Reflectance confocal microscopy for noninvasive monitoring of therapy and detection of subclinical actinic keratoses.


**ABSTRACT**

**BACKGROUND**: Actinic keratoses (AK) represent cutaneous carcinoma in situ and have previously been evaluated by reflectance confocal microscopy (RCM). Treatment of AK with imiquimod (IMIQ) 5% cream has been shown to 'highlight' subclinical lesions.

**OBJECTIVE**: The aim of this study was to test the applicability of RCM for noninvasive monitoring of actinic field cancerization and detection of subclinical AK.

**SUBJECTS AND METHODS**: AK and surrounding skin sites with no apparent AK of 11 volunteers were selected for imaging and subsequently classified as 'clinical' and 'subclinical' AK. IMIQ was used 3 times weekly for 4 weeks.

**RESULTS**: RCM was able to detect morphologic features of AK in both clinical and subclinical AK; features were more pronounced in clinical lesions. The immunomodulatory response induced by IMIQ was visualized by RCM.

**CONCLUSION**: Our findings indicate that RCM allows noninvasive monitoring of treatment response in vivo and permits early detection of subclinical AK, thus substantiating the incentive for therapy.