

Does adding PRP scalp injections to topical minoxidil improve androgenetic alopecia outcomes?

An evidence review for scientific exchange

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Disclosures

No external funding for this review

Speaker: Chandimal Alahakoon, MBBS — no conflicts of interest to declare

AI disclosure: produced with an AI-assisted evidence pipeline; every citation and number independently verified; physician-approved

Evidence base: systematic review of 6 randomized trials (portfolio piece, October 2026)

Objectives

Describe the current randomized evidence on PRP + minoxidil combination vs minoxidil alone
Interpret the reported effect sizes alongside their GRADE certainty ratings
Identify the evidence gaps and what future trials need to answer

Androgenetic alopecia is the most common hair-loss disorder — and it measurably impairs quality of life

Most common form of alopecia worldwide, in both sexes

Pooled DLQI 8.16 (95% CI 5.62–10.71) across 41 studies, n=7,995 — moderate QoL impairment

13-study systematic review: AGA is a significant psychosocial stressor by every measure used

Pooled estimates with heterogeneity; depression-scale scores did not reach clinical thresholds (CES-D 14.98).

Topical minoxidil is first-line — but it is one of only two FDA-approved drugs, and AGA remains challenging to treat

Only two FDA-approved drugs: topical minoxidil and oral finasteride

AGA is chronic; treatment choice must weigh efficacy, side effects, compliance, and cost

Many non-approved options are used, with uneven evidence

Approved-drug landscape per 2023 review; numerous non-FDA-approved treatments exist with varying evidence.

PRP delivers concentrated autologous growth factors to the scalp — the biological rationale for combination

PRP = plasma fraction of autologous blood with platelet concentration above baseline

Associated with enhanced cell multiplication and neo-angiogenesis in hair biology models

Mechanistic rationale only — not clinical proof of efficacy. PRP preparation protocols are unstandardized.

Six randomized trials (n=357) asked the same question: does adding PRP beat minoxidil alone?

All trials randomized PRP + topical minoxidil vs topical minoxidil alone
Follow-up 5–9 months; minoxidil 5% twice daily (2% in Agarwal 2023)

Trial	Design	n	Follow-up
Janaani 2025	3-arm RCT	75 rand.	32 wk
Agarwal 2023	Pilot open-label RCT	26	24 wk
Pachar 2022	Split-scalp randomized	50	6 mo
Gowda 2021	3-arm RCT, evaluator-blind	60	5 mo

Every trial favoured the combination on hair growth — none favoured minoxidil alone

Hair density (hairs/cm²): Janaani, Agarwal, Pachar — all favour combination

Dermoscopic density: Padhiar 42.97±8.96 vs 36.94±11.57, p=0.03

Ordinal investigator/dermoscopic scales (Gowda) and digital dermoscopy (Ramadan) — both favour combination

Direction is uniform; magnitude is not poolable — outcome metrics differ across trials.

Certainty is low: not one trial was at low risk of bias

GRADE: low certainty — downgraded for serious risk of bias and serious imprecision
Not downgraded for inconsistency: the direction of effect was uniform

Trial	Overall RoB 2
Janaani 2025	Some concerns
Agarwal 2023	Some concerns
Pachar 2022	High
Gowda 2021	High

PRP protocols varied too much to compare doses

PRP monthly ×4–6 sessions in most trials; 3–6 sessions in Ramadan

Minoxidil 5% twice daily (2% in the Agarwal pilot)

Preparation methods varied where described (single- vs double-spin) — 'PRP' was not the same intervention twice.

Protocol heterogeneity limits comparability — 'PRP' was not the same intervention twice.

Injection-site pain was the commonest PRP event; no serious adverse events were reported

Safety data: 5 trials, n=273

Pruritus and seborrheic dermatitis more frequent with minoxidil alone

No serious adverse events in any trial

Safety reporting was sparse and heterogeneous — very low certainty. Absence of reported SAEs is not proof of absence.

Patients liked the combination more — except in one small trial

3 of 4 trials favoured the combination (Pachar, Gowda, Padhiar)

Agarwal: minoxidil alone 28.6% vs combination 16.7% 'highly satisfied', $p=0.652$ — not significant

Heterogeneous satisfaction scales; very low certainty. The single discordant result was small and non-significant.

Doubling the evidence didn't change the answer — it strengthened a weak one

Direction: 3/3 trials favouring (previous review) → 6/6 (this update)

Certainty: very low → low — from weight of evidence, not better trial quality

The three new trials added uncertainties of their own (ordinal scales, undescribed randomization).

The evidence has named limits — know them before you cite it

Heterogeneous outcome metrics: no pooled effect estimate possible

Ramadan 2021 contributes direction only (full text unretrievable)

All-small-positive-trials pattern: reporting bias cannot be excluded

Possible residual retrieval gaps

Stating limits is what separates scientific exchange from promotion.

Key takeaways

Adding PRP scalp injections to topical minoxidil appears to improve hair growth vs minoxidil alone — low certainty

No serious events were reported, but safety data are thin — counsel accordingly

The field needs larger, pre-registered trials: standardized PRP, blinded assessment, hair-density endpoints

What this deck does not do

It does not recommend treatment — clinical decisions remain individualized

It does not claim superiority beyond what low-certainty evidence supports

It does not promote any off-label use

References

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Backup: how the evidence was found

1,680 records from multi-source searches (Europe PMC, OpenAlex, PubMed) plus bibliography mining

703 unique records screened → 9 full texts assessed → 6 included

3 excluded with reasons: wrong comparator, added growth factor, unclear randomization

Search executed October 2026; methods per PRISMA 2020.