

Efficacy of Platelet-Rich Plasma as an Adjunct to Hair Transplantation: A Systematic Review

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ADMINISTRATIVE INFORMATION

Support - None.
Review Stage at time of this submission - Preliminary searches.
Conflicts of interest - None declared.
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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 July 2025 and was last updated on 21 July 2025.

INTRODUCTION

Review question / Objective To systematically evaluate the clinical efficacy of platelet-rich plasma (PRP) as an adjunctive treatment to hair transplantation in individuals with androgenetic alopecia (AGA), compared to hair transplantation alone, focusing on outcomes such as hair density, hair thickness, graft survival, patient satisfaction, and safety profiles.

Condition being studied Androgenetic alopecia (AGA), a common progressive form of hair loss in both men and women, characterized by follicular miniaturization and patterned hair thinning.

METHODS

Participant or population Individuals diagnosed with androgenetic alopecia (AGA) undergoing hair transplantation, regardless of age, sex, or ethnicity.

Intervention Platelet-rich plasma (PRP) administered as an adjunctive treatment to hair transplantation, including intraoperative or postoperative PRP application using various preparation and delivery methods.

Comparator Hair transplantation performed without platelet-rich plasma (PRP), including procedures using placebo or standard techniques alone.

Study designs to be included Randomized controlled trials and prospective non-randomized clinical studies that compare hair transplantation with and without the use of platelet-rich plasma (PRP).

Eligibility criteria This review will include clinical studies published in English from database inception to June 2025 that investigate individuals diagnosed with androgenetic alopecia (AGA) undergoing hair transplantation. Eligible studies must involve the use of platelet-rich plasma (PRP) as an adjunct to hair transplantation, with a

comparison group receiving hair transplantation alone, either with placebo or standard procedure. Studies must report outcomes related to hair density, hair thickness, graft survival, patient satisfaction, or other measures of clinical efficacy. Only randomized controlled trials and prospective non-randomized clinical studies will be included. Studies without a control group, as well as unpublished studies or grey literature, will be excluded.

Information sources A comprehensive literature search was conducted using three electronic databases: Scopus, MEDLINE (via PubMed), and the Directory of Open Access Journals (DOAJ). The search covered all records from database inception to June 2025 and was limited to articles published in English.

Main outcome(s) The primary outcomes include improvement in hair density, hair thickness, and graft survival following hair transplantation with adjunctive platelet-rich plasma (PRP) treatment.

Quality assessment / Risk of bias analysis The methodological quality of included studies will be independently assessed by two reviewers using appropriate tools based on study design. The Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool will be used for non-randomized clinical studies, while the Cochrane Risk of Bias 2 (RoB 2) tool will be applied to randomized controlled trials. Discrepancies will be resolved through discussion.

Strategy of data synthesis Data from the included studies will be synthesized descriptively. Key findings, study characteristics, and outcome measures will be summarized in narrative form and presented in tables. Due to expected heterogeneity in PRP protocols, outcome measurements, and study designs, meta-analysis will not be performed. Statistically significant values (e.g., p-values) will be extracted directly from the original articles.

Subgroup analysis No subgroup analysis is planned due to the limited number of eligible studies and variability in PRP preparation methods, outcome measures, and follow-up durations.

Sensitivity analysis No sensitivity analysis is planned, as the review includes a small number of studies and is based on descriptive synthesis without meta-analysis.

Language restriction English.

Country(ies) involved Thailand.

Keywords Platelet-Rich Plasma; Hair Transplantation; Androgenetic Alopecia; Treatment Outcome; Graft Survival.

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