EURO PDT

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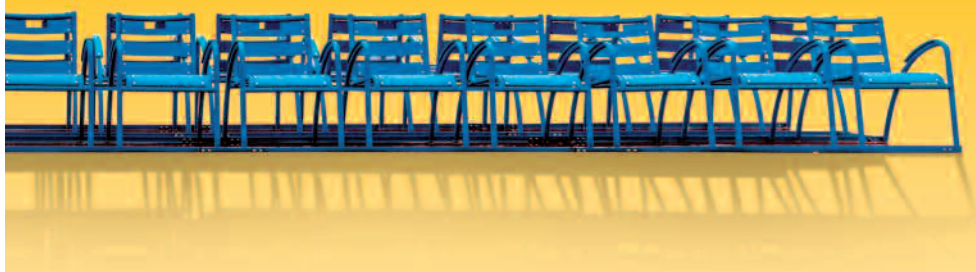
THE EUROPEAN SOCIETY FOR PHOTODYNAMIC THERAPY

NICE FRANCE | 16 & 17 MARCH 2018

PROGRAM



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CONGRESS VENUE

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Dear Colleagues.

It is with pleasure I wish you welcome to the 17th EURO-PDT Congress which is the largest PDT for Dermatology Congress in the world. Most of the participants are Europeans, but we also have participants from other parts of the world. We have put together a program with PDT experts presenting their latest hottest news in scientific and clinical PDT. We hope that you will like the program and that you will profit from it, scientifically and/or clinically. It also offers an excellent opportunity to discuss with colleagues, exchange views and share experience; and to enjoy company at the congress dinner.

We want to thank Galderma for its generous support to EURO-PDT and this congress. Without that support we could not have organized it. On behalf of us all, a great thank you to Galderma.

Prof. Lasse R. Braathen
President of EURO-PDT

Dear Colleagues,

Welcome to Nice! Welcome to the 17th Annual Congress of the European Society for Dermatology! I enjoy the sight of the empty line of chairs on the promenade here, as illustrated on our meeting book, reminding me of the calm at the end of a busy clinic! I wish you all the chance to escape the clinic over the two days of our meeting and enjoy high quality presentations by many of the experts in PDT from across Europe (yes, including UK !) and Brazil.

This year, we consider the place of PDT within disease-specific guidelines, provide updates on current studies, and consider the widening use of daylight PDT. We consider variations in protocol for delivery of PDT as well as opportunities around combination therapy.

We look forward to enthusiastic interactions as we digest the latest research, and later, digest hopefully an equally enticing congress dinner.

Thank you to all contributors and participants for taking the time to meet together for what we hope will be a stimulating meeting,

Welcome and enjoy!

Colin Morton

Congress President

14:00 Welcome and Introduction
Lasse R. Braathen, Switzerland

SESSION 1 EPIDEMIOLOGY AND GUIDELINES FOR AK AND NMSC

Chairs **Lasse Braathen, Switzerland / C.A. Morton, Scotland**

14:10 Epidemiology of skin cancers worldwide - 2017 update C01
Nicole Basset-Seguin, France

14:20 Do outdoor workers know their risk of NMSC? .. C02
Alexander Zink, Germany

14:30 New AKASI scoring of AK and its impact on clinical AK studies C03
Thomas Dirschka, Germany

14:40 Current AK guidelines C04
Colin A. Morton, UK

14:50 Prevention of AK and NMSC in OTR with DL-PDT: pilot study preliminary results C05
Isabelle Bernad, Spain

SESSION 2 NEW DIAGNOSTIC TOOLS AND BIOMARKERS

Chairs **N. Basset-Seguin, France / M.J.P. Gerritsen, The Netherlands**

15:00 How confocal microscopy can help the diagnosis of pink lesions C06
Elvira Moscarella, Italy

15:10 Newest biomarkers for AK and SCC C07
Lutz Schmitz, Germany

15:20 NMSC biomarkers predictive of PDT response C08
Silvia Rocío Lucena, Spain

15:30 Advancing light sources for PDT C09
Ewan Eadie, UK

SESSION 3 DAYLIGHT PDT - REAL WORLD EVIDENCE

Chairs **J. Lear, UK / E. Sotiriou, Greece**

15:40 Sesame European study: an observational study .. C10
Maria Concetta Fargnoli, Italy

15:50 German interventional study: Prophylactic effects of DL-PDT C11
Sigrid Karrer, Germany

16:00 French observational study C12
Jaques Savary, France

16:10 DL-PDT in Europe - An Auditorium-based survey C13
Rolf-Markus Szeimies, Germany

16:30 Break and poster session

SESSION 4 DAYLIGHT PDT - NEW DATA

Chairs **H.C. Wulf, Denmark / T. Dirschka, Germany**

17:00 DL-PDT for AK in upper extremities C14
Carlotta Fai, Italy

17:10 Home based DL-PDT for AK C15
Christophe Bedane, France

17:20 Fractionated PDT for superficial BCC C16
Rianne Gerritsen, The Netherlands

17:30 Can DL-PDT prevent new AK in immunosuppressed patients? C17
Claas Ulrich, Germany

17:40 DL-PDT in OTR pilot study results C18
John Lear, UK

17:50 Real life experience and clinical pictures with DL-PDT including long term data C19
Davide Basso, Italy

SESSION 5 COMBINATION TREATMENTS AND DL-PDT FUTURE PERSPECTIVES

Chairs **C. Ulrich, Germany / S. Ibbotson, UK**

SESSION 6 LIGHT SOURCES AND PRETREATMENTS PART 1

Chairs **Y. Gilaberte, Spain / R.E. Hunger, Switzerland**

SESSION 7 LIGHT SOURCES AND PRETREATMENTS PART 2

Chairs **C. Bedane, France / M. Haedersdal, Denmark**

10:30 Break and poster session

SESSION 8 cPDT FOR AK AND NMSC

Chairs **R.-M. Szeimies, Germany / A.-M. Wennberg, Sweden**

11:00 Painless PDT: a first retrospective case study with a new irradiation device C34
Conrad von Dobbeler, Germany

11:10 Treatment of superficial basal cell carcinoma with fractionated ALA-PDT versus MAL-PDT: a multicenter randomized controlled trial C35
Janneke Kessels, The Netherlands

11:20 PDT for Bowen's disease C36
Oscar Zaar, Sweden

11:30 PDT options algorithm including LIFT treatment C37
Stephan Alexander Braun, Germany

11:40 Clinical experience and pictures of PDT for all indications C38
Holger Petering, Germany

11:50 Early Prevention of new AK and NMSC in OTR: study update C39
Katrine Togsverdt Bo, Denmark

SATURDAY 17TH MARCH 2018 PROGRAM

SESSION 9 OTHER INDICATIONS

Chairs **M.C. Fargnoli, Italy / P. Calzavara-Pinton, Italy**

12:00 MAL-PDT conventional vs. daylight, 12-mo-follow up C40
Elena Sotiriou, Greece

12:10 Other indications PDT and albinism C41
Luiz Galvao, Brazil

12:20 Design and biological studies of PpIX polyamine conjugates for PDT C42
F Taba, Japan

12:30 Leishmaniasis of the ear treated successfully by PDT C43
Hanane Bay Bay, Morocco

12:40 PDT for difficult to treat dermatoses (alopecia areata and vitiligo) C44
Elvira Moscarella, Italy

12:50 PDT for aesthetic purposes - new protocols C45
Anne Le Pillouer Prost, France

13:00 PDT of AK with the Aktilite CL128: irradiance distribution and impact of light dose on the treatment efficacy C46
Elise Thecua, France

13:10 PDT: Off-label indications C47
Peter Bjerring, Denmark

13:20 Best poster - Best presentation Awards

13:30 Closing remarks

13:40 End of meeting

GLOSSARY

AK	Actinic Keratosis
ALA	Aminolevulinic Acid
BCC	Basal Cell Carcinoma
nBCC	Nodular BCC
sBCC	Superficial BCC
CR	Complete response
Fx	Fractional
DL-PDT	Daylight PDT
LED	Light-Emitting Diode
MAL	Methyl Aminolevulinate
NMSC	Non-Melanoma Skin Cancer
PDT	Photodynamic Therapy
PpIX	Protoporphyrin IX
SCC	Squamous Cell Carcinoma
SD	Standard Deviation
VAS	Visual Analogic Scale

ABSTRACTS

C1

Epidemiology of skin cancers worldwide- 2017 update

Nicole Basset-Seguin
Paris, France

NMSC are the most frequent cancers in adult patients. Their incidence is increasing worldwide both in men and in women but their mortality is stable or decreasing. The rising incidence is due to various factors such as UV or sun light exposure, increased outdoors activities, change in clothing style, increased longevity etc. In France the incidence has tripled between 1980 and 2012. Comparable increase are noted in other European countries. A continuous long-term increase of the NMSC incidence has been observed in Germany in the past decades and is expected to continue to increase.

Fair skin people and immunosuppressed patients are more at risk to develop NMSC. Some genetic disease also predispose to NMSC. UV is the major carcinogen involved in NMSC development. Whereas BCC is classically more related to intermittent sun exposure in childhood and SCC to chronic sun exposure, recently the increased risk of BCC in outdoor workers has been reported. Socio economical status seems to be strongly associated with a higher risk of BCC but not SCC. In conclusion both the NMSC risk will probably continue to substantially increase in the future because of increased UV exposure and an aging population. On the contrary, NMSC mortality at the same time will remain stable or even decrease.

C2

Do outdoor workers know their risk of NMSC?

Alexander Zink
Munich, Germany

Non-melanoma skin cancer (NMSC) was recognized in 2015 as an occupational disease for outdoor workers in Germany and poses an enormous socioeconomic burden. This has led to the continuous demand of evidence-based prevention. However, studies assessing the perceptions, beliefs and risk behaviour of outdoor workers as an essential prerequisite for prevention are rare. To assess perceptions, beliefs, and risk behaviours towards NMSC among different outdoor groups as a basis for the development of sustainable prevention programmes, we performed a cross-sectional study among 353 farmers, gardeners and roofers using a 20-question online survey. Of these, 153 (43.4%) reported never to use sunscreen during work. Wearing headgear and long pants were the most common sun protection measures. A low perceived skin cancer risk was significantly associated with poor use of sunscreen, long-sleeved shirts, sunglasses and headgear. Despite great evidence on NMSC risk in outdoor professions throughout the literature, high-risk groups in fact are not yet aware of the topic. Sustainable target group-oriented awareness prevention programmes are needed to lower the immense burden of NMSC.

Key Words:
Non-melanoma skin cancer, NMSC, outdoor workers, risk behavior

C3

New AKASI scoring of AK and its impact on clinical AK studies

Thomas Dirschka
Wuppertal, Germany

AK area and severity index (AKASI) is a new quantitative tool for clinical evaluation of actinic keratosis (AK) at the head. In clinical trials the severity of individual AK lesions is commonly graded using the clinical classification system of Olsen et al. or the histological classification of Röwert-Huber et al. Both of these systems share the limitation that they assess only the severity of individual lesions and do not take into account the entire area affected by AK.

Clinical trials on new AK therapies typically evaluate their efficacy based on AK lesion counts before and after treatment. The principal limitation of this approach is that in many AK lesions do not exist as discrete entities, but may rather coalesce across the affected field. This makes it difficult, even for expert dermatologists, to accurately assess AK lesion numbers. AKASI has been developed to overcome these problems. It represents the first attempt to quantitatively assess the severity of AK across an entire affected field. AKASI addresses the unmet need to for a more accurate scoring system. The results of a pilot validation study showed that AKASI and physicians` global assessment (PGA) are highly correlated.

AKASI demonstrates a useful tool to evaluate treatment outcomes and has meanwhile been implemented in a good number of clinical trials.

Key Words:
AK, AKASI, Score, Severity

C4

Current AK guidelines

Colin A. Morton
Stirling, Scotland, UK

We interpret the place of topical PDT in recently updated AK treatment guidelines developed by the British Association of Dermatologists. Whilst there remains inadequate evidence to justify treatment of all AK for the purpose of preventing malignant change, active treatment is encouraged, with an indirect benefit that lesions not responding to normal therapy may represent a subgroup with higher malignant potential. Current treatments can be divided into lesion or field therapies, or modalities suitable for both. PDT is particularly suitable for sites of confluent lesions and wider field therapy, receiving 'A' strength of recommendation on the basis of high level evidence including multiple well-conducted randomized comparison trials and meta-analysis. Studies indicate conventional PDT to be at least as effective as two freeze-thaw cycle cryotherapy, topical 5-fluorouracil, imiquimod and ingenol mebutate. Five RCTs in Europe and Australia confirm the equivalent efficacy of daylight and conventional PDT, but with superior tolerance and ease of use for large fields with daylight therapy.

Key Words:
AK, Guideline, PDT

C5

Prevention of AK and NMSC in OTR with DL-PDT: pilot study preliminary results

Isabelle Bernad
Pamplona, Spain

Leyre Aguado Gil, Jorge María Nuñez Córdoba, Pedro Redondo Bellón

Background: Daylight-photodynamic-therapy with methyl-aminolevuinate (DLPDT-MAL) could prevent the appearance of new actinic keratosis and nonmelanoma skin cancer lesions in organ transplant patients by repeated treatment of the cancerization field.

Methods: Design: Randomised, evaluator-blinded, intra-individual comparison trial. Interventions: 6 cycles of DL-PDT-MAL, 2 sessions 15 days apart at baseline, at 3 and at 9 months, or cryotherapy at baseline, at 3 and at 9 months. Differences were analysed using paired t tests.

Results: Of 24 patients enrolled, 21 completed the treatments. DL-PDT-MAL showed fewer new lesions compared with cryotherapy at 3 months [mean, 4.3 [standard deviation (SD), 3.3] vs 6.8 (SD, 4.9); p←0.001] and at 9 months [mean, 3.0 (SD, 3.3) vs 4.3 (SD, 3.4); p←0.037]. Patients tolerated DL-PDT-MAL better than cryotherapy at baseline, at 3 months, and at 9 months.

Conclusion: DL-PDT-MAL seems to be more efficacious in the prevention of new lesions and better tolerated than cryotherapy.

Key Words:
AK, DL-PDT, MAL cream, NMSC, Transplant patients

C6

How confocal microscopy can help the diagnosis of pink lesions

Elvira Moscarella
Naples, Italy

Giorgio Caterina Mariarosaria, Fulgione Elisabetta, Babino Graziella, Argenziano Giuseppe

Reflectance confocal microscopy (RCM) is a noninvasive tool that proved to be helpful in the diagnosis of nonpigmented skin tumours. RCM enables visualization of architectural and cytological structures at nearhistological resolution. It can improve the diagnostic accuracy of dermoscopically equivocal solitary pink neoplasms.

For management decisions, it is important to identify specific morphological clues that allow bedside classification of nonpigmented skin neoplasms into benign versus malignant and melanocytic versus nonmelanocytic. More specifically, the presence of a nested melanocytic proliferation at the dermoepidermal junction or dermis level permits the clinician to ascribe a given lesion as melanocytic; the identification of basaloid bright tumour islands is a key RCM feature for the diagnosis of basal cell carcinoma; and the presence of disarrayed epidermis along with small demarcated papillae is suggestive for the diagnosis of squamous cell carcinoma. Here we present a comprehensive description of the main RCM diagnostic clues for pink lesions that direct clinicians to the correct diagnosis.

Key Words:
PDT, vitiligo, alopecia areata

C7

Newest Biomarkers for AK and SCC

Lutz Schmitz
Bochum, Germany

Actinic keratoses (AKs) are regarded as early in-situ SCC which have the potential to progress into invasive tumors and subsequently metastasize. As the incidence is increasing steadily, reliable risk stratification of patients enabling physicians to make adequate treatment decisions are needed. However, current biomarkers do not predict a possible progression risk of AK lesions. They have commonly aimed at epidermal structures, but recent approaches indicate an important role of dermal factors such as cancer associated fibroblasts (CAF). Moreover, promising results have been reported regarding growth patterns, gene-expressions or –mutations in AKs. Among others, Fibronectin (FN1), Cadherin 3 (CDH3), Kallikrein related peptidase 6 (KLK6), Peptidase Inhibitor 3 (PI3), and kinetochore gene (KNSTRN) might allow for a risk stratification due to a specific algorithm taking underlying gene mutations of a distinct patient into account.

In case of progression, cutaneous SCCs are typically associated with low rates of metastasis and high survival rates. Nonetheless, metastatic cutaneous SCC is a significant health threat; up to 8800 individuals die each year of this disease. Thus, biomarkers especially for advanced tumors predicting their metastasizing potential or for metastatic tumors evaluating therapeutic outcome of different treatment approaches are desirable. For example, a recent study showed podoplanin to be an independent prognostic parameter for metastasis. Another study revealed elevated frequencies of CD8 T cells expressing PD-1, CTLA-4 and Tim-3 within tumor from perineural SCC patients.

Although these results offer a bunch of possible biomarkers, they have to proof benefits and reliability in clinical practice.

Key Words:
AK, SCC, biomarkers, growth pattern, gene expression, gene mutations

C8

NMSC biomarkers predictive of PDT response

Silvia Rocío Lucena
Madrid, Spain

Tamara Gracia-Cazaña, Ángeles Juarranz, Yolanda Gilaberte

Background: MAL-PDT is an excellent option for Bowen´s disease (BD) and Basal Cell Carcinoma (BCC) however, sometimes, resistance occurs.

Objective: Determine biomarkers of better/worse response to MAL-PDT. Material and methods: A retrospective study (2006-2015) of 68 BD and 390 BCC patients treated with MAL-PDT in Hospital San Jorge (Huesca, Spain) was performed. Sociodemographic, clinical, histological and immunohistochemical characteristics were studied. Additionally, the in vitro response of SCC (SCC-13 and A-431) and BCC (ASZ and BSZ) cell lines, resistant or not to MAL-PDT, was evaluated.

Results: In both types of tumours, BD and BCC, and also in cell lines, P53 expression was associated with good response to MAL-PDT. Higher expression of cyclin D1 and EGFR was associated with poor response to MAL-PDT in BD, whereas peripheral reinforcement for β-catenin was associated in BCC.

Conclusion: p53, cyclin D1, EGFR in BD and p53, β-catenin in BCC might be possible biomarkers to select those patients more suitable to be treated with MAL-PDT.

Key Words:
BCC, Biomarkers, Bowen disease, MAL, PDT, Resistance, Skin cancer

C9

Advancing Light Sources for PDT

Ewan Eadie
Dundee, UK

Paul O'Mahoney, Neil Haigh, Áine Davis, Sally H. Ibbotson,
Kenneth Wood, C. Tom. A. Brown

DL-PDT is an established, almost pain free, treatment for field change AK. However, it is limited to non-rainy days during months when the temperature is comfortable for patients. To overcome these limitations, a novel wavelength and uniformity tunable light source was developed. This proprietary technology replicated the spectral distribution of a protoporphyrin-IX (PpIX) weighted solar spectrum and delivered uniform illumination to both flat and curved surfaces.

The PpIX effective irradiance of the light source, measured at a distance of 10 cm, was 1.2 mWcm-2 and for a treatment duration of 2 hours, the PpIX effective radiant exposure was 8.3 Jcm-2. This light source provided uniform illumination (Coefficient of Variation (CV) 6%) over a large treatment area (35 cm x 20 cm) and could also be manipulated to improve uniformity on curved surfaces, such as the lower leg (initial CV 25%; final CV 8%).

Key Words:
DL-PDT, light source, uniformity, spectral irradiance, PpIX effective radiant exposure, AK

C10

European Observational Study SESAME

Maria Concetta Fargnoli
L'Aquila, Italy

The objective of this study was to collect real-world clinical data on the use of methyl aminolevulinate daylight-photodynamic therapy (MAL DL-PDT) for the treatment of face/scalp AK in Europe. A prospective, multicenter, noninterventional study was conducted in 6 European countries in patients receiving a single treatment of MAL DL-PDT for face/scalp AK. Patient-reported outcomes were assessed by questionnaires at baseline and at 3 months after treatment, efficacy at 3 months using a 6-point global improvement scale, and adverse events (AE) at each visit. Overall, 325 patients were enrolled from 52 centers, 314 of whom attended the 3-month visit. Most patients had multiple lesions (58.4% had →10 lesions), mainly located on the scalp (60.0%) and/or forehead (54.2%). AK were predominantly grade I (39.4%) or grade II (33.2%) and 10.5% of patients had grade III lesions. The proportions of patients and physicians that were overall satisfied to very satisfied with MAL DL-PDT were 80.4% and 90.3%, respectively. The vast majority of patients (90.0%) would consider using MAL DLPDT again if needed. Physician-assessed efficacy at 3 months was at least much improved in 83.5% of patients, with 45.9% requiring no retreatment. Related AEs were reported in 15% of patients. In conclusion, use of MAL DL-PDT for multiple face/scalp AK resulted in high levels of patient and physician satisfaction in clinical practice in Europe.

Key Words:
AK, MAL, DL-PDT, observational study

C11

German interventional study: Prophylactic effects of DL-PDT

Sigrid Karrer
Regensburg, Germany

In this multicenter, prospective, randomized, controlled, two-armed, observer-blinded trial, patients with a minimum of 5 mild-to-moderate AK on photodamaged facial skin are randomly allocated to either DL-PDT with MAL or cryosurgery. In the DL-PDT group, 5 treatments of the entire face are conducted over the course of 18 months. In the control group, lesion-directed cryosurgery is conducted at the first visit and, in the case of uncleared or new AK lesions, also at visits 2 to 5. The efficacy of the treatment is evaluated at visits 2 to 6 by documenting all existing and new AK lesions in the face. Cosmetic results and improvement of photoaging parameters are evaluated by means of a modified Dover scale. Primary outcome parameter is the cumulative number of AK lesions observed between visits 2 and 6. Secondary outcome parameters are complete clearance of AK, new AK lesions since the previous visit, cosmetic results, patient-reported pain, satisfaction with cosmetic results, and patient-reported quality of life. Safety parameters are also documented.

This clinical trial will assess the efficacy of repetitive DL-PDT in preventing AK and investigate rejuvenating effects.

Key Words:
DL-PDT, AK, prophylaxis, photorejuvenation, skin aging

C12

French observational study

Jacques Savary
Paris, France

This was a prospective investigation including, in the second half of 2016, in France, 154 dermatologists using daylight PDT.
Daylight MAL PDT showed its effectiveness and tolerance in the management of mild to moderate KA.
Simple to use, achievable even on cloudy days with only one exhibition session to the daylight. DL-PDT presents two advantages over MAL-PDT conventional
- the lack of specific equipment needed;
- the minimization of pain by the lengthening of the illumination time (about 120 minutes in the daylight versus 10 minutes with the LED in Conventional PDT).
Compared to other topical treatments for actinic keratosis, MAL-PDT has the advantage to treat in one sitting fields of cancerization.

Key Words:
DL-PDT, pain, AK

C13

DL-PDT in Europe - An Auditorium-Based Survey

Rolf-Markus Szeimies
Recklinghausen, Germany

Colin A. Morton, Lasse R. Braathen

Daylight-PDT with MAL (DL-PDT) for the treatment of actinic keratoses (AK) now has a history of more than 10 years, starting in an University-based institution in Copenhagen to now a world-wide registered drug and procedure which is also implemented in current guidelines of care of AK.

However, disease distribution and awareness, different health care systems, access of patients to specialists and economic aspects in Europe and elsewhere influence the distribution and offer within the variety of treatment options for AK.

During this 20 min session, we like to learn from you in the audience, representing Europe's best specialists on the use of PDT in their countries, how DL-PDT has influenced your behavior in the overall treatment of AK, if there are still unmet needs, both from medical or economical standpoints. Using modern smartphone-based technology (www.mentimeter.com), we like to engage you with realtime voting in this audience-based survey.

Key Words:
DL-PDT, AK, audience-based survey

C14

Daylight PDT for AK on forearms

Carlotta Fai
Lecce, Italy

Dario Fai

Very few studies have systematically investigated the effects of PDT on actinic keratoses (AKs) of the extremities, that appear to be more resistant and difficult-to-treat than AKs on the face and scalp. We report the preliminary data on the use of daylight-PDT using methyl aminolevulinate cream for AKs on the forearms. A retrospective analysis was performed by reviewing medical records of 22 patients with multiple refractory AKs located on the forearms. After the application of a 10% urea cream for 10 days, DL-PDT was performed with two sessions one week apart. The response of AKs was assessed at 3 months after the last session. The two-sided Wilcoxon rank signed test was used to analyse the change of the number of AKs; a p-value $\leftarrow$0.05 was considered statistically significant. A significant improvement was observed 3 months after treatment, with a mean complete response rate of 74% for total lesions (p$\leftarrow$0.0001).

Key Words:
AK, DL-PDT, forearms, extremities, MAL, response

C15

Home based DL-PDT for AK: the LUMIDOM study

Christophe Bedane
Limoges, France

DL-PDT can now be considered as a reference treatment for diffuse mild to moderate actinic keratosis.
The aim of the present study was to determine the feasibility and efficacy of home based DL-PDT.

16 patients have been included (15M/1F average age 76 yrs). The average number of AK was 25 Grade 1-2 (12) 1-3 (4) At day 1 the protocol was explained to the patient with a prescription of a keratolytic ointment (urea 30%) At day 15 AK were gently curetted, a template and photographs were taken The patient had a prescription of sunscreen and MAL. The treated area was clearly defined with the patient who was supposed to perform the PDT within the next four days. 14 patients were evaluable at M1 : the response rate was 87%. 9 patients were evaluable at M3 with a response rate of 88%. 80% presented with new AKs on the target zone. 7 patients were evaluables à M6 with a response rate of 88% (74,4% with new AKs).

The median VAS was 2. 12/14 patients had redness and mild burning . Only 1/14 had a persistent inflammation →3D. One patient presented with a facial zoster at Day 8.

Our results are very similar to previously reported results for DL-PDT.
Therefore we conclude that home based daylight PDT is a safe and efficient procedure and can be easily proposed to the patients for the treatment of mild to moderate AKs.

Key Words:
DL-PDT AK

C16

Fractionated PDT for superficial BCC

Rianne M.J.P. Gerritsen
Nijmegen, The Netherlands

K.P. Nguyen, G.J. Knuiman, W.A.M. Blokx, L. Hoogedoorn, T. Smits

MAL-PDT is highly effective for the treatment of superficial basal cell carcinoma (sBCC). However, current European MAL-PDT protocol requires at least two hospital visits, which is costly and unpractical for patients. Fractionated ALA-PDT has shown to be more effective as compared to a single illumination session. The aim of the present study was to study fractionated MAL-PDT in sBCC in a randomised multicenter pilot trial.

Material and methods: Twenty-one patients were included in the analyses. They were randomized into two groups. The first group (n=11) received illumination at 3 and 4 hours (20 + 55 J/cm2) after MAL-application. In the other group (10), illumination was performed at 3 and 5 hours (20 + 55 J/cm^2). The lesion response was evaluated at 3 and 12 months after treatment. The Mann-Whitney test and Fisher's exact test were used to compare continuous and categorical variables between groups, respectively.

Results: In the first group 80.0% showed a complete response at 3 months compared to 90,9% in the other group. At 12 months, 80.0% showed still a complete response in the first group, compared to 72.7% in the other group. There were no significant differences between these groups. Five treatment failures/recurrences occurred, of which 3 appeared to be mixed type BCCs. Conclusion: In this pilot study, MAL-PDT, using two illumination sessions on the same day, seems to be effective in the treatment of sBCC.

Key Words:
PDT, Superficial BCC, MAL, Fractionated illumination

C17

Can DL-PDT prevent new AK in immunosuppressed patients?

Claas Ulrich
Berlin, Germany

The increasing use of immunomodifying drugs for the treatment of autoimmune and autoinflammatory diseases significantly adds to the induction and, even more often, to the promotion of skin cancer.

Both effects have been thoroughly studied in the well established peer-group of chronic immunosuppression - solid organ transplant recipients (OTR). Paralleling decreasing rates of graft loss due to acute rejections and overall improving graft and patients survival rates, malignancies have become one of the greatest limitations of many transplantation programs. Skin cancers, and especially invasive squamous cell carcinomas dominating skin cancer statistics in OTR, are frequently more aggressive, than in immunocompetent patients.

However, primary as well as secondary prophylaxis (including modern field therapy measures for actinic keratoses) have shown a significantly protective impact on the development of skin cancer. An interesting approach to control NMSC in OTR is the use of DL-PDT. New evidence in the literature indicates that DL-PDT, either alone or augmented by laser pretreatment, as field-directed approach sufficiently controls the development and course of AK, thus minimizing the inhibiting side effects like pain and discomfort.

Key Words:
Skin cancer, immunosuppression, carcinogenesis, primary and secondary prevention, DL-PDT

C18

DL-PDT for the management of AK in renal transplant recipients: a pilot study

John Lear
Salford, UK

Organ Transplant Recipients (OTRs) are susceptible to premalignant lesions and keratinocyte skin cancer. Management can be challenging. There are few data regarding dPDT in OTRs. The aim of this study was to collect pilot data regarding efficacy and tolerability of dPDT for renal transplant patients. Hyperkeratotic (grade 3) AK were excluded from the study. Male participants (n=5) between 3-39 years post-transplant were recruited from dermatology specialist transplant clinics in the United Kingdom. Patients were treated with Dpdt as per protocol. All patients reported no pain during treatment. At 3-month follow up, 3/5 patients achieved complete clearance of the treated areas. One patient achieved 50% clearance but AK recurred in all sites after 6 months. One patient also achieved partial response. All participants expressed a preference for further dPDT in the future. This pilot study has indicated high levels of patient satisfaction and tolerability, although further data are required to determine efficacy.

Key Words:
DL-PDT, AK, OTR

C19

Real life experience and clinical pictures with DL-PDT including long term data

Davide Basso
Genoa, Italy

Ultraviolet photodamage is an increasing health issue, especially in fair skinned people living in southern countries.

Actinic keratosis (AK), the most common premalignant lesion, needs to be appropriately treated because of the risk of transformation into invasive squamous cell carcinoma.

Daylight photodynamic therapy (DL-PDT) is an efficacious technique for patients who present large areas of chronic actinic damage and easy access to sunlight.

DL-PDT is a simple, almost painless, and convenient treatment, addressing not only multiple visible Ak's but also subclinical ones, approved for grade I/II AK's on the face/scalp, with efficacy similar to conventional PDT.

The presentation covers real life experience with DL-PDT for various grades of photodamage, different sites involved (face, scalp, trunk) reporting side effects and results both in short and long term.

The results obtained confirm the data from literature and validate the efficacy of DL-PDT as a first line regimen for actinic field cancerization treatment.

Key Words:
AK, Actinic field cancerization, DT-PDT, MAL, Non melanoma skin cancer, Photodamage

C20

Physical pretreatments update

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Copenhagen, Denmark

Skin pretreatment has the potential to ensure adequate penetration of photosensitizing agents and to improve PDT efficacy.
Several techniques are being used to boost treatment outcomes for actinic keratoses, including fractional lasers, dermabrasion and microneedling.

This talk will provide an overview of existing preclinical and clinical data, focusing on efficacy rates and clinical procedures.

C21

Can Daylight PDT be improved with combination therapy?

Stefano Piaserico
Padova, Italy

Daylight photodynamic therapy (DL-PDT) is a treatment for immuno-competent patients with grade I or II AKs or fields of actinic damage on face and scalp.

One of the main limitation of DL-PDT is thick AKs. Moreover, DL-PDT shows efficacy rates approximately 20% lower on the extremities compared with the face and the scalp.

Only sparse data are available on the combination therapy of DL-PDT with other strategies in order to improve DL-PDT efficacy.

One study showed that sequential treatment with 5% 5-FU and DL-PDT is superior to DL-PDT alone for grade I–II AKs on the extremities.

Another study reported that ablative fractional laser combined with DL-PDT was significantly more effective than DL-PDT for AK treatment in organ transplant patients.

Finally, a recent study showed that pretreatment with calcipotriol prior to DL-PDT resulted in improved complete response rates compared with DL-PDT alone.

C22

Conventional PDT combined with vitamin D study results

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Sao Paulo, Brazil

Objectives: To compare the efficacy and safety of the combination of topical calcipotriol (CAL) before methylaminolevulinate (MAL)-PDT for AKs of the scalp versus conventional MAL-PDT in a randomized controlled-clinical trial.
Materials and Methods: Twenty patients with multiple AKs on the scalp were randomized to receive conventional MAL - PDT with previous curettage on one side of the scalp and CAL – assisted MAL-PDT applied once a day for fifteen days before the illumination with red light-emitting diode (37J/cm^2) on the other side. After three months, patients were evaluated for the clearance of AKs, side effects and histopathology before and after the procedure. Protoporphyrin IX (PpIX) fluorescence was measured before and after illumination on both sides.
Results: All twenty patients completed the study. Overall AK clearance was 92.07% and 82.04% for CAL-PDT and conventional PDT respectively ($p \leftarrow 0.001$). The AKs grade I showed similar response rate of 92.83% and 87.29% ($p=0.055$) respectively for CAL and MAL-PDT sides. However, AKs grade II showed more improvement on the CAL-PDT side (89.55%) compared with MAL-PDT (62.90%) ($p \leftarrow 0.001$). Before illumination, PpIX fluorescence intensity was higher on the CAL-assisted side ($p=0.048$). The treatment was more painful on the CAL-PDT side, although well tolerated. The mean VAS score was 5.40±1.43 on the CAL-PDT side and 3.95±0.69 on the conventional MAL-PDT side ($p=0.001$). Side effects such as erythema ($p=0.019$), edema ($p=0.002$), crusts ($p \leftarrow 0.001$) were more pronounced on the CAL-assisted side. Histopathological analyses were obtained from five patients and both sides showed improved keratinocyte atypia following PDT, with a slight more improvement on CAL- assisted side.
Conclusion: CAL-assisted PDT proved to be safe and more effective than conventional MAL-PDT for the treatment of AKs on the scalp. CAL pretreatment increased PpIX accumulation within the skin and may have enhanced the efficacy in this first human trial. As this is the first CAL-assisted PDT study in human skin, further and larger trials are needed to corroborate our findings.

Key Words:
Calcipotriol, PDT, PPIX, AK

C23

Reaching low but still sufficient PpIX levels without curettage

Hans Christian Wulf
Copenhagen, Denmark

Ida Marie Heerfordt, Giedre Bieliauskiene

Pulse PDT with removal of MAL after 30 minutes is the gentlest form of PDT. It results in lower PpIX accumulation than daylight PDT but with full effect on AKs. We investigated when PpIX formation in conventional PDT without curettage reached the PpIX level in pulse PDT with curettage.

Fourteen patients had two areas allocated to: (i) MAL application without prior curettage (÷CUR) and (ii) 30 minutes MAL incubation after curettage (+CUR). The PpIX levels were measured up to 6 hours after MAL application. No illumination was performed.

After 3 hours the median PpIX level in +CUR areas was 22 AU, representing the PpIX amount which can be photobleached in pulse PDT with full treatment effect, and the median PpIX level in ÷CUR areas was 20 AU, not significantly different from the level in +CUR areas.

PDT with 3 hours of MAL incubation without curettage might provide full treatment effect.

Key Words:
AK, Curettage, MAL, PDT, Protoporphyrin IX

C24

Longer MAL incubation versus curettage in daylight PDT. A clinical study

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Ida Marie Heerfordt

DL-PDT has become routine to avoid pain and reduce inflammation. However, curettage is still a prerequisite prior to MAL application to increase MAL penetration into the skin. Curettage is inconvenient and painful and may result in oozing and bleeding which might interfere with MAL absorption.

We investigated if curettage could be avoided by changing the illumination time from 60 minutes to 180 minutes after MAL application. By doing this the cure rate after 3 months was 85% and identical for both daylight PDT with curettage and without curettage. Pain and inflammation were not reduced by avoiding curettage.

Key Words:
AK, Curettage, MAL, PDT, Protoporphyrin IX

C25

Light emitting fabrics for PDT - The PHOS-ISTOS study

Serge Mordon
Lille, France

C. Vicentini, E. Thecua, P. Deleporte, F. Lecomte, A. Vignion, R.-M. Szeimies, L. Mortier

The planar shape of current light sources used for photodynamic therapy (PDT) of actinic keratosis lead to inhomogeneous light distribution on lesions located on curved parts, such as the scalp. Moreover, PDT is known to be very painful.

Resulting from a European project, PHOSISTOS, based on light emitting fabrics (LEF) was developed to overcome those drawbacks. This helmet consists of a 3D printed frame and a flexible structure composed of optical fibers. Besides its original design, the project aims to demonstrate that an illumination performed 30 minutes after MAL application (Metvix® - Galderma, Lausanne, Switzerland), with a low irradiance (1.33 mW/cm²) during 2h30, and a reduced fluence (12 J/cm²) is as efficient as the conventional protocol and less painful, in a comparative (split face intra-individual comparison), randomized, bi-centric, phase II study.

Preliminary results show that PHOSISTOS is effective in the treatment of AK with pain scores much lower than the conventional protocol (0.7/10 versus 7.3/10).

Key Words:
PDT, Optical fiber, Light emitting fabrics, AK, Clinical evaluation, Comparative study

C26

Ten efficient protocols for PDT of AK: are high effective light doses necessary to ensure the success of the treatment?

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Lille, France

Gregory Baert, Elise Thecua, Fabienne Lecomte, Claire Vicentini, Henry Abi Rached, Laurent Mortier

PDT is a well-established treatment for actinic keratoses. In Europe, the approved protocols involve irradiation with either the Aktilite CL128 or the daylight, while irradiation with the Blu-U is approved in the United States. Many other protocols involving irradiation with other light sources have also been proven to be efficient.

In this study, we compared the effective light doses from ten protocols with clinically proven efficiency. We have also investigated the relation between the effective light dose and the complete response rate.

Effective light doses from the protocols involving irradiation with daylight, white light or blue light are higher than those involving red light illumination. However, no association between the complete response rate and the effective light dose was found. Hence, preference shall be given to the protocols with high complete response rates and low pain scores regardless of the effective light dose.

Key Words:
PDT, AK, Efficient protocols, Effective light dose, Complete response rate

C27

Helmets for PDT illumination

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Antonio Harto-Castaño, Montserrat Fernández-Guarino, Bibiana Pérez-García

PDT is a wide extended therapeutic modality with an established protocol and determined light sources. In the last years, there have been advances in integrating new sources as daylight or home devices. There is a recent interest in developing new sources of light for PDT included or integrated into fabrics or body covers. This tendency started in the first decade of the 2000's (LED in fabrics like Ambulight®), and new several assays with LEDs and even optic fibers have been developed.

Relating head devices for PDT illumination there is scarce data bout this line of research, although there is increasing evidence of use with the advent of new head covers able for PDT (for example the PHOSISTOS® project).

In this communication, a review of current research and types of helmets or caps for the PDT procedure on the scalp will be discussed, with the presentation of a new study using low-level laser therapy (LLLT) head devices for PDT.

Key Words:
PDT, MAL, LED, AK, Home devices, Biophotomodulation

C28

Ambulatory PDT

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Topical photodynamic therapy (PDT) usually employs hospital-based LED irradiation. Improved access to PDT and convenience for patients is important and portable, low irradiance LED devices are appealing. The Photobiology Unit, Ninewells Hospital, Dundee and the University of St Andrews developed low irradiance LED devices for portable PDT (Ambicare Health Ltd). Initial experience indicated low pain scores, high efficacy and satisfaction. A randomised, prospective clinical trial comparing conventional and ambulatory PDT in 50 patients with Bowen's disease or superficial basal cell carcinoma (←2.4 cm diameter) was undertaken. This showed low pain scores for both conventional and ambulatory PDT and high clearance rates at one year, with no significant differences seen. This confirms that ambulatory PDT is an effective option for selected patients. The study also emphasises that size of the lesion is an important determinant for tolerance of PDT, with small lesions being readily treated relatively painlessly by PDT.

Key Words:
Ambulatory, BCC, Efficacy, LED, Pain, PDT

C29

Cost effectiveness of DL-PDT

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Background: The cost of topical treatments for actinic keratosis (AK) have never evaluated with respect to the actual cancerization field which requires treatment and the lesion response rate. Traditionally, evaluation in AK has been done in the context of patient response rate only.

Objective: To develop an economic model assessing the cost of topical treatment, per surface treated, per lesion and per lesion cleared for the management of AK in Italy.

Methods: Patient data was obtained from an observational study conducted in Italy, which included 100 patients with five or more mild or moderate lesions on the face and/or scalp. Efficacy of treatments available for AK, c-PDT and DL MAL PDT, DHA, IMQ 5% and InMeb was considered at three months and was derived from lesion response rates obtained from literature. The cost of each treatment was calculated based on the approval status of the drug, the literature data and the area that could be covered by 1 tube/sachet, i.e the cancerization area that required treatment.

Conclusions: The cost of treatment in actinic keratosis is highly dependent on the surface area treated and cost per successful lesion treated of each topical treatment should be calculated for cancerization area. Based on the analysis, daytime therapy with methyl aminolevulinate (MAL DL PDT) is, therefore, an effective treatment option for AK treatment with a favourable value for money profile.

C30

Different skin preparation alternatives to curettage

Hanan Osman-Ponchet
Sophia-Antipolis, France

Curettage is widely used to enhance penetration of photosensitizing agents prior to PDT. Different skin preparation alternatives to curettage suitable for large skin areas are emerging, such as skin preparation pad abrasion or microneedling. The objective of this work was to compare the effect of different skin preparation alternatives on dermal absorption of [14C]-methyl aminolevulinate (MAL) contained in Metvix® cream using an ex vivo human skin model.

Ex vivo human skin samples were pretreated with skin preparation pad, microneedling device or tape stripping and then treated with Metvixia® cream for 2.5 hours. Dermal absorption of [14C]-MAL was measured by liquid scintillation counting. Skin integrity was evaluated by measuring transepidermal water loss (TEWL), a good indicator of stratum corneum barrier function, and by microscopic examination of skin sections.

Preparation of the skin using different alternatives to curettage markedly increases both TEWL (2- to 3 fold increase) and dermal absorption of MAL (4- to 100-fold increase) with limited apparent damage of epidermis.

Key Words:
TEWL, PDT, MAL, Skin preparation

C31

Antimicrobial PDT

Yolanda Gilaberte
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There is an alarming increase in drug resistance amongst bacteria and other pathogens. Antimicrobial PDT (aPDT) represents an alternative treatment for infections. No reports of microbes becoming resistant to aPDT have been reported so far. In addition, some studies show the possibility of combining aPDT with conventional antibiotics exerting a synergistic antimicrobial effect.

Basic research proves that aPDT effectively photoinactivate bacteria, in planktonic and biofilms, all kind of fungi and yeast, virus and parasites. From a clinical point of view, even though aPDT does not have any approved indication yet, several studies support its use in onychomycosis and other local superficial mycosis, infected chronic ulcers, oral infections, suppurative hidradenitis, or leishmaniasis, among others.

This presentation will provide an update about the most remarkable basic and clinical studies which support the use of aPDT in the clinical setting and, which is more important, supports the research in this strategy to fight against infections.

Key Words:
Antimicrobial PDT, Cutaneous infections, Onychomycosis, fungi, bacteria, MAL, Aminolevulinic acid, Methylene blue

C32

Homebased DL-PDTin Spain

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Huesca, Spai

Manuel Almagro, Dolores Planas, Óscar Callen-García, Pilar Puertotas-Villacampa, Yolanda Gilaberte

DL-PDT has been considered an alternative to conventional PDT for a few years. There are published several studies and reviews that indicate that DL-PDT is a treatment with efficacy and safety results similar to conventional PDT. In addition, patient satisfaction has been significantly improved, since it is less painful, reducing the time required and health resources. In this way it has been consolidated in the treatment of AK grade I and II of the face and scalp. However, Daylight PDT procedure has the limitation of weather conditions, since it cannot be done on rainy or foggy days, or on days of low temperatures or extreme heat. In our clinical practice we have solved this problem by reprogramming the day of lighting or by having the patient perform Daylight PDT at home following some instructions. In this way we want to show our clinical experience, patient satisfaction and efficiency of homebased DL-PDT in Spain.

Key Words:
AK, DL-PDT, Homebased, MAL, PDT

C33

Ways to improve PDT tolerability

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Copenhagen, Denmark

The main side effects of photodynamic therapy are pain during illumination and erythema and crusting after treatment.

The introduction of daylight photodynamic therapy has resulted in pain-free field treatment of multiple actinic keratoses. Erythema and crusting may be less pronounced after daylight PDT compared to conventional PDT. The downtime associated with erythema and crusting can make patients reluctant to receive PDT.

We have introduced the concept of pulse-PDT in which MAL is applied for only 30 minutes under occlusion and then removed. Illumination with red LED light is performed after 3 h. Pulse-PDT reduced erythema after PDT of multiple AK on the face and scalp. The use of a super-potent corticosteroid before and just after pulse-PDT further reduced erythema. Pulse-PDT with or without corticosteroid induced less PpIX fluorescence than conventional PDT but no difference was found between treatment efficacies.

The use of topical potent vasoconstrictor brimonidine tartrate is another possible way to reduce PDT induced erythema.

Key Words:
PDT, AK, Erythema, Brimonidine tartrate

C34

Painless PDT: a first retrospective case study with a new irradiation device

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Lutz Schmitz, Thomas Dirschka

Background: Daylight mediated PDT (DL-PDT) has shown to be similar to conventional PDT with regard to safety and efficacy in AK treatment. Recent developments focused on painless devices that ensure standardized and supervised procedure. The "medisun daylight 9000 PC booth" provides a daylight-adjusted spectrum for PDT with a shortened treatment procedure. Irradiation time in the setting is only 1 hour.

Objectives: To determine safety, treatment efficacy and pain during PDT using the medisun booth.

Material & Methods: We performed PDT using the medisun booth in 10 patients. Severity of AK disease was assessed by calculating AKASI. Pain during treatment was assessed by use of a VAS. MAL was applied for 1 h prior to irradiation. Patients were then irradiated for 1 h. Follow-up visits for treatment outcome were performed 3 months after.

Results: PDT was almost painless (∅ VAS 1,18). All patients showed improvement of AK disease severity after 3 months (∅ AKASI V0: 5,06, ∅ AKASI V1: 1,9, Δ AKASI V0/AKASI V1: 62,45 %).

Conclusions: The medisun booth offers a feasible office-based treatment option to conduct PDT with a daylight adjusted irradiation spectrum. PDT was almost painless.

Key Words:
AK, Artificial daylight, Medisun booth, Painless, PDT

C35

Treatment of superficial BCC with fractionated 5-aminolevulinic acid PDT versus two stage metholaminolevulinate PDT: a multi-center randomized controlled trial

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Background: BCC is the most common type of skin cancer with growing incidence rates. 5-Aminolevulinic acid (ALA) and its methyl-ester (MAL) are currently used to treat sBCC with PDT. Previous research showed high efficacy of ALA-PDT using a 2-fold fractionated illumination scheme in which two light fractions of 20 and 80 J/cm2 are delivered, four and six hours after ALA application.

Methods: A randomized multi-centre trial in the Netherlands, to evaluate whether 2-fold ALA-PDT is superior to conventional MAL-PDT.

Results: 162 patients were randomized to either one of the study groups. After 12-months 6 treatment failures occurred after ALA-PDT and 13 after MAL-PDT. The 12-months cumulative probability of remaining-free-from-treatment-failure was 92.3% (95% CI [83.7-96.5]) and 83.4 (95% CI [73.1-90.0]), respectively (p=0.091).

Conclusions: The 2-fold ALA-PDT scheme resulted in fewer recurrences, although the difference was not statistically significant. It resulted in higher pain scores and more post-treatment side-effects compared to MAL-PDT.

Key Words:
PDT, 5-aminolevulinic acid (5-ALA), MAL, sBCC, Effectiveness

C36

Efficacy of PDT in Bowen's disease: a retrospective observational study in 423 lesions

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Background: Only a handful of studies have been carried out on the effectiveness of photodynamic therapy (PDT) for Bowen's disease (BD).

Method: In this retrospective study, all patients diagnosed with BD that were treated with PDT between January 1, 2002 and December 31, 2014 at Sahlgrenska University Hospital were assessed.

Results: 423 BD lesions were included in the study. The mean FU duration was 11.2 months (range 0.2-151 months). The complete response rate at the first FU visit was 77.5% for all BD lesions. During later FU visits, another 60 recurrences were observed, which resulted in a recurrence rate of 18.3 %. Thus, the overall clearance rate after FU was 63.4 % for all BD lesions. Significant risk factors for unsuccessful treatment in the present study were large lesion size (→2cm) and a single PDT session.

Conclusion: This study shows that PDT is a relatively effective treatment modality for BD.

Key Words:
Bowens's disease, PDT, SCC in situ

C37

PDT options algorithm including LIFT treatment

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Stephan Alexander Braun

Recently the introduction of daylight-activated photodynamic therapy (DL-PDT) and assisted-drug-delivery (Power-PDT) has advanced the concept of PDT. Over the past few years we have gained clinical experience with these techniques and have continuously modified our (DL-) PDT treatment algorithm: Depending on the extend of field cancerization, therapy-naive patients will initially be treated with conventional DL-PDT (multiple AKs) or Lesion Intensified Field Treatment (LIFT-) PDT (few AKs). Patients previously treated with DL-PDT that would tolerate a more intense reaction can be subjected to Power-DL-PDT. Lesions reluctant to PDT are excised for histologic evaluation. 5FU-pretreatment can visualize subclinical lesions and enhance PDT efficacy. Photorejuvenation is preferentially performed with Power-DL-PDT. For Power-PDT, lasers (CO2 or Er:YAG) are preferred over medical needling. In general, warm and sunny weather conditions are preferred, as we feel that this increases the clinical reaction and improves therapy outcome. Post-treatment erythema can be managed with brimonidine tartrate gel.

Key Words:
daylight-activated PDT, Lesion intensified field treatment, Laser, Needling, Post treatment erythema, Brimonidine tartrate

C38

Clinical experience and pictures of PDT for all indications

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Abstract not communicated.

C39

Early prevention of new AK and NMSC in organ transplant recipients: Study Updates

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PDT with methyl aminolevulinate (MAL) may prevent first onset of AK in organ transplant recipients, who are at high risk of AK and NMSC development.

Prophylactic conventional PDT for primary AK prevention was assessed in renal transplant recipients (RTR, n=25) with normal skin randomized to split-side MAL-PDT of the face, arm and dorsal hand, the contralateral side serving as an untreated control. Patients received PDT every 6 months for 5 years and had final followed up 1 year post-treatment.

Twenty RTRs were followed up for 6 years. In this period, 14 patients developed 76 AK in untreated skin and 21 AKs in PDT-treated skin. The median time to first onset of AKs was 30 months in untreated skin and 42 months in PDT-treated skin.

PDT was generally well tolerated, although erythema, edema and scaling occurred in most patients following the first 1-3 treatments.

Key Words:
Primary prevention, AK, Organ transplant recipients

C40

Conventional PDT vs Daylight PDT: 12-month follow-up

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Daylight PDT (DLPDT) is a simplified PDT procedure in which daylight is used for the photosensitizer activation. Based on this concept the treatment is less expensive, less time-consuming, less painful and better tolerated by the patients. Recent trials have demonstrated that DL-PDT achieves similar short-term response rates with conventional PDT (CPDT) in the treatment of nonhyperkeratotic AKs. Data, however, on long-term efficacy of DL-PDT are still limited. The presentation will focus on results of a multicenter intra-individual study with the objective to evaluate long-term efficacy of DL-PDT and compare it with that of CPDT. A total of 46 patients with 453 lesions completed the study. Clinical evaluation at the 12-month follow-up demonstrated complete lesion response of 71% for DLPDT and 73% for CPDT, which was not a statistically significant difference. According to the results of the study both treatments are similar in terms of long-term efficacy and recurrence rates. Being effective and better tolerated DLPDT may address some of the unmet needs in the treatment of AKs, especially in large areas.

C41

DL-PDT and albinism in a low latitude brazilian city

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Fortaleza, Brazil

Cyro Festa-Neto

Background: Fortaleza is a northern city in Brazil with a low latitude (3º 43' 2''S). In this part of the country, there are many individuals with oculocutaneous albinism (OCA) and actinic keratosis(AK) forming field cancerization.
Methods: Twenty-three patients with OCA and AK underwent two sessions of standard daylight photodynamic therapy (DL-PDT) with curettage, a month interval between them. A skin biopsy was carried out one week before the first treatment and ninety days after the second one, to study later histopathological and immunohistochemical parameters.

Results: The AK clearance rate was 51% after 1 session (T1) and 68% after 2 sessions (T2) four months after the first treatment(T1 and T2, $p \leftarrow .0003$ – Conover test).

Conclusion: DL-PDT presented a clinical efficacy lower than the population without OCA. A second session improved the clinical results. Histopathological and immunohistochemical parameters data analysis in process can explain better these results.

Key Words:
AK, Curettage, Daylight, Field cancerization, Oculocutaneous albinism, Phochemotherapy

C42

Design and biological studies of PPIX polyamine conjugates for PDT

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Nobuo Sakaguchi, Akira Onoda, Takashi Hayashi

Porphyrins based on the PPIX motif are used in many important systems such as pharmaceuticals and in photosynthesis. The synthesis of drugs with suitable solubility remains a key challenge in drug applications. Polyamine adducts allow a drug to specifically target cell structures in vitro.1,2,3 In this research we have synthesised hybrid polyamine porphyrins such as in Figure 1 to aid mitochondrial targeting and water-solubility. The compounds localise in HEP3B and HT29 cancer cells and the porphyrin with the longer amine chain localises mainly in mitochondria.3 The in vitro PDT efficacy as well as singlet oxygen quantum yields, after laser 660 nm irradiation, are strong whereas exogenous PPIX itself exhibits much weaker PDT effects. In vivo mice studies of the compounds are currently underway.

The Immunology Frontier Research Center at Osaka University is an institute with international researchers and publications in world-leading journals. We promote a positive work environment and cutting-edge biological research.

Key Words:
Mitochondrial, Polyamine, PPIX, Cancer, Singlet oxygen

C43

Leishmaniasis of the ear treated successfully by PDT

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Fez, Morocco

Sara Elloudi, Selma Benkirane, Zakia Douhi,
Salim Gallouj, Fatima Zahra Mernissi

Introduction: Cutaneous leishmaniasis (CL) is a parasitic infection characterized by significant clinical polymorphism. Unusual clinical aspects, sometimes on in the immunodeficient patient or associated with particular parasitic species. We report a particular aspect of cutaneous leishmaniasis of the ear in a patient under anti-TNFα treated by the Photodynamic therapy (PDT) successfully.
Observation: Patient aged 43, followed for haemorrhagic rectocolitis (HCR) for 4 years treated by Infliximab and Azathioprine, present since one and a half years of a pruriginous and slightly painful crustal lesion of centrifugal evolution in the right ear. The first cutaneous biopsy was in favor of pyoderma gangrenosum. The patient was on oral and injectable corticosteroids, antibiotics and local care with no improvement. The evolution was marked by the installation of a perichondritis and the appearance of new plaques and nodules ulcerated in the face and neck. Dermoscopic examination revealed tears, star-white appearance, red areas, polymorphous vascularization, scales, skulls and ulcerations in all lesions suggestive of leishmaniasis. This diagnosis was confirmed by histologically. The patient was on intramuscular Glucantime for 1 month, Chlortetracyclin 3% ointment and Gentamycin 0.5% ointment with partial response. Because of the persistence of stigmas of infection and the push of HCR, the treatment by PDT was indicated with good evolution. Indeed, there was complete regression of the lesions clinically and dermatologically with a satisfactory aesthetic result.
Discussion: Leishmaniasis are zoonoses caused by parasites of the genus Leishmania. They represent a group of diseases that are widespread on the surface of the globe, and are very common in Morocco. Depending on the causal species and the immune response of the host, there are different clinical forms: visceral, cutaneous and mucocutaneous. The diagnosis must be evoked in case of persistent skin lesions, ulcerated or nodular, an endemic area. It is a microscopic or molecular examination of a sample of the lesion obtained by scraping or biopsy. Dermoscopy currently facilitates diagnosis.
Experimental studies have shown that anti-TNFα can promote the occurrence of leishmaniasis which illustrates our case. The therapeutic approach depends on the species of leishmania and the clinical presentation, it has appealed in our context to intramuscular Glucantim, with Chlortetracycline ointment 3% and gentamycin 0.5% ointment, as well as dynamic phototherapy with good evolution.
Conclusion: In case of chronic ulceration on a regional discovery, resistant to non-specific treatments, cutaneous leishmaniasis should be sought. The dermoscopic examination is a step that comforts the diagnosis and evaluates the therapeutic efficacy, especially in particular contexts as was the case of our patient. Intramuscular glucantivity combined with PDT is a good therapeutic alternative for multi-lesional leishmaniasis, with peri-orificial and resistant localization. A satisfactory aesthetic resultwas mentioned.

Key Words:
Leishmaniasis, Ear, PDT

C44

ALA-PDT as an alternative therapeutic option in some dermatological diseases and imperfections: our experience

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Background: PDT is one of the most innovative and technologically advanced dermatological the-rapies currently available. We report our experience using photodynamics with methylaminolevulinate or 5-ALA 10% as photosensitizers for treatment of dermatological diseases such as alopecia areata of the scalp and vitiligo of the body.

Patient and methods: 16 patients with severe alopecia areata were treated every three weeks. The outcome was evaluated at 6 and 12 months.Clinical, dermoscopic and confocal microscopy pictures were performed at T0, after 6 months (T1) and after 12 months (T2). The distance between sessions was 21 days and after applica-tion the metvix kept in occlusion for 3 hours. 10 patients with vitiligo were treated with needling on a part of the body, followed by 5% ALA, kept in occlusive for 2 hours. Clinical and demoscopic pictures were performed at T0 and after 2 months, Each patient underwent 3 treatments spaced each of three weeks.

Results: For alopecia areata 10% of the patients showed a partial re-growth of the hair, in 20% a total regrowth of the hair . For vitiligo 40% of patient obtained a total repigmentation of the lesions treated, 20% a par-tial repigmentation.

Conclusions: PDT shown to be a valid alternative to classic therapies to treat alopecia areata and vitiligo.

C45

PDT for aesthetic purposes - new protocols

Anne Le Pillouer Prost
Marseille, France

Topical PDT, recognized as an effective way to manage actinic fields of cancerization is also now acknowledged to be a safe and efficient option to rejuvenate and remodel UV-damaged skin. Substantial data from the literature (in vitro, on animal, on human immunocompromised or immunocompetent), have led experts write recommendations which state that photodynamic photorejuvenation (PR-PDT) has grade B efficacy with a proof level I. Clinical studies showed that tone, lentigos, skin roughness, texture and fine wrinkles improved. More recently paraclinical studies with histology, immuno-histo-chemical evaluations have confirmed a clear remodeling effect in the dermis.

Since the first publication of the interest of Intense Pulsed Light -PDT (IPL-PDT) versus IPL alone sessions by Ruiz Rodriguez in 2002, different protocols have been developped. The illumination is traditionaly of low intensity and prolonged duration, allowing the photochemical reactions themselves to occur, as with continuous wave lamps, light emitting diodes (LEDs) of different colors (notably blue or red) or natural daylight. But undeniably positive clinical results have also been obtained with IPLs and pulsed dye laser with high intensity and brief millisecond pulse durations.

New emergent protocols for facial and extra-facial rejuvenation will be described:

- Daylight PR-PDT
- Intensified PR-PDT : Ablative fractional laser CO2 or Er:YAG, microneedling or sand-paper abrasion
- Combined modalities
  - Intensified-daylight PR-PDT
  - Intensified-IPL PR-PDT plus or less LED or daylight
  - Non ablative fractional laser and blue light (plus temperature room elevation)

Though favorable results are not lacking, many problems remain to be resolved in daily practice: optimal protocol type ? number and frequency of sessions necessary to maintain the results that often disappear after a few months or years ?...

C46

PDT of AK with the Aktilite CL128: irradiance distribution and impact of light dose on the treatment efficacy

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PDT illumination devices provide flat illumination. The objectives of this study were to evaluate the heterogeneity of light during illumination of AK of the scalp with the Aktilite CL128 and the relationship between the efficacy at 3 months and the light dose. Average irradiance over the 117 lesions included was 32.2 mW/cm^2 (SE 17.1 mW/cm2). The response rate at 3 months was 59%. AK in complete response received an average irradiance of 31.1 mW/cm^2 (SD: 17.0 mW/cm^2) while 33.7 mW/cm2 (SD: 17.3 mW/cm^2) were achieved for resistant AK.

This study confirms heterogeneity of light during treatment of AK of the scalp and forehead with the plan devices and suggests that the light dose required for the success of PDT in AK is probably low. This will have an impact in terms of tolerance and for development of new illumination devices.

Key Words:
Aktilite CL128, Irradiance, Light dose, AK, Treatment responses

C47

PDT: Off-label indications

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Off-label use is the use of pharmaceutical drugs for an unapproved indication or in an unapproved patient population. Off-label use is legal unless it violates ethical guidelines or safety regulations.

PDT enhances dermal remodeling and resolves chronic inflammation, and PDT has been used for numerous off-label indications, amongst those haemangiomas, vascular malformations, psoriasis, acne vulgaris, verruca vulgaris, rosacea, hidradenitis suppurativa. Aminolevulinic acid (ALA) and the methyl ester of aminolevulinic acid (MAL) are the most used topical photosensitizers in off-label PDT but also dyes as rose bengal, acridine orange, eosin are being used in clinical settings.

ALA and MAL PDT is a safe and effective modality for off-label treatment of many dermatological conditions. With the introduction of daylight PDT the treatment is practically painfree, downtime is minimal and the technique is suitable for patients of all ages and lifestyles.

Key Words:
Off-label indications, Alternative use, PDT

POSTERS

P1

Efficacy assessment of combination of microneedling and DL-PDT for AK

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Background: DL-PDT with methlaminolevulinate cream (MAL) is approved for the treatment of facial actinic keratosis(AK) with clearance rates from 65-88,5%. Skin preparation techniques such as microneedling(MN) have been used for a greater efficacy.

Methods: Ten patients with multiple AK grade I-II were randomized to receive the standard protocol with curettage of DL-PDT on one side of the face and DL-PDT combined with 0,5-mm-length MN on the other side. After 30 days, a second session of DL-PDT was repeated on the side that was performed the standard protocol.

Results: At day 30, the average AK clearance was 64,36%, without difference between the two sides (p= .853)- Mann-Whitney test. A second session of standard DL-PDT did not increase the clinical results (p= .0921)- Friedman test.

Conclusion: MN-assisted DL-PDT was a safe and effective method, but without superior clinical results than one session of standard DL-PDT protocol.

Key Words:
AK, Curettage, Daylight, Microneedling, MAL, PDT

P2

Indoor Daylight-like PDT using low-level laser therapy (LLLT) head devices. The "Cap-PDT" study

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Introduction: DL-PDT is an increasing costeffective and non-painful treatment for actinic keratoses (AK), although it needs time and specific weather conditions to perform. In this study we intended to analyze the effectiveness of low-level laser therapy (LLLT) devices as light sources for PDT.

Material and Methods: We performed an experimental study with 27 patients (with AK-I, II) that underwent one 15-minute session of PDT with LLLT cap-like devices after photosensitizer application. The main variable was AK count. We also measured AK quality of life index (AKqOL). AKs were mapped in the patients' scalps for 2-month follow-up. In 5 patients pre-post biopsies in exact scalp positions were performed for study. Wilcoxon statistical analysis was used for comparison.

Results: All patients experienced a global reduction of AKs (p<0.0001), AKQoL (p=0.034), and a normalization of skin biopsy in the selected individuals.

Conclusion: LLLT-PDT can be an effective modality for PDT.

Key Words:
AK, Atypia, Biophotomodulation, Low-level laser therapy, MAL, PDT

P3

Extensive and inoperative BCC on the face treated with PDT

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Background: PDT) is a well-established treatment for AK, superficial BCC and Bowen's disease. In recent years, it has been considered for some locally advanced cutaneous tumors. Reason for communication: Report an inoperable BCC case on the face with good response to PDT. Communication report: A 60 year-old female patient, who had microstomia after surgery and radiotherapy for a squamous cell carcinoma on her tongue, presented an extensive and recurrent superficial BCC on her right cheek.

She had already undergone vismodegib treatment with good response, but the lesion relapsed 14 months after its withdrawal. Six conventional PDT sections with 16% methylaminolevulinate (MAL-PDT) were performed, with reduction of lesion size, without aesthetic or functional impairment.

Discussion: Although advanced disease is rare, BCC may progress to situations in which surgery and radiotherapy are contraindicated. MAL-PDT presented itself as a well-tolerated alternative, easy to perform and with excellent results.

Key Words:
BCC, MAL, Photochemotherapy, PDT, Photosensitizer, Skin cancer

P4

Liquid-based cytology in diagnostics of BCC and AK - preliminary results of a prospective, blinded, single-centre pilot study

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Background: Liquid-based cytology (LBC) is fast, easy and inexpensive in use and may prove beneficial as a diagnostic method of non-melanoma skin cancer ahead of non-invasive treatment methods.

Aims: To evaluate the quality of LBC test as a diagnostic tool for basal cell carcinoma (BCC) and actinic keratosis (AK).

Methods: Patients with primary, histologically verified BCC and AK for PDT were recruited. After initial light curettage a Medscand®Cytobrush was for used to collecting cells from the tumours. Cytodiagnostic results were compared with the diagnosis in the histopathology report (the gold standard).

Results: A total of 24 lesions (12 BCC, 12 AK), so far, were included. Sensitivity and specificity of LCB for diagnosis of BCC and AK was 67%, 97% and 58%, 83%, respectively.

Conclusion:
The results suggest that LBC using ThinPrep®Pap test and Medscand®Cytobrush following curettage has a too low sensitivity for routine diagnostic use in BCC and AK.

Key Words:
Cytology, Diagnostics, BCC, AK, Non-invasive treatment

P5

Skin needling to enhance ALA 5% penetration in the treatment of Vitiligo

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Vitiligo is a common autoimmune hypomelanotic disorder with a considerable psychological impact on the patient quality of life. Managing vitiligo is a difficult challenge that requires long-term treatment with a number of topical and systemic agents, which often result in suboptimal results.AIMS: We aim to compare the combined treatment of skin needling and ALA - PDT with that using skin needling alone in the treatment of vitiligo in order to evaluate the use of microneedles as a means to enhance the drug's transdermal penetration and its effectiveness.

Methods: 5 patients were treated every 3 weeks with combined skin needling and ALA 5% -PDT on one side of the body and 5 patients were treated with needling alone on one side of the body for a total of 3 treatments for each one. Outcome was evaluated for two months. We obteined clinical and dermoscopic pictures at T0 and after 9 weeks
Patients treated with needling + PDT underwent 10% 5 ALA topic application followed by needling.
In group treated with combined therapy, 10% 5 ALA occlusive dressing held 2 hours went before PDT application. Needling enhance 10% 5- ALA skin penetration .

Results: Patients received only needling showed a partial improvement in 20% of cases. Patients received combined therapy showed total repigmentation in 40% of cases.

Conclusions: Our study suggests the potential use of combining skin needling with ALA-PDT to achieve better results in vitiligo treatment compared to skin needling alone.

P6

Skin needling to enhance 5- ALA 10% penetration in the treatment of Alopecia Areata

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Alopecia is an autoimmune disease that alters one's appearance. Some define it as a cosmetic disease despite evidence that substantial psychosocial burden is associated with it.
Managing alopecia is a difficult challenge that requires long-term treatment with a number of topical and systemic agents, which often result in suboptimal results. Often and willingly some patients are eager to try unconventional therapies, despite the very limited research evaluating their safety and efficacy. We aim to compare the combined treatment of skin needling and 5-ALA - PDT with that using 5-ALA -PDT alone in the treatment of alopecia in order to evaluate the use of microneedles as a means to enhance the drug's transdermal penetration and its effectiveness.

Methods: 10 patients received skin needling and 5-ALA -PDT every 3 weeks and 10 patients only 10% 5-ALA for 10 sessions. Outcome was evaluated for 12 months. Clinical, dermoscopic and confocal microscopy pictures performed at T0, after 6 sessions (T1) and after 10 sessions (T2).
Patients treated with needling + PDT underwent 10% 5 ALA topic application followed by needling.
In group treated with combined therapy, 10% 5 ALA occlusive dressing held 2 hours went before PDT application. Needling enhance 10% 5- ALA skin penetration.

Results: Patients received only needling showed a partial improvement in 10% of cases. Patients received combined therapy showed total regrow in 20% of cases.

Conclusions: Our study suggests the potential use of combining skin puncture with 5-ALA-PDT to achieve better results in the treatment of alopecia compared to 5-ALA-PDT alone.

P7

Study of the treatment of AK and cutaneous field of cancerization with DL-PDT: clinical, histological and confocal microscopy evaluation

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AK are the most common pre-malignant lesions of the skin. Some author even characterize AK as in situ squamous cell carcinoma (SCC). Although AKs could have an spontaneous regression, some have a tendency of progressive thickening evolving in up 0,025%-20% per year to SCC. In general, AKs are located in photodamaged areas and make part of an ongoing field of disease known as field of cancerization.

DL-PDT is a well established therapy option for treating AKs in the scalp and the face, it is also safe and effective for the treatment of fields of cancerization.
The goal of this ongoing study is to evaluate the efficacy of this treatment comparing clinical, histopathological and confocal images, before and after DL-PDT.

Twenty-five patients from the Dermatology outpatient clinic of University of São Paulo enroll this study. Both sex patients with photodamaged skin with 6 or more AKs in the face were the inclusion criteria. CM study and Digital photographies of field of cancerization should be taken before treatment, in the day of the DL-PDT and after 3 months of treatment. The most photodamaged area should be photographed and biopsied by a 2 mm punch. Clinical reassessment should be done after 1 month. Three months after the DL-PDT the area will be evaluated with CM and the second biopsy performed at the same area 0,5 cm away from the previous place.

There are no studies in Brasil neither making a reliable clinical-confocal correlation nor histopathological comparison with CM. Therefore, we understand the importance of the HP and CM study of AKs and field of cancerization before and after DL-PDT.

Key Words:
AK, Confocal microscopy, DL-PDT

P8

Successful treatment of recurrent nodular BCC with MAL-PDT

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Background: Topical PDT is an effective therapeutic modality for AK and certain types of non-melanoma skin cancers, with excellent safety and cosmetic outcomes. There is limited data on the efficacy of PDT for recurrent basal cell carcinoma (BCC).

Case Report: A 54-year-old Caucasian man who had a past history of nodular BCC on his nose that was surgically excised 3 years ago presented with a new red patch on his nose at exactly the same site, which he had noted in the past 2 months. A punch biopsy confirmed the diagnosis of nodular BCC. He was treated with two sessions of methyl aminolevulinate-PDT (MAL-PDT) using 630nm red light irradiation one week apart. There was complete resolution with excellent cosmesis at 3 months, and clearance was sustained at 12 months post-treatment.

MAL-PDT may be considered for recurrent nodular BCCs, particularly in exposed anatomic sites where cosmetic outcome is a key consideration.

Key Words:
PDT, Nodular BCC, MAL, Recurrent

P9

Sequential use of PDT and Imiquimod 5% cream for Extramammary Paget Disease

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We present a 48-year old woman with an one year history of histologically confirmed Paget Disease located on the anogenital skin. After having excluded associated malignancy and as wide local excision could lead to anogenital mutilation and functional impairment we decided to proceed with the combination of PDT and imiquimod cream 5%. Our patient was treated with 3 PDT sessions, performed 15 days apart, followed by three times per week application of imiquimod 5% cream for 6 consecutive weeks. Complete clinical and histological cure was achieved 3 months after treatment. The patient remained free of recurrences at the 6- and 12-month follow-up. Close monitoring for recurrences is scheduled. As use of PDT for extramammary Paget disease has up to now achieved only palliative results combined use of PDT and imiquimod could be an attractive alternative that deserves further investigation.

P10

Vulvar bowen disease treated successfully by PDT: about two cases

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Introduction: Bowen Disease (BD) is a carcinoma in situ, and its vulvar location is a therapeutic challenge. Dynamic phototherapy (PDT) is an interesting therapeutic strategy thanks in particular to the original properties of tumor selectivity.
We report the cases of two patients effectively treated with PDT and Imiquimod 5% as a therapeutic adjunct for vulvar (MB).
Observation: Case 1: Patient 57 years old, diabetic and hypertensive, who had a pruritus vulva evolving since 1 year. The dermatological examination had objectified a whitish coating, not decolable, sitting at the level of the small lip. The dermoscopy showed in both patients a homogeneous glomerular vascularization in favor of a bowen disease, confirmed by the histological examination. The patients had benefited from a conservative treatment with 2 sessions of PDT with as photosensitizing agent the methyl aminolevulinate (Metvixia) at a rate of 100 J / cm2 at one week intervals. The suites were simple. An addition by Imiquimod 5% for 3 months was introduced.
Case 2: A 47-year-old patient with no notable pathological history who had vulvar pruritus with a history of 1 year. The dermatological examination showed a plate at the level of the large lip, 6 cm, erythematous well limited, regular edges surmounted by a whitish coating, non-peelable, taking almost the entire plate.
After 3 months of treatment, the histological control, performed in the 2 patients had not objectified tumor cells. The decline is 2 years in the first patient and 6 months in the second.
Discussion: (BD) or vulvar carcinoma in situ usually manifests as a single, proliferating, leucoplastic or erythroplasic plaque that extends centrifugally very progressively without central healing. There are several therapeutic modalities, surgical, local, and non-surgical ablative. The therapeutic decision takes into account the size and number of lesions, and the age of the patient, but also the experience of the practitioner and the choice of the patient as well as his immune status. Although it has the advantage of histological control, surgery at the vulvar level can be debilitating and mutilating with severe consequences. Dynamic phototherapy (PDT) is increasingly used to treat superficial cancers of the skin. It acts through a photosensitizer that triggers a phototoxic reaction that produces singlet oxygen and other free radicals with cytotoxic and vasculotoxic effects leading to necrosis and cell apoptosis.
Several cases of bowen disease favorably treated with PDT have been reported but few of them related to the genital location. PDT allowed a non-invasive treatment, a satisfactory aesthetic and functional result. We opted for a supplement by Imiquimod due to its immunomodulatory action to potentiate the effect of PDT and minimize the risk of recurrence. We specify that treatment with Imiquimod alone requires a more aggressive treatment, of prolonged duration and offers only partial results in the literature.
Conclusion: PDT is an effective and non-invasive therapeutic method for large bowen vulvar disease, providing a good aesthetic and functional outcome, but further studies are needed to develop its use in the treatment of Bowen's Disease in the vulvar area with and without therapeutic adjuncts.

Key Words:
Bowen vulvar disease, PDT, Imiquimod.

P11

Pain relief during PDT for AK with a new irradiation protocol

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Background: A notable downside of photodynamic therapy (PDT) is the amount of pain that accompany the treatment.

Methods: In this prospective randomized study, patients were treated using a ALA 78 mg/g gel for symmetrically distributed actinic keratosis. One side was illuminated with the Aktilite® CL-128 lamp and the other side with the RhodoLED® lamp in which the light intensity gradually increased to a maximum of 60%. Both sides received a total light dose of 37 J/cm^2. Pain during the treatment was measured using a visual analogue scale. The clinical effectiveness of the two treated sides was assessed after 12 weeks.

Results: Illumination with the gradually increasing light intensity resulted in a decrease of the median VAS score by 1.1 points. Clearance rate were similar between the two lamps.

Conclusion: Minimising the light intensity during the illumination phase of PDT reduces pain, while still preserving a high clearance rate of AKs.

Key Words:
AK, Pain reduction, PDT

P12

5-aminolaevulinic acid nanoemulsion (BF-200 ALA) is more effective than MAL in the DL-PDT of AK: A prospective, randomized, non-sponsored, multicenter split-face study of 69 patients and 767 treated AK with 12-month follow-up

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DL-PDT with MAL is well-established for treating thin AK. This non-sponsored multicenter trial compared efficacy of BF-200 ALA and MAL in DL-PDT of AKs.

69 patients with altogether 767 grade I-II AKs symmetrically on face or scalp were treated in three study centers in Finland. A single treatment of DL-PDT was given in a randomized split-face design. Blinded observer assessed clinical outcome at 12 months.

BF-200 ALA cleared 299/375 (79.7%) and MAL 288/392 (73.5%) of all AKs ($p = 0.041$, Fisher's exact test). The clearance rates of grade I AKs were 232/278 (83.5%) and 238/299 (79.6%) ($p = 0.241$) and grade II 67/97 (69.1%) and 50/93 (53.8%) ($p = 0.037$) for BF-200 ALA and MAL respectively. In per patient (half-face) analysis lesion clearance was better for BF-200 ALA ($p = 0.008$, Wilcoxon's test).

Our results indicate BF-200 ALA more effective than MAL in DL-PDT.

Key Words:
AK, BF-200 ALA, DL-PDT, MAL, Multicenter, Split-face

NOTES

NOTES

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