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**ABSTRACT**

BACKGROUND: Actinic keratosis (AK) is a common skin disorder that can progress to invasive squamous-cell carcinoma. AK can present as clinical (visible) or subclinical (invisible) lesions within areas of chronic sun damage. The importance of treating subclinical AK is gaining support. We present a subanalysis of a previously published Phase III, double-blind, vehicle-controlled study (NCT02289768), to assess 5-fluorouracil (5-FU) 0.5%/salicylic acid 10% treatment for subclinical AK lesions using reflectance confocal microscopy (RCM).

OBJECTIVE: To determine the efficacy of 5-FU 0.5%/salicylic acid 10% as field-directed treatment for subclinical AK lesions using RCM.

METHODS: For inclusion in this subanalysis, patients had to have at least three subclinical AK lesions within a 25 cm² area of skin. Subclinical AK lesions were diagnosed according to the presence of three key RCM criteria: architectural disarray; keratinocyte atypia and pleomorphism at the basal, spinous and granular layer. Subclinical AK lesions were evaluated by RCM at baseline, after 4, 6 and 12 weeks of 5-FU 0.5%/salicylic acid 10% treatment or vehicle, and 8 weeks following the end of treatment.

RESULTS: Twenty-seven patients were included: 17 [mean age = 72.2 years, standard deviation (SD) = 6.3] received 5-FU 0.5%/salicylic acid 10% treatment and 10 (mean age = 76.4 years, SD = 3.9) received vehicle. Eight weeks following the end of treatment, the mean number of subclinical lesions declined (from 3.0 at baseline) to 0.3 (95% confidence interval [CI] 0.06-0.57) for the 5-FU 0.5%/salicylic acid 10% group and 1.6 (95% CI 0.52-2.68) in the vehicle group (reductions of 90% [95% CI 72.1-107.1] vs. 47% [95% CI 24.8-69.5], respectively; P = 0.005). The proportion of patients receiving 5-FU 0.5%/salicylic acid 10% showing complete clearance of three preselected subclinical AK lesions was numerically greater than in the vehicle group (69% vs. 40%, respectively; P = 0.183).

CONCLUSION: To the best of our knowledge, this is the first randomized, vehicle-controlled study investigating 5-FU 0.5%/salicylic acid 10% treatment for subclinical AK lesions. The present data suggest some treatment efficacy for subclinical AK lesions detected using RCM. However, this subanalysis was not sufficiently powered and should be reproduced in a larger, subsequent cohort. © 2017 European Academy of Dermatology and Venereology.

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