



EFFECTIVENESS OF PLATELET-RICH-PLASMA IN ANDROGENETIC ALOPECIA IN MALES

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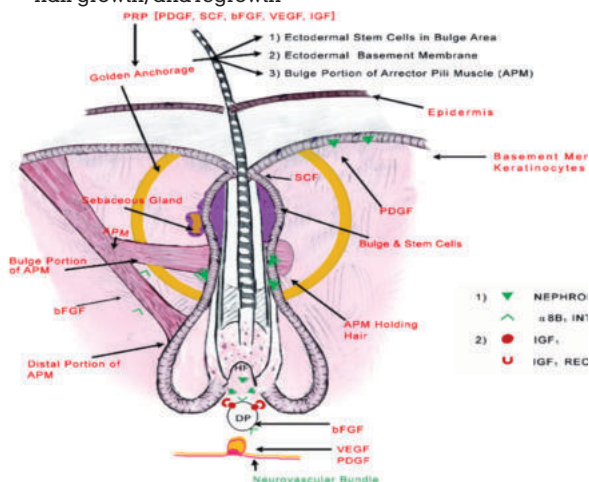
ABSTRACT

Introduction: Platelet-rich plasma (PRP) has become an increasingly additional method in treating androgenic alopecia (AGA). AGA is a multifactorial disease. The aim of this study was to evaluate the effectiveness of PRP in AGA affecting males. **Methods and Materials:** This prospective observational study conducted on 50 patients with AGA. Prior PRP, all patients underwent trichoscan. Blood investigations were performed to rule out metabolic causes. Platelet-rich plasma was prepared by double spin method.[5][6] The scalp injected with platelet rich plasma followed by microneedling. A total of six sittings were administered in each patient at an interval of 15 days. Hair density and diameter were measured over an area near the vertex, 10 cm from glabella. **Results:** The mean age was 43.35 ± 6.88 years, with 60% being females. The number of patients belonging to androgenetic alopecia grades 6, 5A, 5, 4A, 4, 3V and 3 were 11, 7, 3, 2, 2, 3 and 2, respectively. A significant difference was observed between the areas of the scalp where PRP injections were made. On the basis of trichoscan evaluation, the percentage increase in hair diameter was 39.8 ± 17.2 [and the percentage increase in hair density was 39.7 ± 16.5 . **Conclusion:** PRP is an effective way to increase hair diameter and hair density in AGA. It can be used in combination with other modalities such as minoxidil

KEYWORDS :

INTRODUCTION

- Androgenetic alopecia (AGA) is a common hair loss disorder caused by genetic and hormonal factors that are characterized by androgen-related progressive thinning of scalp hair in a defined pattern. By the age of 60 years, 45% of men and 35% of women develop AGA.
- Platelet-rich plasma (PRP) as a fraction of whole blood, must contain more than fourfold of the baseline platelet count, or an absolute count of 1,000,000/mL in 5 mL PRP.
- PRP is used in AGA, as it possesses a plethora of GFs, and is mitogenic, angiogenic, and chemotactic for keratinocytes, melanocytes, and fibroblast
- Therefore, it acts on various pathways of the "Golden Anchorage" model of the hair follicle as proposed by Garg and Manchanda – the bulge, dermal papilla (DP), vasculature, and neural/signaling cells, thus stimulating hair growth, and regrowth



Some of the most significant GFs released by the platelets include platelet-derived growth factor (PDGF), vascular endothelial growth factor, fibroblast growth factor (FGF), epidermal growth factor (EGF), hepatocyte growth factor, insulin-like growth factors 1 and 2 (IGF 1 and 2), and matrix metalloproteinases 2 and 9.

The above, along with WNT/ β -catenin pathway, which primarily functions during the embryonic hair morphogenesis, are responsible for promoting hair follicle proliferation

Aim

- The aim of this study was to evaluate the effectiveness of PRP in AGA affecting males

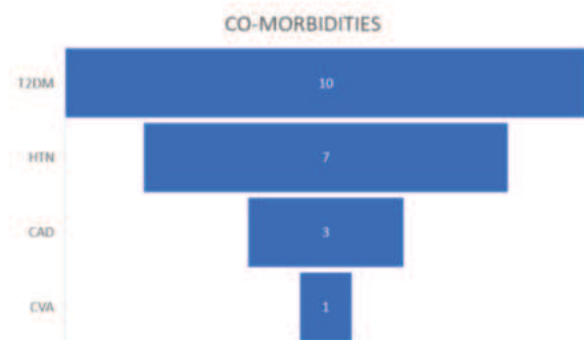
METHODS AND MATERIALS

- This prospective observational study conducted on 50 patients with AGA.
- All patients suffering from androgenic alopecia and on topical minoxidil and finasteride for at least 6 months without much improvement were considered for PRP therapy
- Written informed consent was obtained. All included patients were tested by ELISA for HIV, HBS Ag and platelet count
- Exclusion criteria were haematological disorders, thyroid dysfunction, malnutrition and other dermatological disorders contributing to hair loss.
- Prior PRP, all patients underwent trichoscan
- Blood investigations were performed to rule out metabolic causes. Platelet-rich plasma was prepared by double spin method.
- The scalp injected with platelet rich plasma followed by microneedling. A total of six sittings were administered in each patient at an interval of 15 days
- Hair density and diameter were measured over an area near the vertex, 10 cm from glabella.

RESULTS

- The mean age was 43.35 ± 6.88 years
- Of the study population, 18% had a positive history of AGA
- 20% of the patients were diabetic, while 1 patient had history of cerebrovascular accident

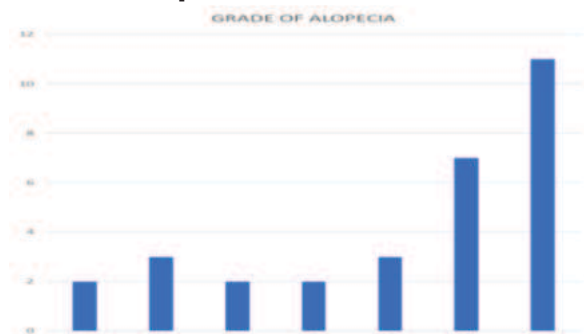
PARAMETER	NO	YES
marital status	3	47
family history	41	9



The most common grade of androgenetic alopecia was grade 6, followed by grade 5A

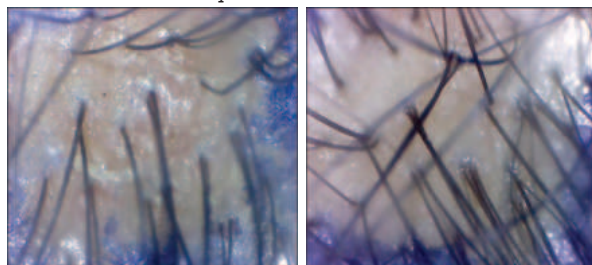
All the 50 patients received 6 PRP injections uniformly

There were no drop-outs



A significant difference was observed between the areas of the scalp where PRP injections were made

On the basis of trichoscan evaluation, the percentage increase in hair diameter was 39.8 ± 17.2 [and the percentage increase in hair density was 39.7 ± 16 .



PRE PRP

POST PRP

DISCUSSION

- In the present study, there was an improvement with trichoscan findings after PRP
- This finding is comparable with the study conducted by Besti et al. This study also observed significant improvement in hair volume and coverage in global pictures,.
- Uebel et al. observed a significant improvement in hair density and stimulation of growth when follicular units were pre-treated with platelet plasma growth factors before their implantation.
- Gkini et al. reported a non-randomized trial to assess the efficacy of PRP injection in 20 patients affected by androgenic alopecia. PRP was prepared by single spin centrifugation at 1500g for 5 minutes.
- Patients were treated with three sessions of PRP at an interval of three weeks, and a booster session was also done at six months
- Hair density significantly increased throughout the study period, with a peak at three months

- They proposed that patients with Grade II-III AGA had a favorable treatment response compared to patients with more severe alopecia.

CONCLUSION

- PRP is an effective way to increase hair diameter and hair density in AGA
- It can be used in combination with other modalities such as minoxidil

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