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Meta-Analysis

Laser-based interventions for scarring alopecia: a meta-analytic review of clinical outcomes

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ABSTRACT

Scarring alopecias are a group of inflammatory disorders resulting in irreversible hair loss and significant psychosocial burden. Standard therapies often yield incomplete responses, prompting exploration of alternative treatments. Laser-based therapies, including low-level laser therapy (LLLT), superluminescent diode (sLED) therapy, long-pulsed Nd:YAG, and excimer lasers, have emerged as potential options. This meta-analysis aims to evaluate the clinical effectiveness of laser-based interventions in treating scarring alopecias. A systematic search of PubMed, Cochrane CENTRAL, and Scopus was conducted, following PRISMA guidelines. Studies included were non-randomized clinical studies reporting outcomes after laser-based interventions for scarring alopecias. Data extraction and risk of bias assessment (ROBINS-I) were performed independently by two reviewers. Due to heterogeneity, descriptive synthesis and qualitative forest plots were generated. Seven studies involving 51 patients were included. Conditions studied included lichen planopilaris (LPP), frontal fibrosing alopecia (FFA), dissecting cellulitis (DCS), folliculitis decalvans (FD), and acne keloidalis nuchae (AKN). Laser interventions were associated with clinical or trichoscopic improvement in all studies. Two studies reported complete or near-complete disease remission. No significant adverse events were reported. Risk of bias was serious or critical in all studies, primarily due to small sample sizes and lack of controls. Laser-based therapies demonstrate promising clinical benefits in scarring alopecias, particularly in disease stabilization and symptom improvement. However, due to the high risk of bias and methodological limitations, high-quality randomized controlled trials are needed to confirm these findings.

Keywords: Scarring alopecia, Laser therapy, Low-level laser therapy, Cicatricial alopecia, Meta-analysis

INTRODUCTION

Scarring alopecias, or cicatricial alopecias, are a group of disorders marked by permanent hair loss due to irreversible follicular destruction and fibrosis. Common forms include LPP, CCCA, and FFA, each with distinct clinical patterns and histopathological features. Although less prevalent than non-scarring alopecias, scarring variants are often progressive and therapeutically resistant, contributing to considerable emotional distress and reduced quality of life.[1,2]

Current treatment strategies include corticosteroids, immunosuppressive agents, and antimalarials, aiming to suppress inflammation and slow disease progression. However, these approaches often yield inconsistent outcomes, and many patients experience continued hair loss or relapse.[3,4] This has fueled growing interest in

alternative and adjunctive therapies to improve disease control and clinical response.

Laser-based therapies have emerged as a promising non-pharmacologic modality for scarring alopecias. These include ablative (e.g., fractional CO_2, Er:YAG) and non-ablative lasers, as well as LLLT. Proposed mechanisms of action include modulation of inflammation, remodeling of fibrotic tissue, and stimulation of follicular stem cell activity.[5,6] Although individual case reports and small studies suggest potential benefits, the evidence is scattered and varies in quality, design, and outcome measures.[7,8]

To our knowledge, no previous meta-analysis has comprehensively evaluated the effectiveness of laser therapies in scarring alopecias. A systematic synthesis of the available literature is warranted to determine whether these therapies offer clinically meaningful benefits and to assess their safety profile.

Objectives

This meta-analysis aims to evaluate the clinical effectiveness of laser-based interventions in treating scarring alopecias by systematically reviewing and quantitatively synthesizing available evidence regarding hair regrowth, disease stabilization, trichoscopic improvements, and adverse effects.

METHODS

Protocol and registration

This meta-analysis was conducted in accordance with the preferred reporting items for systematic reviews and meta-analyses (PRISMA) 2020 guidelines. The review protocol was registered with the international prospective register of systematic reviews (PROSPERO) under registration number CRD420251042347.

Eligibility criteria

We included randomized controlled trials (RCTs), non-randomized controlled studies, cohort studies, and prospective or retrospective case series were included, if measurable outcome was reported. Case reports, review articles, editorials, and conference abstracts without full data were excluded.

Population

Patients of any age or gender diagnosed with scarring alopecias, including but not limited to: LPP, FFA, CCCA, FD and DCS.

Intervention

Studies using laser-based therapies, including: LLLT, fractional CO_2 laser, Er:YAG laser and Nd:YAG laser

Comparison

Placebo/sham treatment, standard medical therapy and no treatment.

Outcomes

Primary outcomes were hair regrowth (clinically or trichoscopically measured) and disease stabilization (lack of progression)

Secondary outcomes were trichoscopic or histopathological improvement, patient satisfaction and adverse events

Information sources and search strategy

A comprehensive search was conducted in the following databases: PubMed, Cochrane CENTRAL and Scopus.

The search included articles published up to 1.28.2025 available as free full text and in English. Reference lists of included articles and relevant reviews were also screened manually.

Search terms included combinations of: (“laser therapy” [MeSH Terms] OR “laser therapy” [Title/Abstract] OR “low-level laser therapy” [Title/Abstract] OR “low level laser” [Title/Abstract] OR “LLLT” [Title/Abstract] OR “fractional CO2 laser” [Title/Abstract] OR “Er:YAG” [Title/Abstract] OR “Nd:YAG” [Title/Abstract]) AND (“cicatricial alopecia” [MeSH Terms] OR “cicatricial alopecia” [Title/Abstract] OR “scarring alopecia” [Title/Abstract] OR “lichen planopilaris” [Title/Abstract] OR “frontal fibrosing alopecia” [Title/Abstract] OR “central centrifugal cicatricial alopecia” [Title/Abstract] OR “folliculitis decalvans” [Title/Abstract] OR “dissecting cellulitis” [Title/Abstract]).

Study selection

Two independent reviewers (Dr Sekar and Dr Thamilselvam) screened titles and abstracts, followed by full-text screening.

Disagreements were resolved through discussion or consultation with a third reviewer. Study selection was documented in the PRISMA flow diagram.

Data extraction

A standardized data extraction form was used to collect: Author, year, country, study design, sample size and demographics, type and parameters of laser intervention, type of alopecia, comparator (if any), outcome measures and timepoints, results for all outcomes of interest, adverse events and data were extracted independently by the two reviewers as well as cross-checked for the accuracy.

Risk of bias assessment

Risk of bias for non-randomized studies was assessed using the ROBINS-I tool. Each included study was independently evaluated by two reviewers, with consensus reached through discussion. Studies were categorized as having serious or critical risk of bias based on confounding factors, absence of control groups, subjective outcome assessments, and small sample sizes.

Data synthesis and statistical analysis

Due to substantial heterogeneity in study designs, patient populations, and outcome measures, a formal quantitative meta-analysis was not feasible. Instead, a descriptive synthesis was performed. Where available, pre- and post-treatment clinical improvements were qualitatively summarized. A qualitative forest plot was created to illustrate the direction and magnitude of effects across included studies. Subgroup categorization was based on: Type of scarring alopecia treated, type of laser modality used and clinical outcome measures reported.

RESULTS

Study selection

A total of 41 records were identified from the PubMed database. After title and abstract screening, all 41 records were assessed for retrieval. 6 reports could not be retrieved due to non-availability of free full-text access.

Following full-text assessment of 35 articles, 28 studies were excluded for the following reasons: Systematic reviews (n=8), animal model study (n=2), case reports (n=5), wrong population (non-scarring alopecia) (n=4), survey study (n=2), letter to editor (n=1), review article (n=2) and case series with no outcome (n=4). Finally, seven studies met the eligibility criteria and were included in this meta-analysis (Figure 1).

Study characteristics

Seven non-randomized studies comprising a total of 51 patients included. Studies represented various scarring alopecias including LPP, FFA, DCS, FD, and AKN). Laser modalities evaluated included sLED therapy, LLLT, long-pulsed Nd:YAG (1064 nm), and excimer laser (308 nm), applied as monotherapy/adjunct to medical/surgical treatment. All studies reported clinical/trichoscopic improvement following laser therapy. A summary of study characteristics is presented in Table 1.

Narrative synthesis

This review included seven non-randomized studies investigating use of laser-based therapies for scarring alopecias, comprising total of 51 patients. Laser modalities evaluated included LLLT, sLED therapy, long-pulsed Nd:YAG, and excimer laser (308 nm), applied across different clinical contexts for LPP, FFA, FD, AKN) and DCS.

Randolph et al

In this four-patient case series, daily LLLT using a diode cap resulted in consistent clinical and trichoscopic improvement in LPP. Improvements included reduction of peripilar casts, visible hair regrowth, and resolution of pruritus. No adverse events were reported.[9]

Meesters et al

This single-patient case report documented complete remission of FD after nine sessions of long-pulsed Nd:YAG laser therapy. Remission was maintained over a 1.5-year follow-up, with no recurrence of inflammation or pustules. Mild procedural pain and crusting were noted but resolved spontaneously.[10]

Madura et al

In a 5-patient series, multimodal surgical therapy combined with adjunctive Nd:YAG laser hair removal for AKN achieved 80-90% lesion clearance, 4-5 patients remained recurrence-free at 6 months and reported high satisfaction. No significant adverse events reported.[11]

Gerkowicz et al

In a 16-patient pilot study, sLED therapy administered weekly for 10 weeks led to significant reductions in disease activity scores (LPPAI and FFASS) and increase in thick hair counts among patients with FFA and LPP. Therapy was well tolerated without adverse events.[12]

Parlette et al

This case report described a 26-year-old patient with DCS who achieved complete disease remission after eight sessions of long-pulsed Nd:YAG laser. No recurrence was observed at six months. Intraoperative discomfort was the main side effect, managed successfully with sedation.[13]

Navarini et al

In a 13-patient pilot study using 308 nm excimer laser for LPP and its variants, significant reductions in erythema, hyperkeratosis, and pruritus were documented. Clinical improvement in inflammation observed without major side effects. Hair regrowth noted in early-stage cases.[14]

Navarini et al subgroup analysis

Among patients with early-stage LPP, excimer laser treatment led to partial hair regrowth and symptom improvement, suggesting a potential window for early intervention in scarring alopecia.[15]

Across studies, laser-based treatments were consistently associated with improved clinical or trichoscopic outcomes, reduction of inflammation, stabilization of disease progression, and good cosmetic satisfaction. Laser therapy, especially when used as an adjuvant modality, appears to offer a valuable option for patients with scarring alopecias refractory to conventional treatments (Table 2).

Descriptive forest plot

A qualitative forest plot (Figure 2) summarizes the magnitude and direction of effects across the included studies. All studies demonstrated improvement in clinical or trichoscopic outcomes, with several reporting high-level responses such as complete remission or significant reductions in disease activity scores. Due to heterogeneity in study designs, patient populations, and outcome measures, quantitative pooling of effect sizes was not feasible (Table 3).

Risk of bias

Using the ROBINS-I tool for non-randomized studies, most included studies were judged to have a serious or critical risk of bias. Two studies were judged to have a serious risk of bias, and three were considered critical due to single-subject designs or very small sample sizes. The main sources of bias were confounding from concurrent treatments, absence of control groups, selective outcome reporting, and reliance on non-standardized or subjective outcome measures (Figure 3 and Table 4).

Table 1: Summary of study characteristics.

Study author, country	Study design	Sample size/ demographics	Laser type and parameters	Type of alopecia	Outcome measures (timepoints)	Results	Adverse events
Randolph et al[9], USA	Case series	4 females, aged 28-65	LLLT, diode cap (650-660 nm); daily use for 5-7 min for 6-18 months	LPP, FAPD	Hair regrowth, trichoscopic inflammation (3-6-12 months)	Visible regrowth, reduction in peripilar casts	None reported
Meesters et al[10], Netherlands	Case report	1 male, aged 34	Long-pulsed Nd:YAG; 9 sessions, 30-50 J/cm², 10 mm spot size	FD	Lesion size, inflammation, recurrence (1.5 years)	Complete remission, no new lesions	Mild pain, crusting post-session
Madura et al[11], India	Case series	5 males	Long-pulsed Nd:YAG; 4 sessions (4 weeks apart) post-surgical	AKN	Recurrence, lesion count, cosmetic outcome (6 months)	80-90% lesion reduction, high satisfaction; no recurrence in 4/5	None significant (1 lost to follow-up)
Gerkowicz et al[12], Poland	Pilot study	16 females, aged 41-76 years	sLED (630±5 nm); weekly sessions for 10 weeks	FFA, LPP	LPPAI and FFASS scores, trichoscopic hair counts (10 weeks)	Marked reduction in disease scores; increased thick hair counts	None
Parlette et al[13], USA	Case report	1 male, aged 26 years	Long-pulsed Nd:YAG (1064 nm); 8 sessions, 28 J/cm², 12 mm spot size	DCS of the Scalp	Lesion resolution, recurrence (6 months)	Complete remission;	Intraoperative discomfort,
Navarini et al[14], Switzerland	Pilot study	13 patients, mean age 64 years	Excimer laser (308 nm); ~11 sessions at 1 MED twice weekly	LPP and variants	Inflammation scores (weekly); erythema, pruritus, pain	Reduction in erythema, pruritus, hyperkeratosis	None significant
Navarini et al[15], Switzerland	Pilot study (same study)	Subgroup within above (LPP and FFA variants)	Excimer laser (308 nm)	LPP			

*Two entries by Navarini et al were clubbed under one study because it reported both inflammation reduction and early regrowth for some patients. FAPD=Fibrosing alopecia in a pattern distribution (variant of LPP).

Table 2: Summary of extracted outcomes.

Study	Condition	Laser type	Sample size	Effect description	Quantitative feasibility
Randolph et al[9]	LPP	LLLT (diode cap, 650-660 nm)	4	Trichoscopic improvement, hair regrowth in all 4 patients	Pre-post improvement (visual, trichoscopy), but no numeric scales
Meesters et al[10]	FD	Long-pulsed Nd:YAG (1064 nm)	1	Complete remission, no recurrence at 1.5 years	Single patient outcome, suitable for descriptive pooling
Madura et al[11]	AKN	Long-pulsed Nd:YAG (1064 nm)	5	80-90% lesion reduction, no recurrence in 4/5	Group-level % reduction reported, no means or SDs
Gerkowicz et al[12]	FFA, LPP	sLED, 630±5 nm	16	Significant reduction in disease scores (LPPAI, FFASS), increased thick hair counts	Pre-post mean scores available; suitable for quantitative pooling
Parlette et al[13]	DCS of the scalp	Long-pulsed Nd:YAG (1064 nm)	1	Complete remission, no recurrence at 6 months	Single patient outcome, suitable for descriptive pooling
Navarini et al[14]	LPP (and variants)	Excimer laser (308 nm)	13	Significant reduction in erythema, hyperkeratosis, pruritus; early-stage hair regrowth	Pre-post improvement (symptom scores), limited numeric data
Navarini et al[15] subgroup	Early-stage LPP	Excimer laser (308 nm)	Subgroup of 13	Partial hair regrowth noted	

Table 3: Descriptive forest plot table.

Study	Condition	Laser type	Direction of effect	Magnitude	Notes
Randolph et al[9]	LPP	LLLT (diode cap, 650-660 nm)	▲ Improvement	Moderate-high	Hair regrowth and reduction in inflammation in all 4 patients
Meesters et al[10]	FD	Long-pulsed Nd:YAG (1064 nm)	▲ Improvement	High	Complete remission with no recurrence at 1.5 years
Madura et al[11]	AKN	Long-pulsed Nd:YAG (1064 nm)	▲ Improvement	Moderate-high	80-90% lesion clearance in 5 patients
Gerkowicz et al[12]	FFA, LPP	(sLED, 630±5 nm)	▲ Improvement	High	Significant reduction in disease activity scores (LPPAI, FFASS)
Parlette et al[13]	DCS	Long-pulsed Nd:YAG (1064 nm)	▲ Improvement	High	Complete remission of DCS after 8 sessions, no recurrence
Navarini et al[14]	LPP (and variants)	Excimer laser (308 nm)	▲ Improvement	Moderate	Reduction in erythema, hyperkeratosis, pruritus; partial hair regrowth
Navarini et al[15] subgroup	Early-stage LPP	Excimer laser (308 nm)	▲ Improvement	Low-moderate	Partial hair regrowth in early-stage scarring alopecia

*▲ Improvement=favorable clinical effect. Magnitude=interpreted based on sample size, consistency of improvement, and strength of reported outcomes.

Table 4: Risk of bias summary.

Study	Risk of bias (ROBINS-I)	Reason for Judgment
Randolph et al[9]	Serious	No control group, potential confounding from concurrent medications, subjective outcome measures
Meesters et al[10]	Critical	Single-patient design, no comparator, descriptive outcomes only
Madura et al[11]	Serious	Small sample, concurrent surgical treatments confounding laser effect
Gerkowicz et al[12]	Serious	No control group, subjective outcomes (clinical scoring without blinding)
Parlette et al[13]	Critical	Single case report, no comparator, descriptive outcome
Navarini et al[14]	Serious	Small uncontrolled pilot study, subjective outcome assessments
Navarini et al[15] Subgroup	Critical	Subgroup of small uncontrolled study, exploratory analysis without independent validation

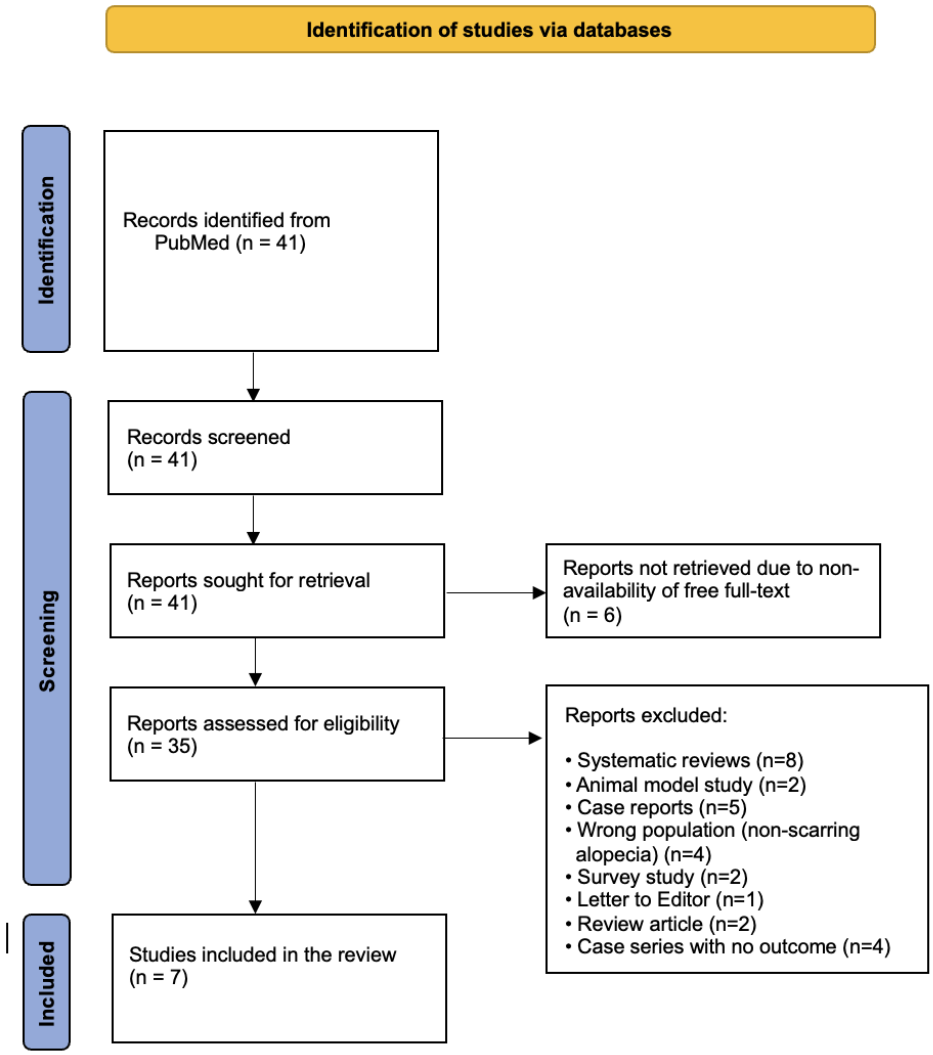

Figure 1: PRISMA flow diagram.

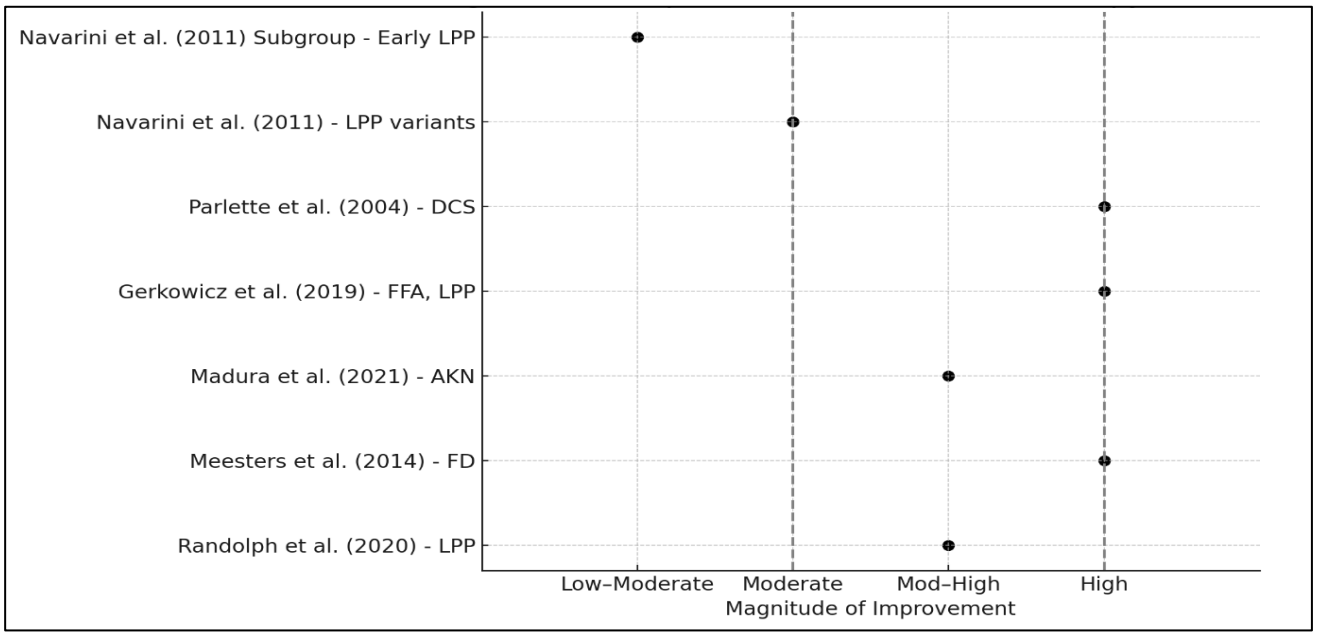

Figure 2: Descriptive forest plot of laser therapy outcomes.

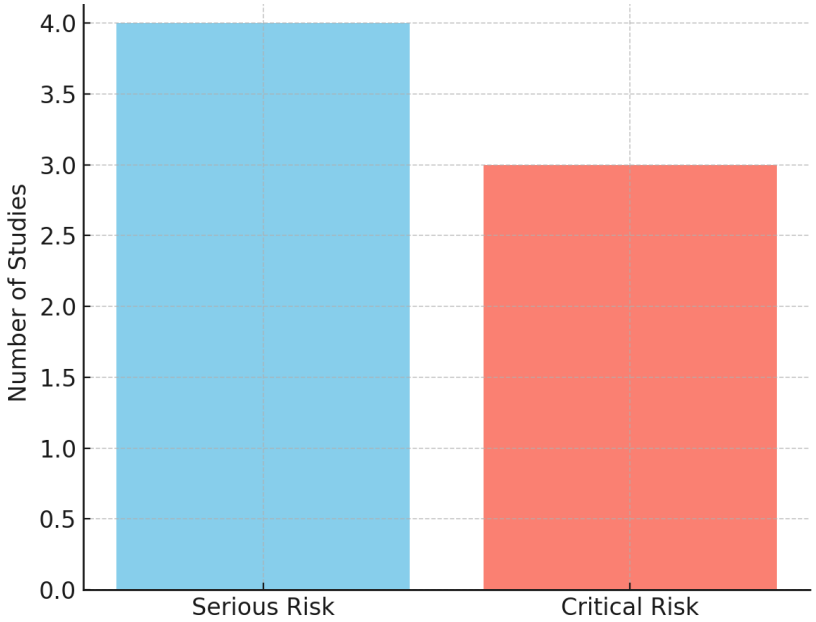

Figure 3: Risk of bias assessment (ROBINS-I).

DISCUSSION

This Meta Analysis compiled and analyzed evidence from seven non-randomized studies exploring the use of laser therapies in the management of scarring alopecias. Across these studies, different types of lasers, including LLLT, sLED therapy, long-pulsed Nd:YAG laser (1064 nm), and excimer laser (308 nm), were utilized to address various forms of cicatricial alopecia such as LPP, FFA, DCS, eloidalis Nuchae (AKN).[9-15] Despite notable variability in study designs, patient populations, and outcome measures, all included studies demonstrated clinical improvement following laser-based interventions, with some achieving high-level responses such as complete remission or significant reduction of disease activity.

The studies consistently reported positive clinical outcomes, including hair regrowth in early-stage scarring alopecias, reduction of perifollicular inflammation, decreased disease activity scores, and high patient satisfaction rates. The beneficial effects were observed irrespective of the type of laser used, suggesting that laser-based modalities may exert therapeutic benefits across different pathogenic mechanisms of scarring alopecias.

LLLT and sLED therapy, both based on photobiomodulation, were associated with notable reductions in inflammation and stimulation of hair regrowth.[9,12] The mechanisms proposed for these effects include modulation of inflammatory cytokine expression, enhancement of mitochondrial activity within follicular cells, and stimulation of hair follicle stem cells.[1,5] These findings support the hypothesis that LLLT and related therapies may not only halt the inflammatory process but also encourage partial follicular regeneration in early or reversible stages of cicatricial alopecia.[6]

Conversely, high-energy lasers such as long-pulsed Nd:YAG were primarily employed to target and destroy pathological pilosebaceous units. In conditions characterized by chronic follicular occlusion and secondary infection, such as FD, DCS, and AKN, laser epilation appears to interrupt the disease cycle by removing the inflammatory nidus.[10,11,13] Complete remission reported in studies of FD and DCS following Nd:YAG laser therapy underscores the potential of targeted follicular ablation as a disease-modifying strategy. The use of excimer laser (308 nm) was associated with improvement in clinical signs of inflammation, including reductions in erythema, pruritus, and hyperkeratosis.[14,15] Excimer laser therapy, which delivers monochromatic UVB light, is known to induce localized immunosuppression and T-cell apoptosis, mechanisms that are highly relevant to the pathogenesis of lymphocyte-mediated scarring alopecias such as LPP.[3,4] Although only partial hair regrowth was noted and limited to early-stage disease, the anti-inflammatory benefits observed are clinically meaningful, particularly in cases refractory to conventional systemic treatments.

Previous literature has primarily focused on conventional therapies for scarring alopecias, such as corticosteroids, antimalarials, tetracyclines, immunosuppressants, and retinoids.[3,4] However, these treatments often yield incomplete responses, and progression to irreversible follicular destruction remains common. Recent interest in laser therapies stems from the recognition of their dual potential: reducing inflammatory activity and promoting regenerative processes.[1,5]

Experimental studies in non-scarring forms of alopecia have demonstrated the ability of LLLT to upregulate hair growth-related factors such as vascular endothelial growth factor (VEGF) and keratinocyte growth factor (KGF), providing a plausible biological basis for their extension to cicatricial forms.[1,5,7] Moreover, studies investigating ablative lasers in chronic follicular diseases have shown that targeted destruction of diseased follicles can achieve durable remissions, as reflected in the current findings for FD, DCS, and AKN.[10,11,13] Nevertheless, direct comparisons between laser modalities remain limited due to the small size and heterogeneity of existing studies. No head-to-head trials comparing different lasers or evaluating combination regimens have been conducted to date. Therefore, while preliminary data are promising, definitive conclusions regarding the superiority of one laser modality over another cannot be drawn from current evidence.[8]

Risk of bias was significant across the included studies, which affects the strength and reliability of the findings. Using the ROBINS-I tool, most studies were rated as having either serious or critical risk of bias. Factors contributing to these ratings included small sample sizes, absence of control groups, concurrent use of systemic or topical therapies, lack of blinding, and reliance on subjective or semi-quantitative outcome assessments.

Case reports and small case series are inherently prone to publication bias, as studies with positive outcomes are more likely to be reported. Additionally, the lack of standardized outcome measures, such as validated alopecia severity scores or blinded trichoscopic evaluations, limits the comparability of results across studies. In several studies, clinical improvement was assessed through visual inspection or patient self-reporting, without objective quantification of hair density or inflammatory markers.

Given these methodological limitations, the current evidence should be interpreted cautiously. Although the consistency of positive outcomes across different studies lends credibility to the potential efficacy of laser therapies, high-quality controlled trials are necessary to validate these findings and establish clinical guidelines for their use.

Despite limitations, the findings of this review suggest that laser therapies represent a promising adjunctive approach for the management of scarring alopecias, particularly in cases that are refractory to conventional treatments. The minimally invasive nature of laser therapy, combined with generally favorable safety profiles, makes them attractive options for patients who may be unwilling or unable to tolerate systemic immunosuppressive regimens.[2,5] In clinical practice, careful patient selection is critical. Early-stage disease with active inflammation but preserved follicular structures may be more amenable to regenerative therapies such as LLLT or sLED,[9,12] whereas advanced cases characterized by permanent follicular destruction may benefit more from ablative laser approaches aimed at reducing secondary inflammation and preventing further tissue damage.[10,11,13]

Individualized treatment protocols, including combination regimens integrating lasers with medical therapies, may offer synergistic benefits. However, robust evidence supporting such combined approaches is currently lacking.[6,8]

Importantly, clinicians should counsel patients that while laser therapies may improve symptoms and stabilize disease progression, complete hair regrowth is unlikely in most cases of scarring alopecia once follicular destruction has occurred.[3,4]

Several limitations of this review must be acknowledged. First, the small number of available studies and the predominance of observational designs limit the ability to generalize findings. Second, there was substantial heterogeneity in study populations, laser parameters, treatment protocols, and outcome assessment methods, precluding quantitative meta-analysis. Third, potential publication bias may have inflated the apparent effectiveness of laser therapies, as studies reporting negative or inconclusive results are less likely to be published. Additionally, the absence of long-term follow-up data in most studies prevents conclusions regarding the durability of laser-induced remissions. Chronic cicatricial alopecias are characterized by unpredictable disease courses, and without extended observation, it is difficult to determine whether improvements attributed to laser therapy represent true disease modification or spontaneous fluctuation. Finally, the possibility of confounding effects from concurrent therapies cannot be excluded. In many studies, patients continued baseline treatments during laser interventions, making it difficult to isolate the independent effect of the laser.

Future studies should aim to address the methodological weaknesses identified in this review. Prospective randomized controlled trials (RCTs) comparing laser therapies with placebo or standard medical treatments are urgently needed. Such trials should incorporate standardized, validated outcome measures, as well as objective trichoscopic assessments performed by blinded evaluators.[7,8] Comparative studies evaluating different laser modalities, doses, and treatment schedules would help clarify optimal protocols. Furthermore, mechanistic studies exploring the biological effects of laser energy on scalp immunology and fibrosis could provide insights to guide rational combination therapies.

Long-term follow-up is essential to assess the sustainability of therapeutic responses and monitor for potential adverse effects. Incorporating patient-reported outcome measures and quality-of-life assessments will also enhance the relevance of future studies to clinical practice.[2]

CONCLUSION

In conclusion, this meta analysis highlights the emerging role of laser therapies as promising adjunctive treatments for scarring alopecias. Preliminary evidence suggests that both low-level light-based modalities and high-energy ablative lasers can improve clinical symptoms, reduce inflammation, and, in some cases, promote partial hair regrowth or achieve disease remission. However, the high risk of bias and methodological limitations of existing studies necessitates cautious interpretation of these findings. High-quality randomized controlled trials are needed to confirm efficacy, determine optimal protocols, and establish the role of laser therapies within the broader therapeutic landscape for cicatricial alopecias.

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