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Titel des Beitrags:
Immunosuppression affects CD4+ mRNA expression and induces Th2 dominance in the microenvironment of cutaneous squamous cell carcinoma in organ transplant recipients.

Abstract:
Squamous cell carcinoma (SCC) is the most frequent cancer in organ transplant recipients (OTRs). The immune system plays a major role in the fight against SCC, however, little is known about the local inflammatory response in SCC at all. We analyzed quantity and quality of the perineoplastic inflammatory SCC microenvironment in immunocompetent patients and immunosuppressed OTRs. RNA expression profile of SCC patients was analyzed for 8 different sets of genes relating to Th1 versus Th2 response using Gene Set Enrichment Analysis. SCC from immunocompetent patients and OTRs were analyzed by real-time polymerase chain reactions for CD4, CD8, TBET, GATA-3, FOXP3, RORC, IFN-gamma, IL-4, TGF-beta, IL-10, and IL-17A mRNA expression. Immunohistochemistry was carried out in SCC for CD3, CD4, CD8, and FOXP3 expression. Considerable inflammation was seen in both patient groups. SCC in immunocompetent patients and OTRs was associated with a mixed Th1 and Th2 gene expression signature. CD4(+) mRNA was diminished in immunosuppression. Skin adjacent to SCC in OTRs showed Th2 expression pattern as compared with immunocompetent patients. T-BET
and IFN-gamma mRNA expression were decreased in the OTR group. Although Th17-weighted inflammation was unchanged, IL-17A mRNA level was markedly decreased with immunosuppression. Regulatory T cells, characterized by FOX-P3 and TGF-beta mRNA level, were decreased in OTRs. Our findings support the hypothesis that nontumor-bearing skin adjacent to SCC in OTRs is not necessarily normal and that the local microenvironment may contribute to a field effect contributing to higher recurrence rates and more aggressive behavior observed in these patients.