



HAIR DISORDERS

## CLINICAL EFFICACY OF HAIR TISSUE-BASED THERAPY IN TREATMENT OF MALE ANDROGENIC ALOPECIA

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**Background:** A hair-tissue based therapy in androgenic alopecia has been investigated. Harvesting hair at the occiput increases the ability and interaction of healthy dermal papilla cells (DPCs) and their macro-and microenvironment to restore a pathologic balding scalp. This approach can be a new and promising concept of hair regeneration, especially in male androgenic alopecia.

**Objective:** To evaluate the clinical efficacy of intradermal injection of autologous cellular suspension (ACS) acquired by mechanical centrifugation, consisting a heterogeneous pool of cells rich in androgen-insensitive DPCs and their associated cells and cytokines in male androgenic alopecia.

**Methods:** Male patients with androgenic alopecia, aged 20-50 years, and Hamilton-Norwood (NW) stage III-V vertex were enrolled. They each received one treatment session with an intradermal injection of ACS at the balding vertex on their scalp. The efficacy measurement was based on the change from baseline in hair density and hair diameter at week 12. Photographic assessment by two blinded dermatologists was carried out. Any adverse events were also recorded.

**Results:** There were 5 male patients, mean (SD) age of 37.3 (4.8) years and NW stage for III vertex (40%), IV (20%), and V (40%). A significant increase in mean hair shaft diameter was from 42.4(6.7) to 47.7(5.9) ( $p=0.001$ ) and 49.6(6.6)  $\mu\text{m}$  ( $p=0.019$ ). Whilst, a decrease in vellus hair density was observed for 40(20), 26(16.7) ( $p=0.11$ ) and 8(13) ( $p=0.20$ ) hairs/cm<sup>2</sup> at baseline, 3 months, and 6 months, respectively. The photographic assessment at vertex yielded moderate improvement at 6 months from baseline (score 2.1(0.7),  $p=0.004$ ), with statistical significance. Minor adverse effects included minor pain and scalp pruritus at day 2 and day 3 following the treatment.





Conclusion: Androgen insensitive DPCs yields the reverse miniaturization of hair shafts, with potential treatment in male androgenic alopecia. Whereas, bio-molecular pathways and larger sample size are suggested to verify the treatment efficacy.

