



HAIR DISORDERS

NON-INVASIVE TECHNIQUES FOR SCARRING AND NON-SCARRING ALOPECIAS EVALUATION AND FOLLOW-UP. A RETROSPECTIVE STUDY.

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Introduction: The routine use of non-invasive, real-time tools for diagnosis and management of scalp disorders is highly requested; this mainly derives from the necessity of detailed and reproducible information for a correct diagnosis and follow-up, in contraposition to the implications of skin biopsies. Dermoscopy and reflectance confocal microscopy (RCM) have been already demonstrated to be useful for diagnosis and management in scarring (SA) and non-scarring alopecias (NSA).

Objective: The aims of this study are:

- to correlate dermoscopic and confocal features observed in hair and scalp diseases
- to identify specific RCM criteria, useful for the diagnosis and for the management of SA.
- to perform faster diagnosis and more successful therapeutical follow-up.

Materials and Methods: Images and RCM exams from 236 patients affected by SA (168) and NSA (68) were retrospectively, blinded evaluated by 3 dermatologists. 31 dermoscopic and 35 confocal features were collected; the data were statistically analysed. The concordance between readers was estimated using the Cohen's Kappa Test; the association between parameters was analysed using the X2 test.

Results: The main patterns observed by dermoscopy were correlated with the confocal features. Concordance was overall "good" ($0.61 < K < 0.80$ for 30/35 confocal criteria), except for the inflammatory criteria (erythema, inflammatory cells; $K < 0.61$). The presence of some peculiar confocal features, like epidermal acanthosis, inflammatory cells, white papillae and eccrine sweat glands, are identified.

Specific RCM features, useful for the differential diagnosis and follow-up (inflammatory cells, fibrosis), have been detected.

Conclusions: Dermoscopy of the scalp lacks to offer microscopic information, which may be





determinant for diseases activity and/or complete healing of the alopecic process definition. RCM gives to the dermatologists the possibility of a more sensible clinical and therapeutical follow-up, closing the gap still existing between the clinical/trichoscopic interpretation of response to treatment and the histopathological information of inflammatory process disappearing.

