

# Vitiligo and Skincare Physicians Meeting

September 15-16, 2016 Berlin, Germany

## Emerging trends in the management vitiligo

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Vitiligo, histologically is characterized by loss of melanocytes with diminished or absent activity of melanocyte tyrosinase on the melanin pigment precursor dihydroxy phenyl alanine (DOPA). Worldwide, prevalence of vitiligo is of 0.5-1.0%; 1 in 136 or 0.74% or 2 million people in USA. In India, incidence of vitiligo is around 0.5-2.5%. The ratio of males and females is 1:1 and the age at onset is 20 or 30 years and 50% of the disease population develops their full clinical picture before attaining their early adult life. A disorder consisting of areas of macular depigmentation, commonly on extensor aspects of extremities, on the face or neck and in skin folds involving unilateral, bilateral, symmetrical distribution. Emotional distress and discrimination is also usually associated with vitiligo. Therefore, it is important to develop immune modulators to control the aggravation of the disease, melanogenic drugs to induce repigmentation at the same time to overcome the resistance phase.

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## Novel method for generating fractional epidermal micro-grafts

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Epidermal suction blister grafting is an effective treatment for wounds or vitiligo but tedious and limited to small areas. We developed two novel strategies to create "fractional" epidermal grafts and compared them. Epidermal blisters were raised from fresh human skin ex vivo at 38-40 °C, with suction of 380-510 mm Hg. In Strategy-1, a 1 cm blister was micro-meshed into ~500 pieces, transferred to elastic adhesive dressing, then pneumatically expanded to ~9x the original blister area. Strategy-2: a 25 cm<sup>2</sup> array of 100 small blisters was raised, simultaneously harvested and captured directly onto an adhesive dressing. The pneumatic expansion limit, release of micro-blisters upon hydration of the dressing adhesive, light microscopy, epidermal cell viability and DOPA positive melanocyte presence in blisters were measured. Both strategies yielded viable fractional epidermal micro-blisters arrays, carried on a dressing for transfer to graft-recipient sites. The micro-blisters were gradually released upon hydration of the dressing adhesive. Strategy-2 has major advantages; only small blisters are made at the donor site, skillful dissection and physical expansion are not required and the strategy can be scaled to create large area grafts. Strategy-2 is practical for fractional epidermal micro-grafting and has recently been commercialized.

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