

IMMUNOHISTOPATHOLOGY OF VENOUS LEG ULCERS- INFILTRATING CELLS, CYTOKINES AND GROWTH FACTORS

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Aim: The aim of the study was to determine the functional capacity of skin cells in ulcer bed tissue compared to those in the edge of ulcers and skin distal to ulcers.

Methods: Excised tissue samples comprising the ulcer base, ulcer edge and surrounding intact skin was examined immunohistochemically.

Results: The expression of cytokines and growth factors by KC was similar in areas adjacent and remote from an ulcer. In the dermis adjacent to an ulcer, the expression of interleukin (IL) -1 α , IL-1 β , IL-1Ra, epidermal growth factor and platelets-derived growth factor A by EC was higher than the levels of expression in EC from the distant dermis. The expression of IL-6, tumor necrosis factor α and granulocyte macrophage -colony stimulating factor was comparable to that in cells from intact dermis. For all these factors staining was cytoplasmic, suggesting production in these areas. Ulcer bed tissue contained few fibroblasts and blood capillaries showing a high staining intensity for CD62E and CD106 EC adhesion molecules but no basic fibroblast growth factor expression ($P<0.05$). The mean intensity of staining for scavenging CD15+elastase+ granulocytes and CD35+ (C3bR) activated macrophages in the ulcer bed was comparable to that in the margin but higher than that in the distant dermis ($P<0.05$). Staining for CD68+, HLA DR+, TGF β + and CD54+ dermal macrophages was similar in all areas. There was reduced staining for CD4+ and CD8+ cells in the ulcer bed ($P<0.05$). There were no CD1a+ Langerhans cells in the epidermis encroaching upon the granulation tissue and there was reduced CD1a staining in the adjacent epidermis ($P<0.05$).

Conclusion: There is chronic accumulation of scavenging cells with lack of remodeling of the granulation tissue and, at the same time, preserved cytokine and growth factor secretory potential of KC and dermal EC in non-healing venous leg ulcers.