACNEOLOGY TODAY

ISSUE - 7

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Research Highlights

Advances in Acne Care:

Current Treatments and Future Directions

Acne is a multi-factorial, chronic inflammatory condition. Upto ~70% of teenagers/young people experience acne, but it also affects adults - underscoring its wide prevalence. Sebum overproduction - due to androgen receptor activation in sebaceous glands - is central to acne's pathogenesis. Acne has significant psychological and long-term burden. Beyond physical lesions, acne often leads to lowered self-esteem, anxiety/depression, and social stigma-especially among adolescents for whom appearance is important. ¹

Traditional treatments remain foundational - but have limitations & unmet needs

- Standard first-line therapies: topical agents (retinoids, benzoyl peroxide, combination creams), oral antibiotics, and oral retinoid Isotretinoin for more severe disease.
- For many patients, especially those with moderate disease or with flare-ups after therapy, the existing treatments may not sufficiently address all four pathogenic factors - leading to incomplete or recurrent control. ¹



Skin barrier, hydration & adjunctive care²

- Aquaxyl is a patented humectant complex (primarily sugars: xylitylglucoside, anhydroxylitol, and xylitol) that helps enhance the skin's natural hydration by optimizing water reserves, improving water circulation within the epidermis, and strengthening the skin-barrier lipid/protein structure.
- By boosting production of key barrier components such as ceramides, epidermal lipids, and natural moisturizing factors (e.g. hyaluronic acid) - Aquaxyl helps reduce transepidermal water loss (TEWL) and improve skin barrier integrity.
- For individuals with acne or undergoing acne treatments (which often disrupt skin hydration/barrier), Aquaxyl-containing moisturizers can support barrier repair, soothe dryness and irritation, and maintain hydration - without adding comedogenic oils, making them potentially suitable even for oily or acne-prone skin.
- In effect, Aquaxyl can serve as a supportive, adjunctive measure in acne management - not treating acne pathogens/sebum directly, but helping maintain skin health, reduce irritation from treatments (like topical retinoids/peels), and possibly prevent barrier-dysfunction-related flares.

Emerging therapies - targeting androgen signalling: a potential game-changer¹

Clascoterone (topical cream) 10 mg/g as a recently approved (UK) androgen-receptor inhibitor for acne (in patients ≥ 12 years). It represents the first topical androgen receptor inhibitor developed specifically to reduce sebum by blocking androgen action on sebocytes. Clascoterone binds androgen receptors in sebaceous glands, inhibiting downstream androgen-stimulated gene expression - thereby reducing sebum production early in the acne cascade.

Summary¹

Acne is not simply a superficial skin problem - it is a chronic, multi-mechanistic disease involving sebum overproduction, abnormal follicular keratinization, bacterial proliferation, and inflammation. Effective management thus requires a multimodal, patient-tailored approach rather than a "one-size-fits-all."



Aquaxyl™: Scientific Evidence and Its Role in Barrier Support for Acne Management³

Study / Source	Main Findings (relevant to skin barrier / hydration)
<p>Effect of a Simple Sugar-based Ingredient on Skin Moisturization: Biological Mode of Action and Clinical Effects (2023)</p>	<p>In vivo (25 female volunteers with dry skin): 3% XAX cream increased skin hydration (corneometry), improved microrelief, improved desquamation, and decreased transepidermal water loss (TEWL). Effects observed at 8 h, 15 days, and 30 days of use.</p>
<p>Effects of Locally Applied Glycerol and Xylitol on the Hydration, Barrier Function and Morphological Parameters of the Skin (2016 / 14-day human study)</p>	<p>Twice daily application of formulation containing glycerol + xylitol for 14 days on volunteers with dry skin → increased skin hydration; decreased TEWL; increased filaggrin content; improved biomechanical properties (elasticity, resilience). Suggests xylitol (a component of Aquaxyl) contributes to barrier enhancement and improved skin hydration/structure.</p>
<p>Historical mechanistic evidence: role of glycerol & hydrating agents in epidermal water/glycerol transport / barrier physiology</p>	<p>Animal model (AQP3-deficient mice) showed that glycerol replacement corrected defects in stratum corneum hydration, elasticity, and barrier recovery - underscoring importance of humectants (like glycerol / related polyols) in skin barrier physiology.</p>
<p>Industry / cosmetic-science data (ex vivo & clinical) on Aquaxyl formulations</p>	<p>According to data from the manufacturer and cosmetic-science reports: Aquaxyl improved water retention in upper skin layers, enhanced ceramide levels (lipid barrier components), improved desquamation, reduced water loss - supporting long-term barrier function and hydration in normal/dry skin</p>

Aquaxyl's demonstrated capacity to enhance hydration, restore barrier lipids / ceramides / glycosaminoglycans, improve desquamation and reduce TEWL makes it a rational adjunctive moisturizer to mitigate side-effects and improve tolerability of acne therapy. It may also help maintain the skin's natural moisturization and structural integrity - potentially reducing irritant-induced inflammation, dryness, scaling which otherwise can worsen acne or hamper compliance.

Conclusion_2025

- Aquaxyl is well-supported as an effective humectant / skin-hydration and barrier-support ingredient, with in vitro, ex vivo and in vivo data showing improved hydration, reduced TEWL, enhanced ceramide & glycosaminoglycan content, better desquamation and lipid-protein structural integrity.
- It holds promise as an adjunctive moisturizer in acne regimens - especially beneficial to counter dryness, irritation and barrier disruption from anti-acne actives.



Topical Peptides for Post-Acne Scar Revision - Expert Consensus (IDEAL 2025)⁴

Key Points:

- The consensus reflects input from Indian dermatology experts - tailored to skin types and patient expectations typical of Fitzpatrick III–V populations.
- According to the consensus, **topical peptides** (in creams/serums) are considered a valuable **adjunctive therapy** in acne-scar management - particularly for:
 - o **Maintenance and enhancement of dermal matrix remodeling** after in-office procedures (e.g. microneedling, subcision, laser)
 - o **Supportive skin nourishment and skin barrier restoration** during scar healing phases or for mild-to-moderate scars not warranting aggressive intervention
 - o **Improving overall skin quality and texture**, possibly contributing to scar appearance improvement over time
- Recommended usage: as **along-term, home-based regimen**, often in combination with sun-protection, gentle skin care and procedural therapies - not as a replacement for invasive scar treatments.
- Experts emphasise realistic expectations: topical treatments alone may not completely “erase” deep atrophic scars, but can **improve skin quality, pigmentation, surface irregularities and patient satisfaction**, especially when used consistently.

Clinical Implications & Suggested Post-Acne Care Protocol

Phase	Recommended Approach / Role of Peptides
Post-lesional / Scar-healing Phase	Use peptide-containing moisturizer/serum to support dermal repair, collagen/ECM synthesis, reduce inflammation, and improve skin nourishment.
Maintenance / Long-term Scar Management	Regular nightly/topical peptide application + gentle cleansing + broad-spectrum sunscreen to support ongoing skin regeneration, minimize scar worsening or new PIH.
Adjunct to Procedural Therapy (laser, microneedling, subcision)	Apply peptides during healing and maintenance to enhance outcomes, promote ECM remodeling, improve skin texture and reduce downtime/side-effects.
Mild / Early / Post-Acne-Resolution Skin Care	Use peptides to improve skin barrier, hydration, mitigate post-inflammatory changes (light atrophy, residual unevenness), and maintain skin health.

- The IDEAL 2025 expert consensus recognizes **topical peptides as a safe, practical and valuable adjunct** in post-acne scar management and skin nourishment - especially for light-to-moderate scars, maintenance after procedures, or long-term skin quality improvement.
- Peptide-based care is not a substitute for procedures, but - when integrated thoughtfully with procedural therapy, barrier care, sunprotection, and realistic expectations - it can significantly enhance overall scar outcomes, patient satisfaction, and skin health.
- For best results: adopt a **long-term, consistent regimen**, combined with a comprehensive scar-management plan tailored to individual skin type, scar severity and treatment history.



Case Challenge⁵



A 20-year-old man who comes to the doctors' clinic with acne complaints as he has sensitive skin. He complains of experiencing frequent breakouts but struggles with redness and irritation from every product he has tried, including multiple formulations of benzoyl peroxide. His skin becomes dry after every acne application.

Q. What treatment regimen do you recommend for him?

Ans. _____

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