ABSTRACT BOOK
ABSTRACTS

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DERMOSCOPY AND SKIN IMAGING

COMPUTER-ASSISTED DIAGNOSIS OF MELANOMA USING A NEW 7-POINT CHECKLIST-BASED SOFTWARE

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Introduction: Dermoscopy has increased a lot the sensitivity of melanoma diagnosis. However, evaluation of pigmented skin lesions by dermoscopy is often extremely complex and subjective. To improve diagnostic accuracy of dermoscopy, methods based on automated analysis of pigmented skin lesions, have been developed.

Objective: To develop a new software (SW) able to identify all the criteria of 7-point checklist and to improve non expert in dermoscopy dermatologist's diagnosis when used during dermoscopic images examination.

Materials and Methods: We developed a diagnostic SW able to reproduce the expertise of a dermoscopy well-trained dermatologist and support the clinician in his dermoscopic diagnosis, according to a well-known and validated dermoscopic algorithm: 7-point checklist. Using a database of 270 dermoscopic images (64 melanoma, 72 atypical nevi; 134 benign nevi) of patients visited in our Departement from July 2011 to July 2014, we evaluated and compared the diagnostic accuracy of three expert dermatologist (EDs), three non-expert dermatologist (NEDs), the software (SW) alone and three non-expert dermatologist assisted by the SW during dermoscopic evaluation (NEDs+SW).

Results: The diagnostic accuracy of EDs was the best (94%). SW alone showed a diagnostic accuracy of 79%. NEDs significantly beneficiated of SW assistance during dermoscopic images evaluation, with an improving in diagnostic sensitivity (from 68% to 90%) without compromising specificity (also improved from 84% to 92%) and resulting in a gain in terms of diagnostic accuracy (from 80% to 92%). The Cohen's Kappa test allowed us to verify the statistical validity of our results, excluding the possibility that the variation in diagnostic accuracy between NEDs and NEDs + SW was purely casual.

Conclusions: The 7-point point checklist-based SW in computer-aided diagnosis of pigmented skin lesions can be an innovative tool able to increase diagnostic accuracy of dermatologists with low dermoscopic experience.

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