Positive patient-reported outcomes following treatment of stable vitiligo with autologous skin cell suspension transplantation prepared by a point-of-care cell harvesting device

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Introduction: Patient-reported outcomes (PROs) provide insight into the patients’ perspective of treatment they are receiving and have the potential to guide tailored interventions while monitoring treatment progress.1 Vitiligo is an autoimmune skin condition characterized by depigmentation due to melanocyte loss.2 It is often associated with psychosocial comorbidities that can greatly impact patients’ quality of life.2-4 PROs in this patient population can provide valuable information on the impact of their vitiligo treatment. A point-of-care cell harvesting device allows for the preparation of non-cultured autologous skin cell suspension (ASCS) containing melanocytes, keratinocytes and fibroblasts with a 1:20 donor to treatment site expansion ratio for the surgical treatment of stable vitiligo.

Objective: This study assessed multiple PROs following the one-time treatment of device-prepared ASCS for the repigmentation of stable vitiligo lesions in adults.

Methods: A multi-center, randomized, within-subject controlled study compared laser ablation, ASCS, and NB-UVB phototherapy (ASCS treatment) to NB-UVB alone (control). All lesions were evaluated by a Central Review Committee (CRC) of blinded dermatologists providing repigmentation categories (0%-25%, 26%-50%, 51%-79%, 80-100%) at 24 weeks post-treatment; repigmentation was analyzed by a Wilcoxon signed rank test at a 2-sided 0.05 significance level. The following PROs were assessed at Week 24: global treatment success, donor site satisfaction, Vitiligo Noticeability Score (VNS), and Patient Global Impression of Change-Vitiligo (PaGIC-V). Post-hoc comparisons were performed on tertiary measures using McNemar’s exact text, Wilcoxon signed rank test, or independent t-test (α=0.05).
Results: A total of 25 patients were included for analyses. Most patients were white (80%), 40% were Fitzpatrick skin type III, and approximately half (48%) had generalized vitiligo. The following repigmentation categorization was reported by the CRC at week 24: 24% of ASCS-treated lesions vs. 52% of control lesions achieved up to 25% repigmentation, 8% of ASCS-treated lesions vs. 16% of control lesions achieved 26-50% repigmentation, 20% of ASCS-treated lesions vs. 12% of control lesions achieved 51-79% repigmentation, and 36% of ASCS-treated lesions vs. 0% of control lesions achieved ≥80% repigmentation (P<0.001). Patient-reported treatment success was 80% (n=20) for ASCS-treated areas vs. 48% (n=12) for the control areas. Donor site satisfaction was reported by 88.0% (n=22) of patients. Significantly more ASCS-treated areas (52%, n=13) achieved VNS response (patient-assessed score 4 or 5) compared to control areas (12%, n=3) (P<0.001). Similarly, significantly more ASCS-treated areas (60%, n=15) achieved PaGIC-V response (patient-assessed score 1 or 2) compared to control areas (24%, n=6) (P<0.001).

Conclusion: At 24 weeks, ASCS-treated areas achieved superior repigmentation compared to control areas. The majority of patients reported satisfaction in their donor site, suggesting this is not a barrier to treatment. Treatment success was further validated by favorable patient assessments. Positive PROs suggest that ASCS treatment could potentially improve the psychological well-being of patients, leading to a better quality of life. This study provides evidence for the use of autologous skin cell suspension as a highly effective treatment for the repigmentation of stable vitiligo, confirmed by positive patient-assessed outcomes.

Keywords: melanocyte transfer, autologous skin cell suspension, vitiligo surgery, cellular grafting, RECELL

References:


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