ABSTRACT BOOK
ABSTRACTS

24TH WORLD CONGRESS
OF DERMATOLOGY
MILAN 2019

A new ERA for global Dermatology
10 – 15 JUNE 2019
MILAN, ITALY

SKIN CANCER (OTHER THAN MELANOMA)

NON-INVASIVE ANALYSIS OF ACTINIC KERATOSIS USING NEAR INFRA-RED SPECTROSCOPY: PRELIMINARY DATA.

F. Veronese [1] - E. Zavattaro [2] - F. Molinari [3] - K. M. Meiburger [3] - S. Seoni [3] - V. Tarantino [1] - G. Landucci [1] - P. Savoia [1]

University Of Eastern Piedmont, Dermatology Unit, Dept. Of Health Science, Novara, Italy [1] - University Of Eastern Piedmont, Dermatology Unit, Dept. Of Translational Medicine, Novara, Italy [2] - Politecnico Di Torino, Biolab, Department Of Electronics And Telecomunications, Torino, Italy [3]

Introduction: Non-melanoma skin cancers are the most common tumor in the Caucasian population, and include actinic keratosis (AKs), which are considered in-situ squamous cell carcinomas (SCCs). Currently, the only way to monitor lesion progression (i.e., from AK to invasive SCC) is through an invasive bioptic procedure. Near infra-red spectroscopy (NIRS) is a non-invasive technique that studies hemoglobin (oxygenated-O2Hb/deoxygenated-HHb) concentration variations.

Objective: To demonstrate that AKs vascular response is different when compared to healthy skin, proving that the NIRS technique gives vasculature information in skin lesions, and could potentially be useful to monitor AKs progression.

Materials and Methods: A commercial device (NIRO® 200-NX, Hamamatsu) was used to acquire NIRS signals on AKs and a healthy skin area of patients (n=8), with the same acquisition protocol: baseline signals (1.5 min), application of ice pack near lesion (1.5 min), removal of ice pack and acquisition of vasculature recovery (1.5 min). The signals were filtered (bandpass 10mHz:250mHz) and analyzed in the very-low frequency (VLF=20mHz:60mHz) and low-frequency (LF=60mHz:140mHz) bands.

Results: The ratios between signals recovered at baseline and after ice application were calculated for the VLF and LF bands for both O2Hb and HHb. The O2Hb ratios were significantly lower in the AK lesions when compared to the healthy skin in both the considered frequency bands (paired Wilcoxon sign rank test, $p<0.05$). Contrarily, the HHb ratios did not show any statistically significant difference between the AK lesions and the healthy skin in either band (paired Wilcoxon sign rank test, $p>0.05$).

Conclusions: The use of NIRS frequency signal analysis shows a difference in vasculature response in AK lesion area and healthy skin area on the same patient. The use of this

24TH WORLD CONGRESS
OF DERMATOLOGY
MILAN 2019

International League
of Dermatological Societies
Skin Health for the World
ILDS

1885
Società Italiana di Dermatologia
(SIDeMaST)

ABSTRACT BOOK
ABSTRACTS

24TH WORLD CONGRESS
OF DERMATOLOGY
MILAN 2019

A new ERA for global Dermatology
10 – 15 JUNE 2019
MILAN, ITALY

technique, with future investigations and more patients, could be promising in the study of AK lesion progression, with the advantage of being a non-invasive technique.

24TH WORLD CONGRESS
OF DERMATOLOGY
MILAN 2019

International League
of Dermatological Societies
Skin Health for the World

1885

Società Italiana di Dermatologia
(SIDeMaST)