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Reflectance confocal microscopy for the evaluation of sensitive skin.

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ABSTRACT

BACKGROUND: Nowadays, the diagnosis for sensitive skin relies on subjective assessment or on the combination of subjective and objective evaluation. No quantitative evaluation is available. It could be expected that confocal microscopy imaging could be of interest to better define the condition. **METHODS:** Total 166 healthy female subjects were recruited in this study. Firstly, all subjects completed the sensitive questionnaire. Then, the cutaneous structures were measured by the reflectance confocal microscopy (RCM) on the face and fossa cubitalia. The lactic acid sting test was conducted finally. According to the results of self-perception sensitive skin questionnaire and lactic acid stinging test to evaluate facial skin sensitivity the both positive subjects were regarded as sensitive skin group and both negative group as healthy control group. **RESULT:** The results of RCM indicating that the proportion of 'disarranged honeycomb pattern' and 'spongiform edema' in the sensitive group and healthy control group were statistically different ($P < 0.05$), respectively; The following report 'damaged dermal papilla rings' was not a distinctive pattern, with no significant statistical difference ($P > 0.05$). The epidermal thickness was $38.88 \pm 6.81 \mu\text{m}$, healthy control group was $40.31 \pm 9.37 \mu\text{m}$ in, respectively, sensitive skin group and healthy control group, there was no significant statistical difference between the two groups ($P > 0.05$). The honeycomb structure depth of sensitive group was $20.57 \pm 4.86 \mu\text{m}$. It was for $23.27 \pm 6.38 \mu\text{m}$, healthy control group the difference being statistically different between the two groups ($P < 0.05$). **CONCLUSION:** Based on the RCM results, 'epidermal honeycomb structure' and 'spongiform edema' may be used as new skin signs of RCM evaluation of sensitive skin effectively. Indeed, sensitive skin honeycomb structure depth was thinner compared with healthy control group. Such a specific pattern has good clinical and monitoring value for the further exploration. RCM could provide new data and patterns for the evaluation of sensitive skin. © 2016 John Wiley & Sons A/S. Published by John Wiley & Sons Ltd. **KEYWORDS:** honeycomb pattern; reflectance confocal microscopy; sensitive skin; spongiform edema PMID:27782310 DOI:10.1111/srt.12327