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Assessment of dermal papillary and microvascular parameters in psoriasis vulgaris using in vivo reflectance confocal microscopy.

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ABSTRACT

In vivo reflectance confocal microscopy (RCM) is a modern, non-invasive imaging technique, which allows for real-time examination of the upper layers of the skin at a resolution similar to that of classic microscopy. In addition, it has the advantage of real-time evaluation of blood flow and dynamic monitoring of cutaneous changes while preserving tissue integrity. The present study reported on the in vivo RCM technique as an objective method for the noninvasive assessment of psoriasis vulgaris that is potentially applicable in clinical studies and in monitoring the evolution of lesions under treatment. In psoriasis lesions, RCM virtual horizontal sections at the level of the dermo-epidermal junction featured numerous and prominent dermal papillae that were not surrounded by bright rings of basal cells. Micromorphological examination of the lesions using this technique revealed that mean values of the section area, the perimeter and the Feret's diameter of the dermal papillae were significantly higher in psoriatic lesions than in normal skin. An increased number of capillary vessels per lesional dermal papilla as compared to healthy skin was observed. Furthermore, micromorphological parameters of dermal capillaries were increased in psoriatic skin. These observations point to the utility of in vivo RCM as a promising technique for the non-invasive diagnosis of psoriasis vulgaris, for monitoring the evolution of lesions at a micromorphological level under various treatments and for gaining a better understanding of the pathophysiological processes that occur in the evolution of this disease. **KEYWORDS:** psoriasis vulgaris; reflectance confocal microscopy

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