Personalized Platelet Rich Plasma (PRP) treatment for androgenetic alopecia: A comprehensive case study

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Androgenetic alopecia (AGA), a prevalent form of hair loss affecting both men and women, is marked by the progressive miniaturization of hair follicles. Platelet-Rich Plasma (PRP) therapy has emerged as a promising regenerative treatment for managing AGA. This case study examines the efficacy of a personalized PRP treatment protocol in a 27-year-old male patient with moderate AGA, classified as Norwood-Hamilton scale III-IV. The treatment involved microneedling-assisted application of PRP, prepared from the patient's autologous blood with a platelet concentration of 5x the baseline, administered over three sessions spaced four weeks apart. Outcomes were assessed using phototrichography analysis, scalp biopsy, and patient-reported satisfaction. Results showed a 42% increase in terminal hair density, with the mean hair shaft diameter improving from 0.04mm to 0.06mm. The patient reported a satisfaction score of 8.5/10, with no significant adverse events observed. Histological analysis revealed improved scalp vascularization and follicular activity, indicating enhanced follicular health. This study highlights the potential of personalized PRP therapy in improving hair density, thickness, and patient satisfaction in AGA management. While the findings underscore the efficacy of a tailored approach, limitations include the single-patient sample and the need for long-term studies to validate the results and establish standardized protocols. Personalized PRP therapy offers a promising, minimally invasive solution for AGA, warranting further exploration in broader clinical trials.

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