

Usefulness of PRP Therapy in Androgenic Alopecia

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ABSTRACT

Alopecia means loss of hair. Primarily there are two types of alopecia. Non-cicatricial alopecia and Cicatricial alopecia. Androgenic alopecia is non cicatricial localized alopecia and displays relatively high rates of occurrence in both men and women. Injections of platelet-rich plasma (PRP) have shown to be a successful regenerative treatment for androgenic alopecia. It is a well-tolerated procedure and easy to perform. The objective clinical results are good. It is safe and non-allergenic. In our institution, more than 300 patients were given PRP and their terminal hair mass, hair texture, anagen/telogen hair ratio, keratinocyte proliferation, blood vessel density, and other factors were assessed. More than 85 percent of patients who underwent PRP treatment, had a very positive outcome.

Keywords: Androgenic Alopecia, Platelet-rich plasma, Regenerative.

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I. INTRODUCTION

Fifty percent of men will experience some degree of AGA, also known as male-pattern baldness or MPHL, by age 50, and nearly 50 percent of women will experience AGA (female-pattern hair loss, FPHL) over the course of her lifetime [1]. Given the prevalence of hair loss in these populations, targeted therapies that reduce the appearance of thinning by delaying, arresting, or reversing the underlying pathology are highly desirable. Topical Minoxidil and oral finasteride are the only FDA-approved treatments for androgenic alopecia (AGA) [1]. Platelet-rich plasma (PRP) is gaining popularity as a treatment option for androgenic alopecia because of its rapid response.

II. METHODS

Between 2019 and 2020, all patients with androgenic alopecia who had failed to advance on topical Minoxidil and finasteride were considered for PRP treatment. Among them we select 55 patients to study. HBSAg and platelet count were measured. Hematological diseases, thyroid dysfunction, malnutrition, and other dermatological disorders that cause hair loss were all ruled out. The hair pull procedure was done

two times by the same clinician before each session. From the base close to the scalp, a packet of 50-60 hair was gripped between the thumb, index, and middle finger. Per session, the hair was forcefully tugged away from the scalp, and the removed hair was counted.

TABLE I: SUMMARY OF THE CASES

Total number of patients	55
Male	40
Female	15
No of PRPs taken	8
Time required to have a satisfactory result	7-8 months

III. RESULTS

All of our patients (100%) had a positive hair pull test with a mean number of ten hairs prior to therapy. The pull test was negative in 9 patients (81.81%) after the sixth session, for an average number of three hairs. Patients found a substantial decrease in hair loss between the fifth and sixth dose. Patient satisfaction was good overall.



Fig. 1. Before PRP therapy.



Fig. 2. After 8 sessions of PRP therapy.



Fig. 3. Before PRP therapy.



Fig. 4. After 6 sessions of PRP therapy.

IV. DISCUSSION

Hair loss is linked to poor self-esteem which causes depression and has a direct impact on psychological disorder. The only FDA-approved treatments for androgenic alopecia are topical Minoxidil and oral finasteride, which can be used alone or in conjunction [1]. Minoxidil, on the other hand, has a number of confirmed side effects, including headache and a rise in other body hairs while oral finasteride has been linked to libido loss [2]. Finasteride interferes with a male fetus's genital growth and is thus should not be used in pregnant women and others who are planning to become pregnant [3].

The most prevalent form of baldness is androgenic alopecia, which is marked by gradual hair loss. Caucasians have the highest prevalence, with up to 80% of Caucasian men and 40% of Caucasian women affected. AGA was found to be prevalent in 58 percent of population aged 30–50 years in a survey [4]. Even though it may begin at puberty, the occurrence of AGA rises with age [5].

We prepared PRP by single spin method, in which blood cell layers were manually separated. Activation of platelets through coagulation triggers the secretion of various growth factors, which produce mitogenic effects in various cell types. Activated PRP promotes the proliferation of dermal papillary cells and prevents their apoptosis.

Because of its possible role of skin rejuvenating benefits, accelerated healing, reduced inflammation, and decreased risk of hypertrophic keloids and scars, PRP has also drawn interest in cosmetic surgery, orthopedic surgery, and cardiac surgery [6]. Platelet rich plasma contains platelet derived growth factor (PDGF), TGF-beta 1, vascular endothelial growth factor (VEGF), epidermal growth factor (EGF), insulin like growth factor (IGF), fibrinogen (Fg), fibronectin (Fn) and thrombospondin-1 (TSP-1) [7]. These growth factors are believed to stimulate hair and stem cell proliferation and trans-differentiation, as well as the formation of new follicular units. Growth factors also play a part in hair shaft elongation. [8]

After eight PRP sessions, the hair pull test turned negative in our study and moderate improvement in hair volume and coverage was observed.

V. CONCLUSION

There are certain drawbacks to our research. The findings of a trichoscopic hair test should have been more realistic. The sample size is very limited. The average patient follow-up is therefore insufficient to draw conclusions about long-term efficacy. As a result, further research with a longer follow-up period is needed.

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