PSORIASIS

ARE INTERLEUKIN 17-INDUCED PSORIATIC MORPHOLOGICAL FEATURES PROMPTLY REVERTED BY A SPECIFIC BIOLOGICAL INTERLEUKIN 17 INHIBITOR IN A 3D MODEL OF NORMAL HUMAN SKIN?

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Background: Biological agents are the most common systemic therapy in severe psoriasis. Interleukin 17 (IL-17) is a well-known proinflammatory psoriatic cytokine mainly produced by the T helper subclass Th17. IL-17 elicited Langerhans cell (LC) activation and migration, keratin 17 expression, Toll like receptor 9 expression and profoundly altered filaggrin expression, without affecting the biomarkers of terminal differentiation as keratin 10 and keratin 14 in the 3D model organotypic cultures of normal human skin.
Objective of the study: Our aim was to investigate if a specific IL-17 inhibitor can promptly revert these effects in the same experimental setting.

Materials and Methods: Bioptic skin fragments obtained after aesthetic surgery of healthy young women (n=5) were incubated with i) IL-17 alone, ii) with a combination of IL-17 and an IL-17 biological inhibitor, iii) with the IL-17 biological inhibitor alone. Control samples were in parallel cultured. Incubation lasted for 24 and 48 hours with skin at the air-liquid interface. Immunofluorescence experiments and transmission electron microscopy (TEM) analysis were carried out.

Results: Samples incubated with the IL-17 biological inhibitor were comparable to controls. By immunofluorescence, the combination reverted IL-17-induced effects at all considered time-points. By TEM, LCs appeared less activated as shown by the paucity of Birbeck granules and the highly dispersed nuclear chromatin. The epidermal ultrastructure was comparable in all groups, with well-preserved desmosomes, interspersed keratin filaments and terminally differentiated granular keratinocytes/corneocytes.

Conclusions: These results highlight the clinical usefulness of this experimental approach

for identifying the cellular early psoriatic processes that can be modulated by last generation biological agents.