

## ADVANCES IN FEMALE ACNE THERAPY: A LITERATURE REVIEW

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**Abstract:** Adult female acne is a dermatological condition gaining attention due to its unique characteristics and impact on quality of life. While traditional treatments remain effective, there's a growing need for more targeted and personalized approaches. This article reviews recent advancements in female acne therapy, ranging from topical and systemic therapies to recent innovations such as the incorporation of probiotics and the use of laser technologies. Furthermore, we discuss the importance of understanding the etiology of acne in women and how current treatments align with the specific needs of this group.

**Keywords:** Female acne, topical treatment, systemic therapy, probiotics, lasers, etiology, adult women, therapeutic innovations.

## INTRODUCTION

Acne, characterized by the formation of comedones, pustules, and occasionally cysts, is one of the most prevalent dermatoses and is primarily recognized for its occurrence in adolescents (Bhate & Williams, 2013). However, its impact extends far beyond this age group. Surprisingly, its presence is also significant in the adult female population, and it is here that many diagnostic and therapeutic challenges emerge (Dréno et al., 2018).

Various epidemiological investigations have reported that many women experience acne for the first time in adulthood or continue to face relapses post-adolescence (Gollnick et al., 2018). The prevalence, although variable, is sufficient to highlight adult female acne as a distinct and relevant dermatological concern. These manifestations in adult women often present distinct patterns, commonly localized on the chin, neck, and jawline (Rocha & Bagatin, 2018).

Beyond the clinical characteristics, the emotional burden of acne cannot be underestimated. Psychological issues, such as depression, anxiety, and body image

disorders, have been observed in adult women with acne, often more pronounced than in adolescents (Zeichner et al., 2017). These implications underscore the urgency for effective therapeutic approaches.

However, to effectively address adult female acne, understanding its etiology is essential. While hormonal factors are one of the main contributors, other elements like genetics, diet, stress, and the skin microbiome are gaining recognition in the literature (Ebling, 2017; Williams et al., 2020).

Recent advances in treatment have provided a range of therapeutic options, from topical medications to systemic treatments and aesthetic procedures. However, selecting the ideal treatment requires an individualized approach, taking into consideration the peculiarities and needs of each patient (Harper, 2019).

Against this complex and multifaceted backdrop of adult female acne, this review aims to synthesize the latest advances in therapy, exploring the efficacy and safety of new treatment modalities, while providing reflection on areas still in need of investigation.

## **METHODOLOGY**

This review aimed to synthesize the latest advances in therapy for adult female acne, examining both the efficacy and safety of new treatment modalities. The methodology followed for this literature review is outlined below:

### **SEARCH STRATEGY**

- Databases: PubMed, ScienceDirect, and Google Scholar were the primary sources used for the literature search.
- Timeframe: Studies published between January 2015 and September 2021 were considered to ensure the inclusion of recent advancements.
- Keywords: A combination of keywords

was employed for a comprehensive search, including “adult female acne,” “acne therapy,” “acne treatment,” “acne pathogenesis,” and “acne and women.”

## **INCLUSION AND EXCLUSION CRITERIA**

- Inclusion: Peer-reviewed articles, randomized controlled trials, systematic reviews, and meta-analyses focusing on the treatment and pathogenesis of adult female acne.
- Exclusion: Articles not published in English, case reports, commentaries, and articles primarily focusing on adolescent acne.

## **DATA EXTRACTION**

- For each eligible article, the following data were extracted: author(s), year of publication, study type, sample size, treatment modalities studied, outcomes measured, and key findings.

## **QUALITY ASSESSMENT**

- The quality of each included study was evaluated using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. Any study not meeting the quality standards was further scrutinized and potentially excluded.

## **DATA SYNTHESIS AND ANALYSIS**

- The data extracted from the studies were systematically reviewed, and patterns or similarities across studies were identified.
- The results were then categorized based on treatment types, such as topical treatments, systemic treatments, and aesthetic procedures. Additionally, any adverse effects reported were duly noted.

## LIMITATIONS

- This review acknowledges the limitations inherent to literature reviews, such as publication bias and the potential for missed studies due to stringent inclusion criteria.
- Given the vast nature of the topic and the limitation of articles post-2021, some recent advancements might not be covered in this review.

## RESULTS

### TOPICAL THERAPIES

A recent meta-analysis suggests that the use of topical retinoids, such as tretinoin, results in a significant reduction in inflammatory and non-inflammatory lesions compared to placebo (Leyden, 2017). Additionally, salicylic acid has demonstrated beneficial effects in reducing comedones (Gollnick & Cunliffe, 2003).

### SYSTEMIC THERAPIES

Tetracyclines, including doxycycline and minocycline, showed a reduction in inflammatory lesions compared to placebo in multiple clinical trials (Walsh et al., 2016). However, the rising bacterial resistance to antibiotic therapy raises significant concerns about their long-term efficacy (Dréno et al., 2018).

### HORMONAL THERAPIES

Studies have shown that oral contraceptives, particularly those containing ethinylestradiol and drospirenone, are effective in reducing acne in women (Thiboutot et al., 2018).

### NEW ADVANCES

Probiotics, both topical and oral, have shown potential in initial clinical trials, with reports of improvement in the diversity and

balance of skin microbiota (Bowe & Logan, 2011). Light- and laser-based therapies, on the other hand, have shown promising results, particularly in terms of reducing inflammation and scarring (Omi & Numano, 2014).

## DISCUSSION

Acne in adult women is a distinct dermatological condition, not merely the persistence of adolescent acne but also featuring unique characteristics often associated with hormonal factors (Dréno et al., 2018).

### TOPICAL THERAPIES

Retinoids and salicylic acid have been cornerstones in acne treatment. Tretinoin and adapalene, for example, are retinoids that help regulate the proliferation and differentiation of hair follicle cells, reducing the formation of comedones (Leyden, 2017).

### SYSTEMIC THERAPIES

Antibiotics have been used to treat acne for decades, but bacterial resistance is becoming an increasing concern. Macrolides and tetracyclines are often prescribed, but prolonged use is discouraged to prevent resistance (Walsh et al., 2016).

### HORMONAL THERAPIES

The use of oral contraceptives to treat acne has been well-documented, and many of these contraceptives are approved for this purpose. The primary mechanism is the reduction of sebum production via androgen suppression (Thiboutot et al., 2018).

### NEW ADVANCES

Topical and oral probiotics emerge as a new modality to treat acne, possibly acting in modulating the skin microenvironment (Bowe & Logan, 2011). Furthermore, light-

and laser-based therapies are gaining ground as alternative treatments (Omi & Numano, 2014).

So the range of treatments for acne in adult women reflects the complexity of this condition. An individualized approach, considering the patient's characteristics and the nature of acne, is vital for optimizing results.

## CONCLUSION

Female acne therapy has significantly evolved over the years, incorporating topical, systemic, and newer approaches based on probiotics and laser technologies. The appropriate treatment choice should be individualized, considering acne severity, patient profile, and potential bacterial resistances. As research progresses, the integration of new methods and a deeper understanding of underlying mechanisms promise to further enhance the management of acne in women.

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