

Image analysis on senile lentigo by dermoscopy and improvement of quality of life index after treatment and makeup.

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A computer assisted area of involvement measurement of skin pigmentations would be useful for the assessment of senile lentigo. It is, however, sometimes difficult when lesions cannot simply be separated using the photographs taken under normal condition. Because of the skin curvature and the glare due to sebum, brightness of the pictures would not be equal.

We used a novel cross-polarized flash system, which enables to take a wide range of dermoscopy picture. An image from a patient with senile lentigo was taken by a single-lens reflex digital camera equipped with the flash system. The area of the lesions were semi-automatically extracted and sum of the darkness score "z" compared with normal skin, was calculated and defined a s QPI (quantified pigment index) after color correction using Casmach system and size correction. The darkness of the senile lentigo was also assessed by two dermatologists. The QOL index was evaluated by patients before and after treatment or makeup. Skindex 16 and Dermatological Life Quality Index, Japanese version, were used for the assessment of the QOL of the patients.

Images were collected from 40 patients for at least 3 months every 4 weeks. Total of 160 images were assessed. Some difficulty of image analysis were pointed out, including a variation of image brightness which could not be corrected even with the Casmach system, different camera settings, lighting condition affected by natural light or room light. There were some patients who experienced a worsening of skin lesion due to seasonal and accidental ultraviolet irradiations.

The method of image analysis of pigmentation might be of use if the photographing conditions were appropriately standardized and assessed carefully comparing with subjective evaluation by dermatologists and with QOL index by patients. The establishment of these objective methods would be desirable to measure the area of pigmentations for an assessment of treatment efficacy.