Laser Europe 2012

10-12th May 2012
The Cumberland Hotel, London, UK

Convened by

European Laser Association

Hosted by

British Medical Laser Association
30th Annual Conference

In association with

Sociedad Española de Láser Médico Quirúrgico (SELMQ)
(20th Annual Conference)

SOCIEDAD ESPAÑOLA
DE LÁSER MÉDICO
QUIRÚRGICO

ELA Member Societies
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Rafael Serena, (SELMQ), Spain
Philip Wright, (BMLA), UK

Contents

Welcome

It is a pleasure to welcome you to London on the occasion of the 30th Annual Conference of the British Medical Laser Association when we are joining together with our Spanish colleagues from Sociedad Española de Láser Médico Quirúrgico to host Laser Europe 2012.

The use of lasers and other sources of optical radiation is increasing rapidly, transforming the way we do medicine.

A quick look at the scientific programme will reveal the array of talent that has been assembled. As well as experienced experts who are well recognised in the field, we are equally delighted to welcome young clinicians and scientists. It is the energy and vibrancy of youth that constantly challenges orthodoxy and focuses our attention on new techniques and novel ideas.

This meeting has been convened by the European Laser Association, and we extend a warm welcome to all our colleagues from around the world. This conference builds on the success of the joint meeting of British and Spanish Societies which was held in Tarragona in 2010.

We hope that you will enjoy a warm welcome and that you will have an enriching experience during your few days at the conference. During 2012, London will host some major events, including the Olympics, but our vision is that the one event that will eclipse them all will be Laser Europe 2012.

On behalf of those who have given of their time voluntarily to make this meeting a success, I extend a warm welcome and hope that you enjoy your time with us at Laser Europe 2012.

Yours sincerely

Professor Harry Moseley
Hon President BMLA/President of Laser Europe 2012

Bienvenida

Es un placer daros la bienvenida a Londres en ocasión la 30º Congreso Anual de la British Medical Laser Association, donde junto con nuestros colegas españoles de la Sociedad Española de Láser Médico Quirúrgico seremos tus anfitriones en Laser Europe 2012.

El empleo de los láseres y otros medios de radiación óptica, incrementa día a día, transformando la forma de ejercer la medicina. Una rápida mirada al programa científico revelará la lista de profesionales que hemos reunido. Estamos encantados de dar la bienvenida a los reconocidos colegas de larga experiencia, expertos en el tema, y también a los jóvenes médicos y científicos. Son ellos los que con su energía y arrojo constantemente retan el conformismo y enfocan nuestra atención sobre las nuevas técnicas porque tienen innovadoras ideas.

Esta reunión ha sido convocada por la Asociación Europea de Láser (ELA), por lo que nos sentimos halagados de recibir a todos nuestros colegas de Europa y resto del mundo. Esperamos que este congreso sea una continuación del éxito de la reunión conjunta celebrada en Vilaseca (Tarragona) en 2010 por las sociedades británica y española.

Esperamos que los participantes se sientan calidamente acogidos, y que la experiencia de los días del congreso sea enriquecedora. Durante el año 2012 la ciudad de Londres será la anfitriona de varios acontecimientos importantes, incluyendo los Juegos Olímpicos, pero nuestra visión es que Laser Europe 2012 los eclipse a todos. En nombre de todos aquellos que han dado su tiempo voluntariamente, para que esta reunión sea un éxito, quiero saludaros y desearos una feliz estancia entre nosotros en el marco del esperado éxito de Laser Europe 2012.

Atentamente,

Profesor Harry Moseley
Presidente Honorífico BMLA/Presidente de Laser Europe 2012

ⓘ Information

Laser Europe 2012

REGISTRATION DESK

The registration/information desk will be located on the Mezzanine level and will remain open throughout the conference staffed during the following times:

- Thursday 10th May 8:30 - 5:45pm
- Friday 11th May 8:00 **-** 5:30pm
- Saturday 12th May 8:30 - 2:30pm

BADGES

For security reasons and catering purposes please make sure your wear your conference badge. Replacements for lost badges are available from the registration desk.

CONFERENCE BAGS & DELEGATE MANUALS

Please make sure that you insert a business card or name card in your bag. Please also write your name in your programme book and do not leave either your book or bag unattended at the conference at any time. We will not be able to issue replacement programme books or bags

MEETING ROOM LOCATIONS

- **Mezzanine:** Registrations
- **Blue 3 & 4:** Posters, Coffee and Exhibition
- **Ocean suite:** Workshops and Plenary conference sessions
- **Green 1 and Blue 2:** Workshops, Concurrent Sessions
- **Marketplace:** Lunch

MESSAGES

Notifications and messages will be posted on the message board. You are welcome to use the message board to contact fellow delegates.

POSTER SESSIONS

Poster presenters should refer to the information board in the registration area to check which board number has been allocated to them

There will be two dedicated poster sessions during the oral programme where poster presenters will give a 90 second 'speed' presentation of the content of their poster.

All posters will be displayed in Blue 3&4 and may be left up for the duration of the conference. The conference organiser does not assume any liability for damage or loss to posters. All posters left up after 2:30 on Saturday 12th May will be removed by the venue and <u>not</u> stored for collection or forwarding

WEBCAST

Some of the Ocean Room sessions on Friday 11th May will be recorded for webcast purposes. Please keep this in mind when walking around the room during filming.

FILMING OR RECORDING SESSIONS

Please do not film or take any pictures during the sessions

EXHIBITION

An exhibition will run throughout the day during the conference sessions. There are three areas of exhibition, please refer to the floor plan included in this manual.

LANGUAGE

The official language of the conference is English however simultaneous translation from English to Spanish will be available in courses and some plenary sessions

CONFERENCE REFRESHMENTS

The following are included in the registration fee for all delegates:

- Welcome Drinks Reception – Thursday 10th May in the Carbon Bar of the Cumberland Hotel
- Mid-session refreshments will be served on Thursday, Friday and Saturday in the conference areas
- Lunch will be served in the Marketplace on Friday and Saturday, please follow the signage

CONFERENCE DINNER

If you have already booked a ticket for the conference dinner cruise these will be available in your badge holder. A number of tickets are still available from the registration desk. Tickets cost £80.00 each and include a three course meal with wine and soft drinks whilst cruising down the River Thames followed by a Flamenco display after dinner

EVALUATION FORM

Your comments and views on the content and organisation of the conference are highly valued, and we would encourage you to complete the evaluation form left on your seat or available from the registration desk.

CERTIFICATES OF ATTENDANCE

Certificates of Attendance are available from the registration desk in return for a completed evaluation form

LUGGAGE

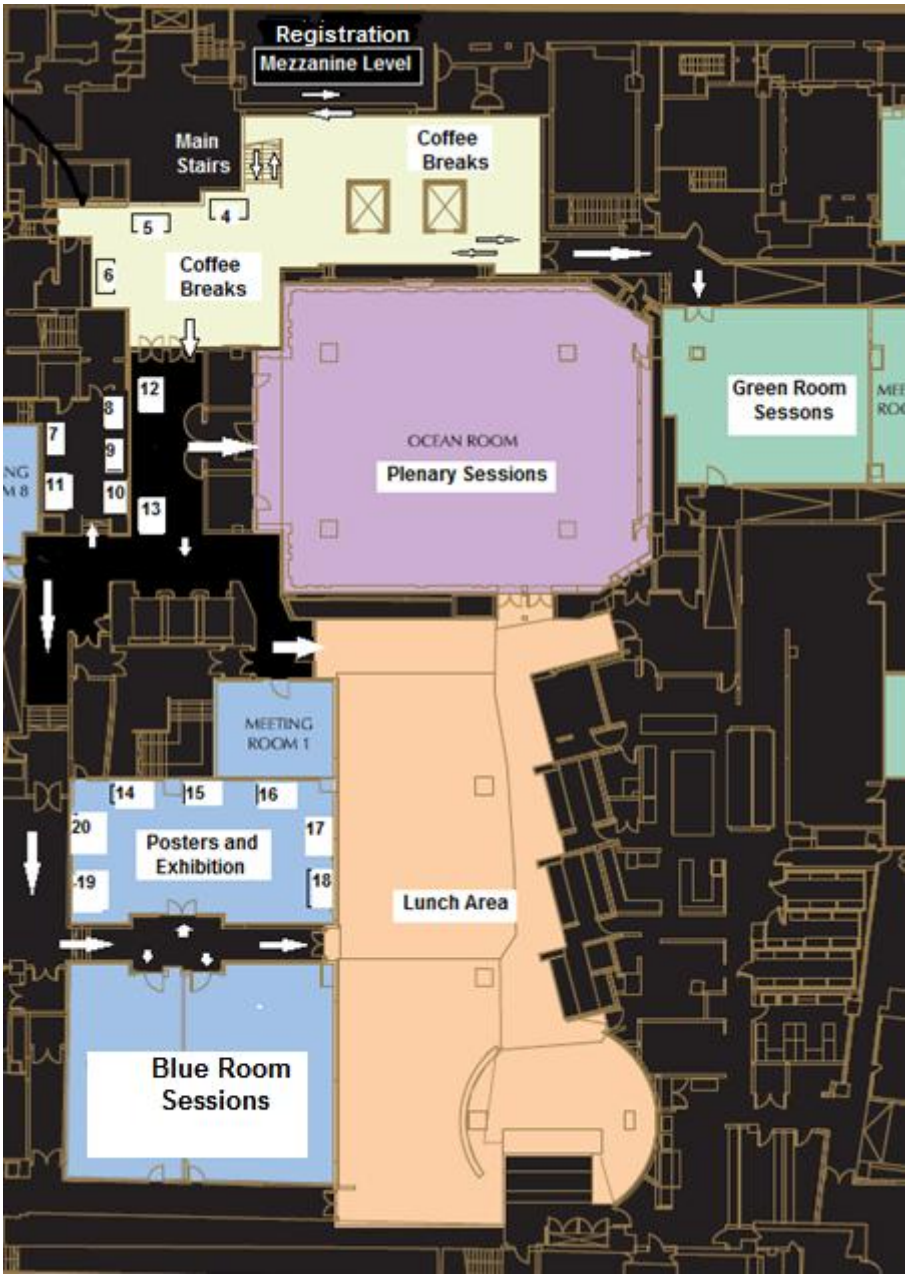
Luggage may be left in the left luggage area of the conference free of charge

CONFERENCE SECRETARIAT

Marie-Claire Morley
Encompass Events Ltd
29 Becton Lane
Barton on Sea, Hampshire, United Kingdom
BH25 7AB
Tel: +44 (0)1425 616891
Mob: +44 (0)7903 406176

E-mail: marie-claire@encompassevents.co.uk

FLOORPLAN



4. Cutera
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20 Cynosure

EXHIBITORS

ACAL BFi, is a pan-European distributor of specialist products and services for photonics, lighting and electronics markets.

We work with the world's leading suppliers: Luminit, Welch Allyn, Ushio, Laservision, Ekspla, Precision Photonics, Ocean Optics and Bright Solutions to name a few.

We provide specialist lighting products, test and measurement equipment, eye protection as well as precision optical components and laser systems for industrial, medical and scientific applications such as micromachining and spectroscopy.

Our supplier trained engineers will be happy to discuss your requirements and advice on technology solutions. We welcome your enquiries.

For further information please visit: www.photonics.bfioptilas.co.uk

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AZTEC Services is the exclusive UK distributor for the Viora product range www.vioramed.com and the Lutronic product range www.lutronic.com. Our comprehensive range of products includes lasers for all aesthetic applications, radio-frequency systems, LED therapy systems, and other equipment such as diamond-tip microdermabrasion, and needle-free mesotherapy systems. We specialise in offering the highest possible level of service and keeping the focus on our customer's needs.

For further information please visit www.aztecservices.uk.com

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Carleton Medical Ltd is a leading supplier of laser technology to both the private and public health sector. Our German manufactured Asclepion Lasers offer the highest quality manufacturing standards to provide solutions in both surgical and non-surgical applications. With industry leading levels of support, clinical expertise, and our full laser portfolio available through NHS Supply Chain, Carleton Medical is a trusted partner for light based medicine.

For further information, please visit www.carletonmedical.co.uk

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Cutera was founded in 1998 and is now one of the worldwide leading provider of laser and other light-based aesthetic systems to the aesthetic market. With our easy-to-use products practitioners can offer safe and effective aesthetic treatments to their patients.

Current applications of our product family include: permanent hair reduction on all skin types and tanned skin; treatment of pigmented and vascular conditions, including leg and facial veins; a wide range of non-ablative, semi-ablative and fractional skin rejuvenation applications and the treatment of toenail fungus.

For further information, please visit cutera.com

Cynosure UK Ltd was established in 1999 as a direct UK subsidiary of Cynosure Inc, Westford, MA, USA. We offer the full range of Cynosure lasers throughout the UK. Our lasers are market leading products which offer our customers the ultimate technology for applications such as hair removal in all skin types, skin rejuvenation, tattoo removal, treatment of pigmented and vascular lesions including facial and leg veins. The Cynosure product range also includes the more invasive treatments such as laser lipolysis, surgical and non-surgical cellulite clearance and fractional rejuvenation.

As well as offering a product range that is second to none, we also realize the importance of offering our customers excellent after-sales service and support. We are proud to back our outstanding reputation for this, which has been proven throughout our large installed base.

For further information, please visit cynosureuk.com

A spin-off of the El.En. Group, DEKA is a world-class leader in the design and manufacture of lasers and light sources for applications in the medical field. DEKA markets its devices in more than 80 countries, throughout an extensive network of international distributors as well as direct branches offices. Excellence is the hallmark of the DEKA's experience and recognition garnered in the sphere of R&D in over 30 years of activity. Quality, innovation and technological excellence place DEKA and its products in a unique and distinguished position in the global arena.

For further information, please visit www.dekalaser.com

LaserSecure instruments and ocular shields (Cox II & II H with offset handle and Durette II - III & IV external goggles). The Durette III and IV feature movable plastic or metal attachments. OPSoft mouthguard for hair removal with laser, IPL and RF systems. Laser eyewear for the OR. Disposable stick-on eye patches for laser, IPL and LED. Not for laser: up to 50 cycles in autoclavable, yellow transparent or black plastic ocular shields, Jaeger and Desmarres. Also Durette plastic goggles (black or white) for PDT and LEDs.

For further information, please visit oculoplastik.com

Lynton is a leading UK manufacturer of lasers and Intense Pulsed Light (IPL) systems. The company was established in 1994 from Manchester University as an innovator of Q-switched technology for tattoo and pigment removal. Throughout its history Lynton has been a technology innovator introducing a variety of clinical Laser & IPL systems for a variety of applications from Hair removal to the treatment of Port-wine stains. In fact, Lynton is

one of the few companies formally approved to supply Lasers and IPL's to the NHS though the supply chain network.

Lynton's product range has been developed through its own UK manufactured systems and by working in partnership with global equipment suppliers. Lynton is accredited to ISO 9001 (2008), 13485 (2003) & FDA standards. In addition, Lynton has Investors in People accreditation and is the winner of numerous Government awards for innovation (Smart, Spur).

Lynton is now recognized as one of the largest suppliers with over 600 systems currently installed in the UK. For more information please contact Lynton on 01477 536 977 to discover more about our products and people.

For further information, please visit www.lynton.co.uk

NORSELD

Frontière Médicale EUROPE, LLC (FMEurope) is a specialist European distributor of Medical Devices, and Aesthetic Products. Based in Paris, we service the Northern European countries including the UK & Ireland.

FMEurope sells the Norseld Dual Yellow Laser, the world's only Copper-Bromide Laser. Copper-Bromide produces two absolute wavelengths; 578nm (Vascular), and 511nm (Pigmented). Both wavelengths combined make an extremely versatile machine with excellent results for Melasma.

Dual-Yellow utilises FEM: Fast Edged Micro-pulse Technology to delivery 3KW of continuous power, in 22,000 pulses per second.

Delegates are welcome at the booth to learn why Norseld is the best for Vascular, Pigmented lesions and Melasma.

Further information: www.norseld.com

Primcogent Solutions
Science-Based Healthcare Solutions

Primcogent Solutions is dedicated to offering healthcare products to the medical community backed by a clear, logical, and convincing scientific and clinical foundation. Cogent Medical's signature product, ZERONA®, is the only platform that is FDA cleared and CE marked for the safe and effective reduction of fat from the hips, waist and thighs. Powered by revolutionary low-level lasers, ZERONA is an easy way to remove inches of fat without surgery, pain or recovery time. ZERONA is the only non-invasive body contouring device proven by a placebo-controlled, double-blind, multi-site clinical trial, and has helped more than 80,000 patients worldwide transform and contour their bodies. Primcogent Solutions' revolutionary approach to working with physicians enhances practice profitability by eliminating the risks associated with purchasing equipment.

For further information: www.primcogent.com

SOLTA MEDICAL®

Solta Medical, Inc. is a global leader in the medical aesthetics market providing innovative, safe, and effective solutions for patients and physicians. The company offers products to address a range of issues under the industry's premier brands: Thermage®, Fraxel®, Isolaz®, Clear + Brilliant® and Liposonix®. Thermage is an

innovative, non-invasive radiofrequency procedure for tightening and contouring skin. As the leader in fractional laser technology, Fraxel delivers solutions to resurface skin. Isolaz is the first light based system indicated for the treatment of active acne. Clear + Brilliant is a unique laser treatment to prevent early signs of aging. Liposonix is a non-invasive treatment that permanently destroys fat beneath the skin to reduce waist circumference. Since 2002, over one million Solta Medical technology based procedures have been performed in over 100 countries.

For more information about Solta Medical, log on to www.Solta.com

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Syneron and Candela are manufactures and sells ablative and non-ablative medical aesthetic devices with applications for treatment of wrinkles, skin, age spots, cellulite, acne, rosacea, hair removal, leg veins, spider veins, and much more. They are sold to dermatologists, plastic surgeons, family practitioners and other physicians, aestheticians, and medical spa professionals around the world.

For further information, please visit www.syneron.com and www.candelalaser.com

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VBS DIRECT LTD K-LASER USA

VBS Direct provides innovative, profitable therapeutic solutions for UK medical and veterinary practices: “One medicine, one health irrespective of species”. Its primary aims are to improve patient's health and practice revenue, utilise staff efficiently, and provide affordable treatment options to 100% of your client base.

At the European Medical Laser Conference 2012 we are launching the K-Laser 1200, a new Class IV therapeutic laser into the human medical, chiropractor, physiotherapy and osteopathy fields. The K-Laser allows new options in treatment and rehabilitation of wounds and musculoskeletal healing and pain management for medical staff and their patients. For further information please contact our office.

Website: www.k-laser.co.uk and www.vbsdirect.co.uk

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coolsculpting

CoolSculpting® by ZELTIQ® is transforming the aesthetic industry with the world’s only proven, non-invasive procedure using patented cooling technology to eliminate fat. Developed by Dieter Manstein, M.D., and R. Rox Anderson, M.D., of The Wellman Center for Photomedicine at Massachusetts General Hospital, a teaching affiliate of Harvard Medical School, CoolSculpting utilizes Cryolipolysis to precisely target, cool and naturally eliminate fat cells without damaging surrounding tissue or organs. FDA-cleared, CoolSculpting has clinically proven safety and efficacy, with undeniable results after just one treatment. The Cryolipolysis technology behind CoolSculpting is exclusively licensed by ZELTIQ.

Website: www.zeltiq.com

SUPPORTERS

Prime

Website: prime-journal.com

Website:: www.aslms.org

SPONSORED SYMPOSIUM

Liposonix Gen II: effective non-surgical fat removal
Speaker: Angelica Kavouni

Ms. Kavouni, a prestigious plastic surgeon based in London, will present the new Liposonix treatment including an introduction to HIFU (High Intensity Focused Ultrasound), details of the new Liposonix Gen II system, treatment parameters and before and after pictures.

CONFERENCE PROGRAMME

Thursday 10th May, 2012

Time	Ocean Room	Green 1	Blue 2
9.30 - 11.00	*COURSE 1* *Pigmented Lesions*	*COURSE 2* *Rejuvenation*	*COURSE 3* *Introduction to Lasers, Light Sources and Laser Safety*
11:00 - 11:30	Refreshments		
11.30 - 13:00	*COURSE 4* *Vascular Lesions*	*COURSE 5* *Hair Removal*	*COURSE 6* *Photobiomodulation*
14:00 - 14:15	**Opening Ceremony - Ocean Room**		
	SESSION 1: Vascular 1	**SESSION 2: PDT for Skin Lesions**	**SESSION 3: New developments in PDT**
14:20	1.1 - STUART NELSON Can the effects of laser treatment of vascular lesions be extended even after the exposure has ended?	2.1 - MERETE HAEDERSDAL Novel ways to use PDT	
14:45	1.2 - CARSTEN PHILIPP Treatment of PWS: How far are we from perfection?	2.2 - SALLY IBBOTSON Topical PDT: accentuate the positive by eliminating the negative	3.2 - SERGE MORDON Flexible light emitting textiles for Photodynamic Therapy in Dermatology
15:00			3.3 - WOLFGANG BÄUMLER Indocyanine green (ICG): a dye that improves laser assisted coagulation of blood vessels
15:10	1.3 - PHILIPP BABILAS Split-face comparison of intense pulsed light with short- and long-pulsed dye lasers for the treatment of port-wine stains	2.3 - WASEEM JERJES Quality of life and photodynamic therapy	
15:25 - 16:00	Refreshments		
16:00 - 16:25	Poster Session 1 - Ocean Room		
	SESSION 4: Vascular 2	**SESSION 5: New Technologies**	**SESSION 6: PDT: Anti-microbial and Mechanisms**
16:30	4.1 - JAVIER MORENO Chemical sclerosant and laser in the treatment of leg varicosities	5.1 - MARIO A. TRELLES Are there advantages in laser platforms for multiple treatment modalities?	6.1 - MARK WAINRIGHT The Current State of Photodynamic Antimicrobial Chemotherapy (PACT) in Microbiology
16:55	4.2 - SERGE MORDON Cold air versus tumescent anaesthesia in endovascular laser surgery	5.2 - MERETE HAEDERSDAL Fractional laser-assisted drug delivery	6.2 - WOLFGANG BÄUMLER Fast and effective photodynamic inactivation of bacteria by using short and intense light flashes of an IPL
17:10			6.3 - GEMMA BARRON The effect of ABCG2 Transporter Inhibition and Ferrochelatase Activity on PDT Efficacy: An In Vitro Study

17:20	4.3 - CARLOS BONÉ Endovenous Laser	5.3 -PABLO NARANJO Sublative fractional Radiofrecuency for the treatment of white stretch marks: a new and effective therapeutic option	
17:25			6.4 - WASEEM JERJES Management of skin pathologies using PDT: single-institute experience
17:35	4.4 - PHILIPP BABILAS Indocyanine green-augmented diode laser treatment of port wine stains: clinical and histological evidence for a new treatment option from a randomized controlled trial (RCT)	5.4 - ADRIANA RIBE 1 year follow-up after dual wavelength emitting laser (755nm and 1064nm) for treatment of leg telangiectasia and reticular veins	
18:00	General Assembly SELMQ	Executive Council BMLA	DGLM Meeting
19:00 - 21:00	Welcome Reception Carbon Bar, Cumberland Hotel		

Friday 11th May, 2012

Time	Ocean Room	Green 1	Blue 2
8:30 - 10:00	*COURSE 7* *Resurfacing*	*COURSE 8* *Fat Reduction & Redistribution*	*COURSE 9* *Genitalia Rejuvenation*
10:00 - 10:45	THE VASANT OSWAL ORATION - Ocean Suite STEVEN MARC ZEITELS, USA Lasers in Laryngeal Surgery: A Model for Minimally Invasive Laser Surgery		
10:45 - 11:10	Poster Session 2 - Ocean Room		
11:10 - 11:30	Refreshments		
	SESSION 7: Pigmented Lesions & Tattoos	**SESSION 8: Laser Surgery**	**SESSION 9: PDT in Brain & Urology**
11:30	7.1 - NICK LOWE Lasers, intense pulsed lights and Radiofrequency systems for pigmented lesions and darker skin phototypes	8.1 - JEAN DOUMERGUE Treatments of brown spots: how to treat them without pigmentation side effects	9.1 - SAM ELJAMEL Seeing is believing, the success story of flourscence image guided surgical resection in malignat primary brain tumours
11:45		8.2 - CESAR ARROYO Advantages of CO_2 laser elimination of periocular xanthelasmas.	
11:55	7.2 - ALEX CAMPS When and why to treat café au lait spots		9.2 - LAURENCE COOMBS Photodynamic diagnosis and treatment in transitional cell carcinoma: a glimmer at the end of the tunnel
12:00		8.3 - SOFIA HERRERA Labiaplasty with Diode Laser	
12:15		8.4 - FIRAS Al-NIAIMI Comparative Efficacy Of Three Common Topical Anaesthetics In Dermatological Procedures	
12:20	7.3 - PETER BERLIEN Objective Grading system to evaluate results in the treatment of Infantile Haemangiomas (IH)		9.3 - JASPER BONDAD Aminoluvelinic Acid induced Photodynamic Diagnostic Ureterorenoscopy - does the blood pressure require monitoring?
12:30		8.5 - A. BAPTISTA Perceived pain during YAG laser treatment of spider veins	

12:35	7.4 - SARAH FELTON Naevus of Ota: Response to treatment with pigment-specific lasers		9.4 - EDWARD MAINS Diagnosis of Upper Urinary Tract Tumours: is blue light assisted ureterorenoscopy required as an addition to modern imaging and ureterorenoscopy?
12:45			
12:50	7.5 - DANIEL BRUALLA Physical treatment of congenital melanocytic nevus; surgery and laser.		9.5 - EDWARD MAINS Retrograde Holmium YAG laser lithotripsy for renal stones larger than 2 cm – a promising alternative to percutaneous nephrolithotripsy. Literature review and our initial results.
12:50 - 14:00	Lunch		
13:30 - 14:00		AGM BMLA	AGM ESLAS
	SESSION 10: Aesthetic Laser Surgery	**SESSION 11: Laser/IPL Safety**	**SESSION 12: PDT in ENT, Head & Neck**
14:00	10.1 - MAX MURISON Aesthetic Laser Surgery-How I do it	11.1 - ROY HENDERSON An update on laser/IPL eyewear	12.1 – PHILIP WRIGHT Test Patches with the Q-Switched Ruby and Neodymium YAG Lasers - What do they test?
14:15			12.2 - COLIN HOPPER Recent advances in Head and Neck PDT
14:25	10.2 - DANIEL CASSUTO My concept of total facial rejuvenation	11.2 - PETER BERLIEN Are you ready for European standardisation of aesthetic laser surgery?	
14:40			12.3 - BING TAN The Role of Photo Dynamic Therapy (PDT) in the Treatment of Nasopharyngeal Cancer (NPC)
14:50	10.3 - ALCALIRA JIMÉNEZ Treatment of siliconomas with 30 watt Diode laser	THE GREAT DEBATE: INSPECTION STANDARDS The Great Debate 'Are the UK IHAS Essential Standards fit for purpose?' Speakers: Godfrey Town and Graham Hart Audience Participation will be encouraged and there will be a vote at the end of the debate.	
15:05	10.4 - MARIO TRELLES CO_2 laser upper blepharoplasty and brow tail lifting with an absorbable implant		12.4 - HUAI SHEN PHEN Treatment of Venous Vascular Malformations of the Lips with Long Pulsed Nd:YAG Laser
15:20	10.5 - SPIROS VLACHOS Laser assisted cartilege reshaping of the ears. My experience		
15:30 - 16:00	Refreshments		
	SESSION 13: Adipose Tissue	**SESSION 14: Paediatric Applications**	**SESSION 15: Clinical Biophotonics**
16:00	13.1 - JEFFREY S DOVER Non-Surgical Body Contouring 2012	14.1 - PETER BERLIEN Laser Applications in Paediatrics	15.1 - PAUL FRENCH Fluorescence lifetime imaging for biology, drug discovery and label-free clinical diagnosis

16:25	13.2 - CLAUDIA VAN DER LUGT Complementary techniques for adipose tissue manipulation		15.2 -JULIE WOODS Characterisation of skin autofluorescence to establish its role in distinguishing between normal and diseased skin.
16:40		14.2 - ALEX BARNACLE Endovenous laser: novel applications in children	15.3 - DUANE CAREY Histology specific spectra in the discrimination of disease states
16:50	13.3 - ARISTIDES ARELLANO-HUACUJA Face lift and skin resurfacing in the same surgical procedure.		
16:55			15.4 - SAM ELJAMEL Development and Validation of a Visual Analogue Scale for Fluorescence Guided Surgery
17:00		14.3 - SAMANTHA HARDING Is pulsed dye laser to blame for exudative retinal detachment in children with Sturge-weber treated with bimatoprost and PDL?	
17:05	13.4 - JUSTO ALCOLEA Macrolane® 20 for hand rejuvenation: prospecitve study in 29 patients		
17:15		14.4 - SAMIRA SYED Experience of the combined PDL/NdYAG laser in the paediatric population	
17:30	General Assembly ELA		AGM BSLSG
19:15 - 22:30	Conference Dinner Cruise – Embankment Pier		

Saturday 12th May, 2012

Time	Ocean Room	Green 1	Blue 2
	SESSION 16 - Resurfacing	**SESSION 17 - Hair Removal**	**SESSION 18 - Biophotonics - OCT & Spectroscopy**
9:00	16.1 - RAFAEL SERENA Perioral skin resurfacing with Er:YAg laser and Botulinum Toxin Type A	17.1 - SEAN LANIGAN My choice of laser for hair removal and why	18.1 - PETER TOMLINS Light Bites: Quantitative optical coherence tomography for oral medicine and dentistry
9:25	16.2 - MARIO A. TRELLES A novel combined method in fractional laser resurfacing	17.2 – PAUL MYERS Five-year retrospective study of dermatological adverse events secondary to laser hair removal	18.2 - CARSTEN PHILIPP OCT-imaging of PWS treated with pulsed dye- and pulsed Nd:YAG-laser
9:40		17.3 – MARIANO VÉLEZ – GONZÁLEZ The paradoxical effect in photoepilation; possible causes and prevention alternatives.	18.3 - MAX ALMOND Towards objective endoscopic diagnosis of early barrett's neoplasia using fibre-optic raman spectroscopy
9:50	16.3 - PETER BJERRING Efficacy and evaluation of CO2 fractional resurfacing		
9:55		17.4 - GUILLERMO ALDANA (Preliminary Study) Simultaneous use of Dye Laser λ 595nm and CO2 fractional laser in the treatment of keloid scars	18.4 - OLIVIA HEENAN Fourier transform infrared and Raman spectroscopy for real-time diagnosis of leukaemia
10:10		17.5 - MUTHU SIVARARMAKRISHNAN Provocation of Flushing for Pulsed Dye Laser Treatment:	

10:15	16.4 - ARISTIDES ARELLANO-HUACUJA Fraxel repair treatment	Our Experience of Two Techniques	
10:25		17.6 - LAZARO PEREZ Treatment of different types of vascular lesions with square long pulse nd yag 1064 nm laser system	
10:30 - 11:00	Refreshments		
	SESSION 19: The Problem Page	**SESSION 20: Photobiomodulation**	**SESSION 21: Laser Science**
11:00	19.1 - LEONARDO MARINI How to avoid incidents & complications in laser treatments	20.1 - VALERIA SELLA Low intensity level laser influence over bone repair	21.1 RONAN VALENTINE Monte Carlo Simulations for Optimal Light Delivery in Photodynamic Therapy
11:15		20.2 - RYAN MALONEY Low-level laser therapy at 635nm: An Effective Solution for Non-Invasive Body Contouring of the Waist, Hips, and Thighs	21.2 - ALEX HUMPHRIES Modelling Q-switched Nd:YAG laser treatment for tattoo removal using Finite Element software.
11:25	19.2 - MONSERRAT PLANAS Laser and ipl combined therapy is effective to improve scars		
11:30		20.3 - MALEK MENEM The Use of Low Level Laser Therapy (LLLT) and LEDs for the Treatment of Alopecia	21.3 - TOM LISTER A New Monte Carlo Simulation for Predicting the Change of Port Wine Stain Skin Colour resulting from Pulsed Dye Laser Treatment
11:40	19.3 - FEDELE LEMBO Pulsed Dye Laser (PDL) in Hypetrophic Scars and Keloids: Our Experience in The Past 3 Years		
11:45		20.4 -JOANA COSTA The role of Phototherapy as an adjunct to the treatment of contractile scars in burned patients	21.4 - GODFREY TOWN Safety of a novel Skin Tone Meter (STM) to determine Skin Tone in Fitzpatrick Skin Types I-VI prior to home use IPL treatment
11:55	19.4 - HANS HAINZ High Energy Laser enable a paradigm shift in surgery with costreduction Pattern could be history of prostate therapy		
12:00		20.5 - CESAR ARROYO Sublative fractional radiofrequency for the treatment of acne scars. A minimal invasive technique to consider.	21.5 - JOE DEWHURST Modelling patient variation in photodynamic therapy for basal cell carcinoma
12:10	19.5 - SERGE MORDON Photodynamic therapy for prostate cancer: what needs?		
12:15		20.6 - PETER BERLIEN Comparison of side effects of Propranolol and Prednisolon in the systemic treatment of Infantile Haemangioma (IH)	21.6 - BRUNO PONTE Skin permeating nanogels (SPNs) for drug-based laser therapy of vascular lesions
12:30 - 13:30	Lunch	Lunch	**Solta Sponsored Symposium** Angelica Kavouni Liposonix Gen II: effective non-surgical fat removal
	SESSION 22: Use of Make-up and other Cosmetic Applications Ocean Suite		
13:30	SAM KIRBY and DOROTHY MACHLACHLAN Live Skin Camouflage Demonstration		
13:45	WILLIAM TOWNLEY Laser with camouflage - an alternative solution for congenital melanocytic naevus		
13:55	SAM KIRBY Changing the way you face Disfigurement: an overview of the work of the charity Changing Faces		
14:15	**Closing remarks and close of conference**		

PROGRAMA

Jueves 10 Mayo, 2012

Hora	Sala: Ocean Room	Sala: Green 1	Sala: Blue 2
9.30 - 11.00	*CURSO 1* *Lesiones Pigmentadas*	*CURSO 2* *Rejuvenecimiento*	*CURSO 3* *Introducción al Láser, Fuentes de Luz y Seguridad Láser*
11:00 - 11:30	Pausa- Café		
11.30 - 13:00	*CURSO 4* *Lesiones Vasculares*	*CURSO 5-* *Depilación*	*CURSO 6* *Fotobiomodulación*
14:00 - 14:15	**Ceremonia de Apertura - Sala: Ocean Room**		
	SESIÓN 1: Vascular 1	**SESIÓN 2: PDT en lesiones cutáneas**	**SESIÓN 3: PDT en lesiones Bronco-Pulmonares**
14:20	1.1 - STUART NELSON En el tratamiento de las lesiones vasculares pueden los efectos del láser extenderse hasta después de la exposición?	2.1 - MERETE HAEDERSDAL Usos novedosos de la PDT	
14:45	1.2 - CARSTEN PHILIPP El tratamiento de hemangiomas planos: Cuan lejos estamos de la perfección?	2.2 - SALLY IBBOTSON PDT Tópica: acentuar lo positivo, eliminado lo negativo	3.2 - SERGE MORDON Textiles de emisión de luz flexible para Terapia Foto dinámica en Dermatología
15:00			3.3 - WOLFGANG BÄUMLER Indocianina verde (ICG): un colorante que mejora la coagulación con láser de los vasos sanguíneos
15:10	1.3 - PHILIP BABILAS Comparación en ambos lados de la cara, del tratamiento de hemangiomas planos con luz intensa pulsada y láser de colorante de pulso largo y corto	2.3 - WASEEM JERJES Calidad de vida y terapia foto dinámica	
15:25 - 16:00	Pausa- Café		
16:00 - 16:25	Poster Session 1 – Sala: Ocean Room		
	SESIÓN 4: Vascular 2	**SESIÓN 5: Nuevas Tecnologías**	**SESIÓN 6 PDT: Anti-microbiana y sus mecanismos**
16:30	4.1 - JAVIER MORENO Esclerosis química y láser en el tratamiento de varices de las piernas	5.1 - MARIO A. TRELLES ¿Hay ventajas en las plataformas láser para tratamientos de múltiples modalidades?	6.1 - MARK WAINRIGHT Estado actual de la Quimioterápia Fotodinámica Antimicrobial (PACT) en Microbiología
16:55	4.2 - SERGE MORDON Aire frío frente a anestesia tumescente en cirugía endovascular con láser	5.2 - MERETE HAEDERSDAL Administración de medicación con ayuda del láser fraccional	6.2- WOLFGANG BÄUMLER Desactivación foto dinámica rápida y efectiva de la bacteria utilizando destellos cortos e intensos de luz de un IPL

17:10			6.3 - GEMMA BARRON El efecto del Inhibidor transportador ABCG2 y Actividad de la Ferroquelatasa en la eficacia de la PDT: estudio In Vitro
17:20	4.3 -CARLOS BONÉ Láser Endovenoso	5.3 - PABLO NARANJO Radiofrecuencia fraccionada sublativa para el tratamiento de la estría blanca: una novedosa y efectiva opción terapéutica.	
17:25			6.4 - WASEEM JERJES Gestión de patologías cutáneas utilizando PDT: experiencia de un centro
17:35	4.4 - PHILIPP BABILAS Tratamiento con láser de diodo y Indocianina verde magnificada para hemangiomas planos: Evidencia clínica e histológica para una nueva opción de tratamiento, desde un estudio aleatorio controlado (RCT)	5.4 - ADR RIBE Seguimiento de un año, después de tratamiento de telangectasias y venas reticulares de las piernas con láser de longitud de onda (755nm and 1064nm) de emisión dual	
18:00	Asamblea General SELMQ	Consejo Ejecutivo BMLA	Reunión DGLM
19:00 - 21:00	Recepción de Bienvenida Carbon Bar, Cumberland Hotel		

Viernes 11 Mayo, 2012

Hora	Sala: Ocean Room	Sala: Green 1	Sala: Blue 2
8:30 - 10:00	*CURSO 7* *Resurfacing*	*CURSO 8* *Reducción y Redistribución de la Grasa*	*CURSO 9* *Rejuvenecimiento Genital*
10:00 - 10:45	ORATORIA VASANT OSWAL - Sala:Ocean Room STEVEN MARC ZEITELS, USA Láseres en Cirugía de la Laringe: Modelo para Cirugía Láser Mínima Invasiva		
10:45 - 11:10	Poster Session 2 – Sala: Ocean Room		
11:10 - 11:30	Pausa- Café		
	SESIÓN 7: Lesiones Pigmentadas y Tatuajes	**SESIÓN 8: Cirugía Láser**	**SESIÓN 9: PDT en Neurología y Urología**
11:30	7.1 - NICK LOWE Lesiones pigmentadas, tatuajes y pieles oscuras	8.1 - JEAN DOUMERGUE El tratamiento de las pigmentaciones color marron: como tratarlas sin efectos secundarios de pigmentación	9.1 - SAM ELJAMEL Ver es creer. El éxito de la cirugía de resección de tumores cerebrales primarios guiándose por imágenes fluorescentes
11:45		8.2 - CESAR ARROYO Ventajas de la eliminación con laser de anhídrido carbónico de xantelasmas periorbitarios.	
11:55	7.2 - ALEX CAMPS Cuándo y por qué tratar las manchas "café con leche"		9.2 - LAURENCE COOMBS Diagnóstico foto dinámico y tratamiento de carcinomas de células transicionales: una luz al final del túnel
12:00		8.3 – SOFIA HERRERA Ninfoplastia con Láser de Diodo.	
12:15		8.4 – FIRAS AL-NIAIMI Comparación de la eficacia de tres anestesias tópicas en los procedimientos dermatológicos	

12:20	7.3 - PETER BERLIEN Objective Grading system to evaluate results in the treatment of Infantile Haemangiomas (IH)		9.3 – JASPER BONDAD Ureterorenoscopia diagnóstica foto dinámica inducida por ácido Aminoluvulinico - ¿se necesita monitorizar la tensión arterial?
12:30		8.5 – A. BAPTISTA Dolor durante el tramiento de variculas con láser de YAG	
12:35	7.4 – SARAH FELTON Nevus de Ota: Respuesta de las lesiones pigmentadas al tratamiento con láseres específicos		9.4 – EDWARD MAINS Diagnóstico de tumores del tracto urinario: es necesario la ureterorenoscopia con luz azul como complemento a las imágenes médicas en la ureterorenoscopia actual?
12:45			
12:50	7.5 – DANIEL BRUALLA Tratamiento físico de los nevus melanocíticos congénitos; cirugía y láser.		9.5 – EDWARD MAINS Litotricia con láser de Holmio YAG con movimiento retrogrado para cálculos renales mayores de 2 cm – una alternativa prometedora en la nefrolitrotricia percutánea. Revisión de la literatura y nuestros resultados iniciales.
12:50 - 14:00	Comida		
13:30 - 14:00		Asamblea General BMLA	Asamblea General ESLAS
	SESIÓN 10: Cirugía Estética Láser	**SESIÓN 11: Seguridad Laser/IPL**	**SESIÓN 12: PDT en ORL, Cabeza y Cuello**
14:00	10.1 - MAX MURISON Cirugía Estética Láser: Como la llevo a cabo	11.1 - ROY HENDERSON Actualización sobre protección ocular para láser/IPL	12.1 – PHILIP WRIGHT En las pruebas con los láseres Q-Switch de Rubi y de Neodimio YAG que es lo que se ensaya?
14:25	10.2 - DANIEL CASSUTO Mi concepto de rejuvenecimiento facial total	11.2 - PETER BERLIEN ¿Estamos preparados para la normalización Europea de la Cirugía Estética Láser?	12.2 - COLIN HOPPER Recent advances in Head and Neck PDT
14:50	10.3 - ALCALIRA JIMENEZ Tratamiento de siliconomas mediante laser diodo 30 watts	EL GRAN DEBATE: NORMAS DE INSPECCION Son las Normas esenciales Británicas IHAS suficientes para su propósito? Oradores: Godfrey Town and Graham Hart La participación de la audiencia será activa y habrá una votación al finalizar el debate	12.3 - BING TAN El papel de la Terapia foto dinámica (PDT) en el tratamiento del cáncer nasofaringe (NPC)
15:05	10.4 - MARIO TRELLES Blefaroplastia superior con lasér de CO2 y elevación de la cola de cejas con implantes absorbibles		12.4 – HUAI SHEN PHEN Tratamiento de malformaciones vasculares venosas de los labios con láser de Nd:YAG de pulso largo
15:20	10.5 - SPIROS VLACHOS Remodelación del cartílago de la oreja asistido por láser. Mi experiencia		
15:30 - 16:00	Pausa- Café		

	SESIÓN 13: Tejido Adiposo	SESIÓN 14: Aplicaciones Pediátricas	SESIÓN 15: Biofotonica Clínica
16:00	13.1 - JEFFREY S DOVER Desarrollos fascinantes en la remodelación corporal no invasiva	14.1 - PETER BERLIEN Aplicaciones del láser en Pediatría	15.1 - PAUL FRENCH Vida de imágenes fluorescentes en biología, descubrimiento de medicamentos y diagnóstico clínico genérico
16:25	13.2 - CLAUDIA VAN DER LUGT Técnicas complementarias para la manipulación del tejido adiposo		15.2 - JULIE WOODS Caracterización de la autofluorescencia de la piel para establecer su papel y distinguir entre piel sana y enferma.
16:40		14.2 - ALEX BARNACLE Láser endovenoso: nuevas aplicaciones en niños	15.3 - DUANE CAREY Histología espectroscopia específica para la discriminación de enfermedades
16:50	13.3 - ARISTIDES ARELLANO-HUACUJA Lifting facial y resurfacing en el mismo procedimiento quirúrgico.		
16:55			15.4 - SAM ELJAMEL Desarrollo y Validación de una escala visual analógica para cirugía guiada por fluorescencia
17:00		14.3 - SAMANTHA HARDING ¿Es el láser de colorante pulsado el causante del desprendimiento de retina exudativa en niños con síndrome Sturge-weber tratados con bimatoprost y PDL?	
17:05	13.4 - JUSTO ALCOLEA macrolane® 20 en el rejuvenecimiento de las manos: estudio prospectivo en 29 pacientes		
17:15		14.4 - SAMIRA SYED Experiencia con el láser combinado PDL/NdYAG en pediatría	
17:30	Asamblea General ELA		Asamblea General BSLSG
19:15 - 22:30	Cena y Crucero		

Sabado 12 Mayo, 2012

Hora	Sala: Ocean Room	Sala: Green 1	Sala: Blue 2
	SESIÓN 16: Resurfacing	**SESIÓN 17: Depilación**	**SESIÓN 18: Biofotónica - OCT y Espectroscopia**
9:00	16.1 - RAFAEL SERENA Resurfacing cutáneo perioral con láser de Er:YAG y Toxina Botulínica Tipo A	17.1 - SEAN LANIGAN Mi elección de láser para depilación y por qué	18.1 - PETER TOMLINS Bytes de luz: Tomografía coherente cuantitativa óptica para medicina oral y odontología
9:25	16.2 - MARIO A. TRELLES Un método combinado novedoso en resurfacing con láser fraccional	17.2 - PAUL MYERS Estudio retrospectivo a cinco años sobre reacciones adversas dermatológicas secundarias a la depilación láser	18.2 - CARSTEN PHILIPP Imágenes OCT de hemangiomas planos tratados con láser de colorante y de Nd-YAG pulsados
9:40		17.3 - MARIOANO VÉLEZ – GONZÁLEZ Efectos paradójicos de la fotodepilación; posibles causas y alternativas de prevención.	18.3 - MAX ALMOND Hacia el diagnóstico endoscópico objetivo de la neoplasia de Barrett temprana utilizando espectroscopia Raman de fibra óptica
9:50	16.3 - PETER BJERRING Eficacia y evaluación del resurfacing fraccional con láser de CO2		
9:55		17.4 - GUILLERMO ALDANA (Estudio Preliminar) Uso simultaneo de Dye Laser λ 595nm y CO2 fraccional en el tratamiento de cicatrices queloideas	18.4 - OLIVIA HEENAN Transformada de Fourier infrarrojo y espectroscopia Raman para diagnóstico de la leucemia en tiempo real

10:10		17.5 - MUTHU SIVARARMAKRISHNAN Provocación de enrojecimiento para tratamiento con láser de colorante pulsado: Nuestra experiencia con dos técnicas	
10:15	16.4 - ARISTIDES ARELLANO-HUACUJA Tratamiento de reparación Fraxel		
10:25		17.6 - LAZARO PEREZ Tratamiento de diferentes tipo de lesiones vasculares con láser de Nd:YAG de 1064 nm de pulso largo cuadrado	
10:30 - 11:00	Pausa- Café		
	SESIÓN 19: Consultoría	**SESIÓN 20: Fotobiomodulación**	**SESIÓN 21: La ciencia del láser**
11:00	19.1 - LEONARDO MARINI Como evitar incidentes y complicaciones en los tratamientos láser	20.1 - VALERIA SELLA La influencia del láser de baja intensidad en la reparación ósea	21.1 - RONAN VALENTINE Simulación del método numérico de Monte Carlo para una entrega optima de la luz en la terapia foto dinámica
11:15		20.2 - RYAN MALONEY Terapia láser 635 nm de baja intensidad: Una solución efectiva para la remodelación corporal no invasiva de la cintura, caderas y muslos	21.2 - ALEX HUMPHRIES Modelo de tratamiento con láser de Q-switch Nd:YAG pra la elimiación de tatuajes utilizando software Finite Element
11:25	19.2 - MONSERRAT PLANAS La terapia combinada de láser y IPL es efectiva para mejorar las cicatrices		
11:30		20.3 - MALEK MENEM El uso de terapia de láser de baja potencia (LLLT) y LEDs para el tratamiento de la Alopecia	21.3 - TOM LISTER Una nueva simulación del método numérico de Monte Carlo para predecir el cambio de color de la piel en los hemangiomas planos después del tratamiento con láser de colorante pulsado
11:40	19.3 - FEDELE LEMBO Láser de colorante pulsado (PDL)para cicatrices hipertróficas y queloides: Nuestra experiencia en los últimos 3 años		
11:45		20.4 -JOANA COSTA The role of Phototherapy as an adjunct to the treatment of contractile scars in burned patients	21.4 - GODFREY TOWN Seguridad de un nuevo medidor del tono cutáneo (STM) para determinar tipos de piel en fototipos I-VI
11:50	19.4 - HANS HAINZ Láser de alta potencia permite un cambio en el paradigma de la cirugía con reducción de costes. El diseño podría ser la historia de la terapia prostática		
12:00		20.5 - CESAR ARROYO Radiofrecuencia fraccionada sublativa para el tratamiento de las cicatrices de acné. Una técnica mínimamente agresiva a tener en cuenta.	21.5 - JOE DEWHURST Modelo matemático de la variable de los pacientes en la terapia foto dinámica para el carcinoma basocelular
12:05	19.5 - SERGE MORDON Terapia foto dinámica para el cáncer de próstata		
12:15		20.6 - PETER BERLIEN Comparación de los efectos secundarios del Propranolol y Prednisolona en el tratamiento sistemático de los Hemangiomas Infantiles	21.6 - BRUNO PONTE Penetración cutánea de nanogeles (SPNs) con fármacos para terapia láser de las lesiones vasculares
12:30 - 13:30	Comida		Simposium esponsorizado por Solta Liposonix Gen II:: eliminación efectiva de grasa sin cirugía

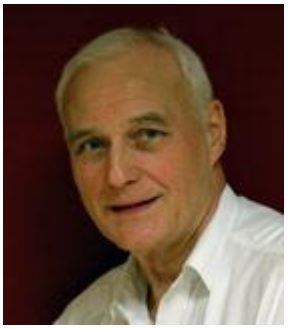
	SESIÓN 22 - Utilización de maquillaje y otras aplicaciones cosméticas **Sala: Ocean Suite**
13:30	SAM KIRBY and DOROTHY MACHLACHLAN Demostración en vivo de camuflaje cutáneo
13:45	WILLIAM TOWNLEY Láser mas camuflaje – una solución alternativa para nevus melanocítico congénito
13:55	SAM KIRBY Cambiando la forma de enfrentarse a la desfiguración: Visión general de la labor de la organización de caridad “Changing Faces” (Cambiando Rostros)
14:15	**Comentarios y clausura de la conferencia**

INVITED SPEAKERS BIOGRAPHIES

Alex M Barnacle
Great Ormond Street Hospital, London, UK

Undertook her medical degree at the University of Southampton (1990-95) and her radiology training at Hammersmith/Charing Cross Hospitals, London (1999-2004). This was followed by two fellowships in paediatric radiology at Great Ormond Street Hospital for Children in London (2004) and The Royal Children's Hospital, Melbourne, Australia (2005). She was appointed as a consultant in interventional radiology at Great Ormond Street in 2004 and has completed 6 years in post. She is the lead radiologist for the vascular anomalies service at GOSH and has additional specialist interests in paediatric renal stone disease and musculoskeletal intervention.

Peter Berlien
Ev. Elisabeth Hospital, Germany



Prof. Berlien is head of the department for laser medicine at the Ev. Elisabeth Hospital. Since 1989 the surgeon who had graduated at the Freie Univesität Berlin is professor for laser medicine at the named university. From1996 to 2005 he was head physician of the newly found department for laser medicine at the Städtische Krankenhaus Neukölln (now Vivantes), Berlin. Since 2005 he is head physician of the newly found department for laser medicine at the Ev. Elisabeth Hospital, Berlin. Prof. Berlien is president of the Berliner Wissenschaftlichen Gesellschaft and vice president of the International Society for the Study of Vascular Anomalies (ISSVA) as well as member of the National Academy of Science and Engineering (acatech).

Peter Bjerring
Molholm Hospital, Denmark

Professor Peter Bjerring is currently Medical Director at the Molholm Hospital, the largest independent private hospital in Denmark, and he is also Head of the SkinCenter Molholm (a series of dermatology, cosmetic and laser clinics) based in the cities Vejle, Aarhus and Aalborg in Denmark.
In 2005 Professor Bjerring was appointed Honorary Professor at the Medical Faculty, Swansea University, Wales, UK, where he is currently active in teaching and clinical research. From 1995 to 2004 he was Clinical Research Professor at the Department of Dermatology, Aarhus University Hospital, Denmark and Head of the Aarhus University Hospital Laser Centre.
In 1989 Dr. Bjerring obtained Board Certification as a specialist in dermatology and venereology, and from 1990 to 2005 he was a Senior Faculty Member at the Department of Dermatology, Aarhus University Hospital.
In February 2007 Queen Margrethe II of Denmark appointed dr. Bjerring Knight of Denmark.
In 1991 he became Dr. Sci. (Med) on a thesis on investigations of interactions of the human cutaneous inflammatory- and sensory nervous systems using laser-assisted neurophysiological methods.
Professor Bjerring has published more than 200 scientific peer-reviewed papers in international medical journals as well as book chapters and more than 400 clinical presentations at international congresses and scientific meetings.
Professor Bjerring is Past President of the European Society for Lasers in Dermatology (ESLD) and past Vice President of the European Society for Laser Aesthetic Surgery (ESLAS) and he is a Fellow of the American Society for Lasers in Surgery and Medicine (ASLMS) as well as a Fellow of the American Academy of Dermatology (AAD).

Alejandro Camps Fresneda
Dermalás - Consultorios Teknon, Spain

Graduate in Medicine and Surgery. Faculty of Medicine, Barcelona University.
Speciality: Dermatology.
Doctor in Medicine and Surgery, Faculty of Medicine, Barcelona University.
Chief of Dermatology Department, Hospital General of Catalonia (1986-2006)
Medical Director Dermalas Laser Centre, (Teknon Clinic).

Founder of the Skin Cancer Early Diagnosis Centre (Cutaneous Screening), Teknon Medical Centre.
Founding Member of the European Society for Mohs Micrographic Surgery.
Vice president of European Society for Mohs Micrographic Surgery
Founding Member of the Spanish Group of Dermatologic Surgery
Founding Member of the Spanish Group of Trichology
Member of the European Hair Research Society (since 1991)
Member of the American Society for Laser Medicine and Surgery.
Founding Member of the Spanish Group of Dermatology and Psychiatry
Founding Member of the European Society for Laser in Dermatology (since 1996).
President of the European Society for Laser in Dermatology 2002-2004
Vice, President of The Spanish Association of Skin Cancer (ASECCUT).
Honorary Member of the Sociedad Chilena de Dermatología y Venerología.
President of the International Society for Dermatologic Surgery (2000-2002).

Daniel Cassuto
Italy

Plastic and Aesthetic Surgery – private practice in Milano, Italy

Professor of Plastic, Reconstructive and Aesthetic Surgery – Plastic Surgery Department, University Hospital (Policlinico) of Modena, Italy (Dir.: Pr G. De Santis).

“Unit for the treatment of complications from fillers”, Department of Plastic Surgery, University Hospital “Policlinico di Modena” (Dir.: Pr G. De Santis).

Speaker/Consultant/Preceptor for the following companies:
Syneron, Lasering, DEKA, Galderma, Endymed, Anteis, Eufoton, Asclepion, Perf-action, Sciton, Viora, Merz, Alma.

Laurence Coombs
North Lincoln and Goole hosptals NHS Foundation Trust, UK

After two years working as a research assistant in the Charing Cross Physiology department I went into medicine. I qualified at Charing Cross Hospital Medical School in 1978. Accepted as the first clinical research fellow post at the Marie Curie Research Institute 1985. I Completed an MD in molecular based studies on peptides and their receptors in transitional cell carcinoma. Became a founder member of the last department of urology to form in UK in North Lincolnshire and urological advisor to the Yorkshire laser centre a short while after. From the origin of the department and connection with the YLC we have had a pragmatic approach to the use of photodynamic diagnosis and therapy in urothelial cancer. We were selected as an NTAC site for fluorescence guided TURBT and have continued with treatment and diagnosis within associated research groups (PDD users group) within the constraints of a heavy clinical work load.

Jeffrey S. Dover
Skincare Physicians, USA

Dr. Jeffrey S. Dover graduated as the silver medalist, *Magna cum Laude*with an M.D. degree from the University of Ottawa. His dermatology training was received at the University of Toronto followed by research fellowships at St. John's Hospital for Diseases of the Skin at the University of London in London, England, and a two-year photomedicine fellowship at the Beth Israel Hospital and the Massachusetts General Hospital of Harvard Medical School. Dr. Dover is a former associate professor of dermatology at Harvard Medical School, was chief of dermatology at the New England Deaconess Hospital for over ten years and also associate chair of dermatology at Beth Israel Deaconess Medical Center. He is associate clinical professor of dermatology, at Yale University School of Medicine, and adjunct professor of medicine (dermatology) at Dartmouth Medical School. Dr. Dover is a director of SkinCare Physicians in Chestnut Hill, Massachusetts. His research interests are lasers in medicine, cosmetic surgery and medical education. Dr. Dover is the author of over 350 scientific publications. He has co-authored and edited 37 textbooks. His books have been translated into French, Italian, Spanish, Russian, Polish and Chinese. Titles include *Illustrated Cutaneous Laser Surgery: A Practitioner's Guide, Controversies and Conversations in Cutaneous Laser Surgery, Atlas of Cosmetic Surgery*, and the series, *Procedures in Cosmetic Dermatology*. Dr. Dover has also co-authored three books for lay individuals; *Skin Deep: An A-Z of Skin Disorders, Treatments and Health, the Encyclopedia of Skin and Skin Disorder,* and the *Youth Equation.* Dr. Dover is the founding editor of *Journal Watch for Dermatology*, produced by the publishers of the *New England Journal of Medicine*. Dr. Dover is past president of the American Society for Dermatologic Surgery, vice president of the board of directors of the American Society for Laser Medicine and Surgery, and past president of the New England Dermatological Society. He organizes and directs numerous medical conferences, including the annual Controversies in Cutaneous Laser and Cosmetic Surgery Symposium along with Dr. Arndt. Dr. Dover has received many honors including repeated nominations for "teacher of the year" at Harvard Medical School. He received the Leon Goldman Memorial Award and the Ellet Drake Award of the American Society for Laser Medicine and Surgery and he was honored for his work in laser surgery by the Sturge Weber Foundation at its 20th Annual Gala. Dr. Dover was born in New York City and raised in Ottawa, Canada where his extended family still resides. He is proud of his two daughters, Sophie and Isabel, and his wife Tania who also practices dermatology in Boston.

Sam Eljamel
Ninewells Hospital & Medical School, UK

Professor Sam Eljamel graduated with honours 1982, became a fellow of the RCSI 1986, awarded an MD in neurosciences with distinction from Liverpool University and the intercollegiate FRCS in neurosurgery 1992. Prof Eljamel completed his higher neurosurgical training in the UK and Ireland in 1993 (UKCCST). He spent a clinical fellowship in neurosurgery in the University of Connecticut and Hartford Hospital before appointed Consultant Neurosurgeon in Tayside 1995.

Prof Eljamel is committed to higher education. He is a member of the Medical Admissions Committee and internal examiner at Dundee Medical School for 13 years, SSC organiser and teacher of the nervous system for 16 years, and responsible for foundation apprenticeships.

Prof Eljamel is dedicated trainer; speciality advisor for 16 years, foundation educational supervisor for many years, educational supervisor and lead trainer in neurosurgery for 16 years leading SAC application and successful recognition of training posts in neurosurgery. He joined the faculty of SCOTS and delivered the educational supervisor courses from 2009.

Prof Eljamel is dedicated researcher; he had participated in 10 multicentre randomised controlled trials as PI and he was CI in another 10 local studies. He had co-authored more than 85 papers in peer reviewed journals, presented more than 100 presentations in national and international scientific meetings. He had written 7 chapters and books and is Associate Editor of one international journal and member of editorial board of another two.

Prof Eljamel is world expert in functional and robotic surgery, CSF leaks, and photodiagnosis and photodynamic therapy.

Paul French
Imperial College London, UK

Professor Paul French, Head of Photonics Group, was a Royal Society University Research Fellow at Imperial from 1989 and joined the academic staff in 1994. He has been a Visiting Professor at the University of New Mexico and a Consultant at AT&T Bell Laboratories. His research has evolved from ultrafast dye and solid-state laser physics to biomedical optics with a particular emphasis on FLIM for applications in molecular cell biology, drug discovery and clinical diagnosis. His current portfolio includes the development and application of multidimensional fluorescence imaging for microscopy, endoscopy and tomography. He is a Fellow of the Institute of Physics, the European Physical Society and the Optical Society of America and holds a Royal Society Wolfson Research Merit Award.

Merete Haedersdal
University of Copenhagen, Denmark

Dr. Merete Haedersdal is a dermatologist and associate clinical professor of dermatology at the University of Copenhagen, Denmark. She is visiting associate professor at the Wellman Center for Photomedicine, Massachusetts General Hospital, Harvard Medical School focusing on “laser-assisted drug delivery” in collaboration with Dr. R. Rox Anderson’s team.

Dr. Haedersdal received her M.D. degree from the Medical School program of the university of Copenhagen, Denmark and she was authorised as a specialist in dermato-venereology in 2004. Dr. Haedersdal received her Ph.D degree in 1997 and became Dr. of Medical Science in 1999 from university of Copenhagen. Her theses cover different aspects of side effects from dermatological laser procedures in murine and human experiments.

Dr. Haedersdal is consultant for the National Board of Health in Denmark and she has actively been involved in the Danish legislation about aesthetic procedures with lasers, IPL systems and related technologies. Her research interests include laser therapy in dermatology, photodynamic therapy, skin cancer, and evidence-based treatments with light-emitting devices. Dr. Haedersdal has published and lectured nationally and internationally in the fields of laser dermatology and photodynamic therapy.

Samantha Harding
Great Ormond Street Hospital, London, UK

Samantha Harding was a graduate chemist, polymer scientist and newspaper journalist before entering medicine. She trained at St George’s Medical School, London. She is a member of the Royal College of Ophthalmologists and was a fellow in paediatric ophthalmology at Great Ormond Street Hospital, London.

Roy Henderson
Bioptica, UK

Roy Henderson is a laser safety specialist and has his own consulting company, Bioptica. As a physicist he has followed a career in the application of optics and laser technology in both the medical and industrial sectors. He is actively involved in the development of international safety standards within IEC and ISO and is Chairman of the European laser safety committee (CLC/TC76). Roy is an accredited Laser Protection Adviser and is co-author of the book ‘Laser Safety’. He provides consulting services to both users and manufacturers of laser equipment, gives safety courses throughout the UK and Ireland and has also provided laser safety training in the USA and China. He regularly serves as a member of the Advisory Board for the International Laser Safety Conference (ILSC) in the US.

Colin Hopper
University College Hospital, London, UK

Colin Hopper is a Head and Neck Surgeon at University College Hospital in London and is primarily employed by University College London. He has also been working in the National Medical Laser Centre for the last 20 years and it is through these links he has been working on the clinical applications of PDT – mainly in respect of head and neck cancer but also in some congenital disorders. He is on the executive of the British Medical Laser Association, the European Platform for Photodynamic Medicine and the International Photodynamic Association. He and his colleagues (Bing Tan, Alex Kubler and Graham Puttnam) have trained several hundred doctors across Europe in PDT techniques and his personal treatment series is now in excess of 2,000 treatments.

Sally Ibbotson
The University of Dundee, UK

Dr Sally Ibbotson qualified in Medicine at the University of Leeds in 1986 and, after general medical training, moved to Newcastle upon Tyne to undertake dermatology training. She developed an interest in photodermatology and was appointed as Clinical Senior Lecturer in Photobiology in the Photobiology Unit, University of Dundee, Ninewells Hospital & Medical School in November 1998. Dr Ibbotson has clinical and research areas of interest in photosensitivity diseases, photodiagnosis, phototherapy and photodynamic therapy. She is responsible for the photodynamic therapy service in dermatology in Dundee and is involved in the Scottish Photodynamic Therapy Centre. She has an important role in the national service for investigation and management of patients with photosensitivity disorders. Dr Ibbotson also has an important role in undergraduate and postgraduate training and education. She has published over 120 papers and has a national and international reputation in photodermatology. She has been involved in the development of published guidelines in photodynamic therapy, photodiagnostics and phototherapy, has ongoing involvement in dermatology research and teaching committees and is a Royal College question writer for the dermatology specialist exam. She is a regular reviewer for the main dermatology journals and is Associate Editor for Photodiagnosis and Photodynamic Therapy.

Paraskevis (Vakis) Kontoes
Plastic Surgeon, Greece

Dr. Kontoes is a pioneer of Laser Aesthetic surgery in Greece and Europe and performed the first ever full face resurfacing for wrinkles, age spots and age signs of the face in the country in 1995. He is also known for the innovative evolution of the Laser Blepharoplasty technique with the Single Suture Traction Technique (SSTT) described and published by him.
His research and experience in Laser and Plastic Surgery were appreciated worldwide and he is regularly invited to International Congresses and Universities to give lectures on techniques exclusively developed by him, very well known in the society of plastic surgery across the world for his excellent teaching skills

Ph.D. in Medicine and Pharmacy Athens, Greece
Senior Consultant in Plastic Surgery Athens, Greece
Specialist in Plastic Reconstructive Aesthetic and Laser Surgery.
President of the European Society for Laser Aesthetic Surgery (ESLAS)
National Secretary of the International Society of Aesthetic Plastic Surgery (ISAPS)
Member of the Educational Council of ISAPS
Member of the Board of Directors of the Hellenic Society for Plastic Reconstructive and Aesthetic Surgery (HESPRAS)
Director of Plastic Aesthetic and Laser surgery Dept. “Hygeia” Hospital, Athens, Greece were the whole spectrum of Plastic and Reconstructive surgery is performed.
Director of “Laserlight Clinic”, Athens, Greece the first private Laser Clinic of non-surgical Lasers established in Greece in 1997
President of DrK Medical Group

Sean Lanigan
sk:n, UK

Dr Sean Lanigan MD FRCP DCH is Group Medical Director and Consultant Dermatologist for **sk:n**, The UK's No.1 skin clinic with 38 locations nationwide; and Honorary Consultant Dermatologist - City Hospital, Birmingham.
Dr Lanigan is recognised internationally as an expert in the field of laser treatment of skin diseases. He has over 25 years of contributed research and over 150 scientific publications. He is the author of the first European textbook on laser treatment of skin diseases entitled 'Lasers in Dermatology', published by Springer. He was also Editor in Chief of 'Lasers in Medical Science,' for four years, and remains on the Editorial Board of this leading scientific medical laser journal. He has received multiple citations in 'Who's Who in Medicine and Healthcare', 'Who's Who in Science and Engineering' and 'Best Doctors in the UK'.
Dr Lanigan was awarded the a National Clinical Excellence Bronze Award in 2004. He frequently lectures at national dermatology meetings in the UK as well as meetings around the world. He has served on a number of scientific committees including chairing the International Affairs Committee of the American Society for Laser Medicine and Surgery and the British Skin Laser Research Group. He also acts as expert advisor to the Medical Devices Agency and the National Institute for Clinical Excellence (NICE).

Nick Lowe MD, FRCP, FACP
Cranley Clinic for Dermatology, London, UCLA School of Medicine, USA

Graduated from the *University of Liverpool Medical School*. Internal Medicine Specialist Training at the Royal Naval Hospital London, England and promoted Specialist in Medicine for the Royal Navy.
1970 Dermatology training at the *University of Southampton*.
1974 Senior Registrar and tutor in Dermatology, *University of Liverpool.*
1975 Research fellow, Dermatology *Scripps Clinic and Research Foundation*, La Jolla, California and Instructor *University of California, San Diego*.
1977 Assistant Professor of Dermatology at *UCLA School of Medicine*, Los Angeles. He established the Phototherapy and Psoriasis Treatment Centre and Dermatology Laser Service. In 1984 promoted to full Professor of Dermatology at UCLA.
1994 founded the Cranley Clinic for Dermatology in London, with clinical and research facilities and continued practice, teach and research in Santa Monica and UCLA.
Dr Lowe has published over 450 clinical and research publications. He has edited written 15 scientific and 4 educational books for the public.
He is on editorial boards of international medical journals and is a founding editor of the Journal of Cosmetic and Laser Therapy
He was principal investigator on over 200 clinical research projects in the last 25 years. His clinical and research interests include: Treatment of Aging Skin, Laser skin Therapy , Skin Cosmeceutcals and Pharmacology, Sunscreens and Photoprotection, General Dermatology, Phototherapy, Psoriasis, Scientific research of Cosmetic and Clinical Treatments.
Since early 1990's he has pioneered research with Botulinum toxins proving Botox effective for facial lines and severe sweating. His scientific innovations have focused on filler, lasers and novel ground-breaking skin care products.
Dr Lowe teaches at *UCLA School of Medicine* as Clinical Professor of Dermatology.
Fellow of:
American Academy of Dermatology, American College (FACP) and Royal College of Physicians (FRCP), American Academy of Cosmetic Surgery, American Society of Laser Medicine and Surgery, British Association of Dermatology, European Academy of Dermatology, Royal Society of Medicine
He has won scientific awards for presentations from the *American Academy of Dermatology* and has appeared on radio and television presentations about *New Therapies for Skin Diseases, Facial Rejuvenation, Botulinum Toxins, Laser Therapy, Skin Cancer, Sunscreen, Psoriasis*.

Leonardo Marini
SDC The Skin Doctors' Center, Italy

Leonardo Marini, dermatologist and surgeon, has been director of the Skin Doctors' Center, Clinic specialized in Dermatology and Dermatological surgery in Trieste , since 2005. He is Past President of the European Society for Laser Dermatology (ESLD) and the European Society of Cosmetic and Aesthetic Dermatology (ESCAD). He is honorary President of the Hellenic Society of Dermatological Surgery (HSDS) and a member of the European Academy of Dermatology and Venereology (EADV), where he's been appointed vice chairman of the Task Force for Laser Dermatology. Member of the American Academy of Dermatology (AAD), American Society of Laser Medicine and Surgery (ASLMS) and European Society for Mohs Micrographic Surgery (ESMS). Currently he is a professor for the School of Specialization in Dermatology e Venereology of the Faculty of Medicine and Surgery of the University of Verona.

Serge R. Mordon
INSERM, France

Professor Serge R. Mordon is a research director working in Lille, France for the French National Institute of Health and Medical Research (INSERM). He is the director of the Photomedicine Center (Lille University Hospital) and the director of the INSERM Laboratory #703. Activities of this Methodological and Technological Research Laboratory are in the field of interventional laser therapy procedures assisted by medical imaging and simulation. Since 1981, Professor Serge R. Mordon has been involved in the medical applications of lasers, particularly in dermatology and plastic surgery. More recently, he has focused his research on laser-assisted cartilage reshaping and photodynamic therapy for cancer treatment. He is an internationally recognized expert in laser-tissue interactions and laser applications in medicine. He is invited to teach a variety of laser courses at several European universities. He is an associate editor of the editorial board for the journal, *Lasers in Surgery and Medicine*. He has authored twelve issued patents and over 240 articles and book chapters. In 2007, he received the prestigious Caroline and William Mark Memorial Award from the American Society for Laser Medicine and Surgery in recognition of his outstanding contributions to laser technology and patient care.

Javier Moreno-Moraga
Instituto Médico Láser, Spain

Professor Javier Moreno-Moraga is currently Medical Director at the Instituto Médico Láser, the largest private clinic on lasers and others technologies in Spain.
In 1980 he was appointed Professor of Pathology and Surgical Clinics of the Complutense University of Madrid.
In 1978 Professor Moreno-Moraga was appointed Privat Dozent from Universität Krankenhaus Hamburg.
From 1980 to 1996, he was Professor at the Complutense University of Madrid in the Department of Surgery of the University Clinical Hospital of San Carlos, Spain.
In 1978 Dr. Moreno-Moraga obtained the degree of Dr. Medical Sciences with a thesis on the pancreatic encephalopathy in the UKE (Hamburg).
In 1979 Dr Moreno-Moraga obtained the degree of Doctor of the UCM Spain with the thesis of the syndrome the superior vena cava, reaching the Special Award of the Academy of Medicine in Spain.
Professor Moreno-Moraga has published large scientific peer-rewiewed papers in international medical journals as well as book chapters and more than 200 clinical presentations at international congresses and scientific meetings.
In 1996, Professor Moreno-Moraga was President of the Professional Union of Medical and Cosmetic Surgeons (UP). He is a member de European Society for Laser Aesthetic Surgery (ESLAS).

Max Murison
Welsh Centre for Burns and Plastic Surgery, UK

Maxwell Murison is a Consultant Laser, Hand and Plastic Surgeon at the Welsh Centre for Burns and Plastic Surgery. Maxwell kindled his interest in laser treatments whilst a trainee and was instrumental in the initial setting up of the laser centre in Bristol. Maxwell now runs a busy NHS and Private practice covering the major aspects of laser treatments. As well as vast experience in the field of cutaneous laser therapy, he has been developing advances in laser-based treatments in many areas, including local anaesthetic techniques, and the treatment of skin cancers, treatment of congenital vascular malformations amongst others publishing many of his findings. He lectures throughout the world on techniques he has developed to advance the remit and application of the technology. He has a logbook totalling over 3400 laser procedures and is an authority on the carbon dioxide laser and now hosts an Intercollegiate Fellow in Laser Treatment.

Stuart Nelson, M.D., Ph.D
University of California, USA

J. Stuart Nelson, M.D., Ph.D, is Medical Director of the Beckman Laser Institute and Medical Clinic, and Professor of Surgery, Dermatology and Biomedical Engineering at the University of California, Irvine. Dr. Nelson served as president of the American Society for Laser Medicine and Surgery (ASLMS) 2001-2002 and is now editor-in-chief of the ASLMS journal *Lasers in Surgery and Medicine*. Dr. Nelson has published more than 300 scientific articles and 15 book chapters. He has been awarded 15 patents for developing biomedical devices from the Patent and Trademark Office, United States Department of Commerce.

Carsten M. Philipp
Ev. Elisabeth Klinik Berlin, Germany

Carsten Philipp, born 1957 in Berlin, is assistant medical director of Germany largest hospital based department of laser medicine. Since 1987 he is working in laser applications in medicine including vascular lesions, surgery, endoscopy, PDT and diagnostics. He is co-editor of the journal Photonics & Lasers in Medicine (former Laser Medical Application) and current president of DGLM.

Rafael Serena
Clinica Planas, Spain

Rafael Serena, MD licensed in Medicine and Surgery at the Autonomous University of Barcelona. He is Head of the Laser Department and Botox Unit at Clinica Planas in Barcelona, Spain.
He is Co-Treasurer of ELA (European Laser Association), Secretary of SELMQ (Sociedad Espanola de Laser Medico Quirurgico) and member of many professional organizations including the European Society for Laser Aesthetic Surgery and the International Society of Cosmetic Laser Surgeons.
He is the Director of the annual Universitat Autonoma Barcelona (UAB)-Clinica Planas Laser Course, Professor of the laser y fototerapia en patologia dermatoestetica de la UAB -Colegio Oficial de Medicos Barcelona (COMB) and Master en Laser en Medicina i Cirurgia, fonaments i aplicacions by the Universitat Rovira i Virgili (URV).

Additionally, R. Serena MD has authored or co-authored several journal articles, has wroten his first book “El Arte de Rejuvenecer, Botox nuestro Aliado”, Ed Amat and has made many national and international medical presentations. He is member of the European Botulinum Toxin Advisory Board and Chairman of the Spanish Botulinum toxin Advisory Board. From the last year belongs to the Advisor Board of the University Autonomus of Barcelona (UAB).

Dr Samira Batul Syed
Great Ormond Street Hospital for Children Foundation Trust. London, UK

I am a full time paediatrician with a special interest in vascular anomalies and laser therapy in children. I trained at University College Hospital Medical School in London. Having completed my house jobs a UCH and Barnsley hospitals, I gained ten years experience in general paediatrics, neonatal medicine and community child health within the UK, in Tanzania, Pakistan and in Finland. The last 18 years I have worked at Great Ormond Street Hospital in the department of Paediatric Dermatology. My work has advanced towards the care for patients with complex vascular and lymphatic malformations requiring a multi disciplinary approach and coordinating specialist care. I participate in the joint vascular anomalies and Proteus syndrome clinics and am part of the multi disciplinary team who look after difficult and challenging patients with rare and complex vascular anomalies.
I am laser trained to treat all types of vascular birthmarks and manage day to day running of the skin laser unit with our laser team.

Peter Tomlins
Barts and The London School of Medicine and Dentistry, UK

Dr Tomlins is an academic member of staff within the Centre for Diagnostic and Oral Sciences. He completed his undergraduate study at Lancaster University, obtaining a first class BSc (Hons) degree in Physics with Computational Physics. He joined the UK’s National Physical Laboratory (NPL) as a Research Scientist in 2002 and worked in the field of fibre optic telecoms. At NPL, he developed an interest in understanding the physics of biological material and studied part-time with Cranfield University for his PhD in Biomedical Optics. In 2006 he was appointed as an NPL Senior Research Scientist and over the period 2007 - 2010 he led the Biophotonics group there as Lead Scientist and Technical Area Leader. In 2009 Pete was appointed as an Honorary Senior Lecturer in Dental Biomaterials within the Dental School at Birmingham University and in August 2010 he took up his current post of Senior Lecturer at Barts and The London Dental School.

Dr Tomlins regularly presents his research at national and international meetings. He is also a Chartered Physicist of the Institute of Physics (IoP) and member of the IoP Optical Group committee.

Mario A. Trelles
Instituto Médico Vilafortuny/Antoni De Gimbernat Foundation, Spain

Mario A. Trelles, MD PhD, is internationally renowned for his expertise and contributions to laser advancements in medicine and surgery. He is specialized in general, plastic, aesthetic and reconstructive surgery and PhD in laser applications in medicine and surgery.
Dr. Trelles is currently the Medical Director of Vilafortuny Medical Institute in Cambrils, Spain.

Claudia I. M. van der Lugt
Alizonne, The Netherlands

Drs Claudia van der Lugt obtained her medical degree at the University of Groningen in 1991.
Being specialised in laser techniques and with her interest in other non-invasive treatments she started her own private clinic “Alizonne”, preventive and cosmetic medicine, in Meijel, the Netherlands in 1997.
The main drive of van der Lugt is to combine non-invasive treatments for the rejuvenation of the face and body. Since 1996 she has been using lasers of different wavelengths, taken part in studies and designed concepts for best results. Her knowledge on laser-tissue interaction and outcome of different techniques is extensive. Lasers, LED, IPL, ultrasound, RF and other on energy based devices have taken an enormous development and the use of these modalities needed to be standardised and regulated. This has led to the foundation of the Dutch Aesthetic Laser Association, DALA, of which van der Lugt is the president.
As the demand for weight correction and body contour treatments grew very high, it was challenging to develop a non-invasive method to attack this problem.
During the last years “The Alizonne Therapy”; body contouring weight reduction, has become a well respected obesity treatment in the Netherlands, the UK and is adopted in a Network of international clinics.
Her main interest at the moment is focused on the treatment of stretchmarks and cellulite with the LED application combined with other techniques.
Her teaching quality and transmitting knowledge to colleagues has proven to be of high standards.
Since 2003 she is specialised in the injection-lipolysis treatment resulting in a position as a member of the Medical Board of the Network-lipolysis ISL.

Mark Wainwright
Liverpool John Moores University, UK

Mark Wainwright has been involved in photosensitiser research and development since 1987, initially in the photodynamic therapy of cancer, but for the past 19 years mainly in infection control applications, especially concerning conventional drug resistance. He joined LJMU in 2005 and with the University formed the spin-out drug-discovery company Pharmalucia in 2008. His book *Photosensitisers in Biomedicine* was published in 2009.

Steven Marc Zeitels
Harvard University* and *Boston Massachusetts General Hospital, USA

Steven M. Zeitels, MD, FACS is Eugene B. Casey Professor of Laryngeal Surgery: Harvard Medical School and Director of Center for Laryngeal Surgery and Voice Rehabilitation at Massachusetts General Hospital, USA. He is well known for his pioneering work utilizing angiolytic lasers for minimally invasive surgical techniques to treat benign and malignant disease and for creating laryngeal laser surgery in office-based settings under topical anaesthesia. His presentation will serve as model for establishing minimally invasive laser techniques in other disciplines.

ORAL PRESENTATIONS

SESSION 1 - Vascular 1

1.2
Treatment of Port Wine Stains - How far are we from perfection?
Carsten Philipp
Elisabeth Klinik, Berlin, Germany

Laser treatment of vascular lesions including Port wine stains (PWS) was introduced by Leon Goldman 1963. Since then treatment of PWS (or capillary malformations / capillary venous malformations (CM/CVM) with regard to the recent nomenclature) was and is still a focus of research and development. Several improvement have been made, milestones were the introduction of the flash lamp pumped dye laser (FPDL), the optimization of wavelengths and the use of larger spot sizes, the introduction of surface cooling and the sequential use of different wavelengths and IPL's. With increasing treatment safety an early onset of therapy in young children became possible and clear benefits could be shown with regard to the number of treatments needed for primary clearing, completeness of clearing and lack of recurrence (so far this can be assessed, due to a limited follow up time of about 10 years).

But nevertheless complete clearing is still achieved in a minority of patients. Most studies showed a complete clearing in 1/5 of all patients, gradually changes in most patients and some patients with little, partial or no response. The centrofacial region was identified as usually less responding, but in some PWS lateral regions does not respond also, dark PWS associated with Sturge-Weber syndrome usually respond least. With longer persistence of the PWS tuberous transformation and nodular angiomas appear in most patients. About 15% of PWS (treated in adolescents or adults) show some recurrence, within some years.

Reasons are hidden in the pathology of the individual PWS and the tissue response to vascular damage. Using capillary microscopy or OCT at least two types of PWS may be discriminated, one more superficial purely capillary type and one with deeper extensions and larger ectatic vessels. With the variations in vessel architecture the perfusion rate may differ, which can be assessed with thermography and laser doppler imaging. These variations may influence the choice of parameters and are the rational for using less selective, deeper penetrating lasers as Alexandrite and Nd:YAG or IPL with extensive cooling, and more recently non thermal but also selective PDT with a short drug delivery to light application interval. But the problem of recurrence could not be solved with these treatment modalities as well. As recurrence may be induced not only by persistence and recanalization of vessels but also by the inflammatory reaction of the tissue after laser therapy, anti-angiogenic substances are currently under investigation, with preliminary results showing Rapamycin superior compared to Imiquimod.

These strategies show some promises, but still remain not 100% satisfactory. Some patients develop substantial diffuse tissue overgrowth, e.g. at the lips but also at the nose and cheeks, some even in the bone. In the future it will be necessary to assess all PWS in early childhood for their individual type, to choose the right treatment. We do not have to treat everybody with the full range of options and maximum aggressiveness, but have to learn which patient requires which strategy, prior to the development of the full range of symptoms.

1.3
Split-face comparison of intense pulsed light with short- and long-pulsed dye lasers for the treatment of port-wine stains
Philipp Babilas, Stephan Schreml, Tatiana Eames, Rolf-Markus Szeimies, Michael Landthaler
Department of Dermatology, Regensburg, Germany

So far, pulsed dye lasers have been regarded as the gold standard in the treatment of port wine stains (PWS). Recently, intense pulsed light (IPL) has been reported to achieve more pronounced fading in some patients.

To evaluate the efficacy and the side effects of IPL treatment of PWS in a direct comparison to the short-pulsed dye laser (SPDL) and the long-pulsed dye laser (LPDL).

Test spots (n=158) were applied with IPL (l_{em} = 555-950 nm, pulse duration: 8-14 ms (single pulse), fluence: 11-17.3 J/cm^2), the SPDL (l_{em} = 585 nm, pulse duration: 0.45 ms, fluence: 6 J/cm^2), and the LPDL (l_{em} = 585/590/595/600 nm, pulse duration: 1.5 ms, fluence: 12/14/16/18 J/cm^2) in a side-by-side modus in untreated (n=11) and previously treated (n=14) patients with PWS. Lesion clearance was evaluated by three blinded investigators based on follow-up photographs six weeks after treatment. Incidence of side effects was assessed.

In previously untreated PWS as well as in pretreated PWS, IPL treatments were rated significantly ($p<0.05$) better than treatments with the SPDL. In both groups, IPL and LPDL treatments did not differ significantly. Side effects were few in all settings.

In PWS resistant to dye laser therapy, IPL showed additional lesion clearance. The use of IPL increases the therapeutic possibilities in PWS.

SESSION 2 - PDT for Skin Lesions

2.1
Novel ways to use PDT
Merete Haedersdal
Bispebjerg Hospital, University of Copenhagen, Copenhagen, Denmark

Topical PDT is a mainstream treatment for premalignant lesions and selected cases of NMSC. In Europe, PDT traditionally is delivered with MAL and red LED light, which is highly effective for thin dysplastic lesions. However, PDT is time consuming, painful, and less effective for thick lesions. There is, therefore, a need to look for alternative ways of delivering PDT.

New available procedures include i) daylight-mediated PDT, which is a low-pain, easy-to-do procedure that is highly effective for thin actinic keratoses, and ii) fractional laser-assisted PDT, which is a new intensified treatment concept with promising data for the treatment of thick lesions.

We suggest that these new treatment advances are used to individualize the way of delivering PDT to different types of patients

2.2
Topical photodynamic therapy: accentuate the positive by eliminating the negative
Sally Ibbotson
Photobiology Unit, University of Dundee, Ninewells Hospital & Medical School, Dundee, UK

Topical photodynamic therapy (PDT) is widely used for the treatment of superficial non-melanoma skin cancer and dysplasia. There is a sound evidence base to support its use and both National and European guidelines, and it has become a mainstay treatment in dermatology services. However, there are some adverse effects of PDT which will be discussed. The main limitation to treatment is pain during irradiation. There are several approaches which can be taken to reduce discomfort and improve patient tolerance of PDT and, in particular, the use of low irradiance ambulatory PDT appears to be less painful and to have considerable advantages for patients. These advances will be covered as they will encourage the wider acceptance of PDT by those administering treatment and improvement in patient satisfaction with therapy.

2.3
Quality of life and photodynamic therapy
Waseem Jerjes[1,2], Colin Hopper[2,3]
[1]Leeds Institute of Molecular Medicine, Leeds, UK, [2]UCL Department of Surgery, London, UK, [3]University College London Hospitals, London, UK

Several valuable quality of life (QoL) questionnaires have been developed and successfully used when assessing the level of function and dysfunction in cancer patients. These questionnaires have been used to assess outcome following the conventional treatment modalities (surgery, radiotherapy and chemotherapy).

To date there is no questionnaire used to assess the quality of life following photodynamic therapy, and in particular in the management of head and neck pathologies.

We have developed the first quality of life questionnaire for patients undergoing photodynamic therapy. The questionnaire was developed from the "University of Washington Quality of Life Questionnaire for Head and Neck Cancer Patients".

Thirty-eight patients agreed to take part in this study. The quality of life was assessed before, during and up to 3 months after photodynamic therapy.

The main areas covered: Pain, Visual problems, Breathing problems, Swallowing problems, Speaking problems, Taste, Saliva, Disfigurement, Drug reactions, Skin photosensitivity, Activity of daily living, Impact on social life, Mood, Anxiety and compared to previous experience with surgery, radiotherapy, chemotherapy and/or photodynamic therapy.

Pain was the main issue in the majority of the patients, and was often described as severe in nature (P<0.05). Visual, breathing, speaking and swallowing problems improved significantly 22-28 days post-PDT (P<0.001). Taste and saliva production was not an issue for any of the patients suffering from oral and oro-pharyngeal pathologies, unlike post chemo-radiation. Significant improvement of activity of daily living, impact on social life, mood and anxiety was reported by patients 36-42 days post-PDT (P<0.001).

SESSION 3 - New developments in PDT

3.2

Flexible light emitting textiles for Photodynamic Therapy in Dermatology

Serge Mordon[1,3], Cédric Cochrane[2,3], Jean Claude Lesage[1,3], Vladan Koncar[2,3]
[1]INSERM U703, LILLE, France, [2]ENSAIT - GEMTEX, ROUBAIX, France, [3]Univ Lille Nord de France, LILLE, France

Actinic Keratosis (AK) are one of the most common presenting complaints for dermatologists. Photodynamic therapy (PDT) is now proposed as a treatment option. PDT is well tolerated, has excellent cosmetic results, and has reported cure rates between 69 and 93 %, with limited side effects.

However, due to the complexity of the human anatomy, it difficult to guarantee a uniform light illumination of the skin in particular for the bald scalps. The development of flexible light source would considerably improve the homogeneity of light

Light emitting textiles were developed using Plastic Optical Fibre (POF) (diameter of 250 µm, woven in weft direction) and Polyester yarns (fibre titer of 330 dtex woven in wrap direction). The prototype fabrics, with a weft density of 37 POF/cm, and specific satin weaves (patent pending) were woven using hand and automatic weaving looms. In order to correct the decrease of side-emitted radiation intensity along the fabric, both fibres ends were coupled to a laser diode. When using 5W diode laser and a 100 cm² textile diffuser, the average fluence rate was 18 ± 2.5 mW/cm². Due to the high efficiency of system, the optical losses were limited. The temperature elevation was 0.6°C for a 10 minutes illumination.

In conclusion, flexible light emitting textiles meet the basic requirements for PDT. Large (500cm²) textile light diffusers can be easily manufactured and could be used on skin, but also in peritoneal or pleural cavities. They could be a cheap alternative as light source for PDT.

3.3

Indocyanine green (ICG): a dye that improves laser assisted coagulation of blood vessels

Wolfgang Bäumler[1], Gal Shafirstein[2]
[1]University of Regensburg, Regensburg, Germany, [2]University of Arkansas, Little Rock, USA

The treatment of large vessels (e.g. leg veins, PWS) can be performed in clinical practice using near infrared (NIR) lasers. However, due to low absorption of NIR light in blood vessels, the clinical results are still suboptimal. The absorption of the NIR light can be significantly increased with intravenous introduction of an indocyanine green (ICG) dye. In this work, a mathematical model was used to delineate clinically valid settings for ICG and NIR lasers for the treatment of leg veins.

Finite element method was used to simulate light propagation and absorption and heat generation in a skin-like geometry. The simulations were conducted for 755 nm and 810 nm light wavelengths, which are emitted by alexandrite and diode lasers, respectively. Five different laser settings, six different vessel diameters (0.1-2 mm) and three ICG concentrations (0, 1 or 2 mg/kg body weight (BW)) were used to calculate the temperature field spatial distribution as a function of time.

The diameter of the blood vessels affects the temperature distribution during and following laser irradiation, with and without ICG. Adding 1 or 2 mg/kg bw of ICG caused significant temperature increase (15-35°C) in blood vessels with a diameter of 0.1-1 mm and steep temperature gradients in 1.5-2 mm diameter blood vessels.
Intravenous application of ICG at 1-2 mg/kg may improve coagulation of blood vessels with 0.1-1 mm diameter irradiated with appropriate laser. Very recently, these findings were supported by an animal study and by clinical studies.

SESSION 4 - Vascular 2

4.1

Chemical sclerosant and laser in the treatment of leg varicosities

J. Moreno-Moraga, M. Trelles, J. Royo de la Torre
Instituto Médico Láser, Spain

Background
Varices measuring <1.5 mm in diameter in patients with Fitzpatrick skin type IV makeS treatment very problematic.

Nowadays, there are numerous procedures proposed for the treatment of spider veins (sclerotherapy, laser, dual laser, laser with polidocanol). Furthermore, treatment of patients with higher Fitzpatrick skin types and fine vessels continues being problematic, especially when laser treatments are chosen by applying.

Sclerosis of very fine vessels using liquid or foam is less efficient than in other thicker oneS, due to the flow rate and the low quantity of sclerosing agent.

In thiner than 1.5 mm, laser treatment requires larger amounts of energy with shorter pulses. This could increase the risk of burns and side-effects in patients with high Fitzpatrick skin phototypes.

Material and methods: Three groups of 45 patients each, skin type IV and vessels measuring thiner than 1.5 mm in diameter, were enrolled for 2 treatment sessions at 8 weeks apart.
Group A, Polidocanol (POL) micro foam injection
Group B, Nd:YAG laser alone
Group C, laser after POL injection.

Low energy laser pulses had 8 Hz repetition rate were used and the hand piece was moved over a 3cm vein segment with an average of maximum 5 laser passes, and with a total irradiation time of one second per pass.

The degree of clearance was evaluated by 2 independent physicians and compared with the patients' satisfaction index.

Burns, pigmentation abnormalities, and matting were considered complications.

Results: Sixteen weeks after the second treatment, the degree of clearance after examining photographs, the patients satisfaction index plotted on a VAS scale and the statistically comparison of the results of all three groups, have shown that results were significantly better for Group C ($p<0.0001$).

No significant differences in complications were noticed between the three groups.

Efficacy of combining POL and laser proved safe and satisfactory results in 96% of patients using low flounce laser pulses with a total cumulative energy in the 3cm venous segment, higher than that of conventional treatment. Very few and transient complications were observed.

Discussion: The total cumulative energy in the 3-cm venous segment using the dynamic mode is considerably greater than that administered using the conventional mode, although it must be applied more gradually and without sudden changes in temperature in the epidermis.

It remains to be seen whether the sclerosant foam can improve the laser efficacy or it can change the biological vessels behavior to a laser emission.
But it wasn't found this improvement when the chemical sclerosant is used in liquid form. Could we say that the foam is very much important than the action of the chemical sclerosant by itself? There are several studies showing the changes into the vessels in the presence of the foam which could alter how the laser works on this situation.

The increase in methemoglobin fraction and changes in light transmission due to the accumulated intravascular heat could be significant.

Conclusions: The dynamic mode seems efficacious and safe for treating patients with spider veins.

4.2
A comparative study of the efficacy of endovenous laser treatment of the incompetent great saphenous with external air cooling and without tumescent anesthesia
Serge R. Mordon[1], Esteban Hernández[2], Mohamad Feras Marqa[2], Jiri Vokurka[3], Nacim Betrouni[1], Mario A. Trellis[2]
[1]INSERM U703, Lille University Hospital, Lille, France, [2]Instituto Médico Vilafortuny, Fundación Antoni de Gimbernat, Cambrils, Spain, [3]RIVA clinic, Brno, Czech Republic

Background: Endovenous laser treatment (ELT) has been proposed as an alternative in the treatment of reflux of the great saphenous vein (GSV). Before the procedure, peri-saphenous subcutaneous tumescent saline solution infiltration is usually performed. However, diffusion of this tumescent fluid is rapidly observed and can potentially reduce the efficacy as a heat sink. External skin cooling with cold air is proposed as an alternative solution. The objective of this study is twofold: i) to compare endovenous laser treatment without and with air cooling by realistic numerical simulations, ii) to report our experience on ELT in which external air cooling is used without the classic tumescent anesthesia.

Methods: An Optical-Thermal-Damage Model was formulated and implemented using finite-element modelling. The general model simulated light distribution using the diffusion approximation of the transport theory, temperature rise using the bioheat equation and laser-induced injury using the Arrhenius damage model. Parameters, used in clinical procedures, were considered: power: 15 W, pulse duration: 1 sec, fibre pull back: 3 mm increments every second, cold air applied in continuous mode during ELT, no tumescent anaesthesia. Simulations were performed for vein locations at 5, 10 and 15 mm in depth, with and without air cooling.

The clinical study was performed bbetween October 2008 and February 2010, 232 patients underwent ELT. There were divided into 2 groups: Group A (COOLING): 192 patients (124 women, 68 men) from 23 to 66 years. In Group A, no type of tumescent anesthesia was administered. Instead, external air cooling in a continuous flow was pointed where the laser beam was aimed. Group B (TUMESCENCE), consisted of 40 patients (12 men, 28 women). Age of patients ranged from 28 to 65 years. In Group B, ELT was carried out using tumescent anesthesia. Otherwise, the procedure was similar for the 2 groups: the fiber was guided and positioned under ultrasound guidance. Laser power (980nm) was set at 15 W .Irradiation of 1s and 1s delay time were constant in both limb segments and a constant pull back of the fiber was carried out during laser irradiation pause. Ultrasound was carried out to reevaluate vein closure at the end of surgery and 2, 8 weeks and one year after. During follow-up, clinical incidents were checked to identify efficacy of air cooling method in contrast to the other group of patients with tumescent anesthesia. Incidences such as burning, dischromia, pain and/or dysesthesia as well as time used for surgery were recorded.

Results: For a vein located at 15mm in depth, no significant difference was observed with and without cooling. For a vein located at 10mm in depth, surface temperature increase up to 45°C is observed without cooling. For a vein located at 5mm, without cooling, temperature increase leads to irreversible damage of dermis and epidermis. Conversely, with air cooling, surface temperature reaches a maximum of 38°C in accordance with recordings performed on patients. The clinical study confirmed the numerical simulation. Groups A & B scored 96% closure, which was maintained constant one year after surgery. At one year, small indurations, which were noticed in 5 patients, had disappeared. The 4% failure presenting partial vein occlusion was satisfactorily treated at the time of the last control after ELT, using a chemical sclerosant. With external air cooling, ELT lasted 17.5 minutes for the whole leg compared to 38.5 minutes when using tumescent anesthesia.

Conclusion: ELT surgery for the GSV can be safely conducted using the air cooling method and is as efficient as ELT done with tumescent anesthesia but requires a significantly shorter surgical time.

4.3
ENDOVENOUS LASER
CARLOS BONÉ
CENTRO TRATAMIENTO DE VENAS, PALMA DE MALLORCA, ISLAS BALEARES, Spain

INTRODUCTION Significant advances have occurred in the management of venous insufficiency since I started the Endovenous Laser Ablation (Endolaser-EVLA)) in 1997.The Endolaser appear to be equal to or better than stripping and other minimally invasive techniques, with better quality –of-life. Early reports suggest that Endolaser are associated with a low prevalence of neovascularization.

THECNIQUE Some changes over the last decade have been produced. A variety of laser wavelengths are in use for this procedure with similar results. We can use intermittent pulsation or continuous energy (12-14 W) approximately 1 mm/s. The laser energy may be adjusted depending on the vein treated. It is very important to ensure the contact between fiber and wall vein. We can use local anesthesia, dilute solution of anesthesia or troncular anesthesia.

RESULTS With our Endolaser procedure we have a 98% of occlusion and fibrosis. The major complications following Endolase are rare. We think the Endolaser procedure is a very effective technique and can replace, at this moment, other treatments for saphenous incompetence.

4.4
Indocyanine green-augmented diode laser treatment of port wine stains: clinical and histological evidence for a new treatment option from a randomized controlled trial (RCT)
Annette Klein[1], Rolf-Markus Szeimies[2], Wolfgang Bäumler[1], Michael Landthaler[1], Philipp Babilas[1]
[1]Department of Dermatology, University Hospital Regensburg, Regensburg, Germany, [2]Department of Dermatology, Knappschaftskrankenhaus Recklinghausen, Recklinghausen, Germany

Complete clearance of port wine stains (PWS) is difficult to achieve, mainly because of the resistance of small blood vessels to laser irradiation. Indocyanine green (ICG)-augmented diode laser treatment (ICG+DL) may overcome this problem.

This pilot study evaluates the feasibility of ICG-augmented diode laser therapy of PWS and compares safety and efficacy of ICG+DL to the flashlamp-pumped pulsed dye laser (FPDL).

In a prospective randomized controlled clinical study, 31 patients with PWS were treated with FPDL (λ_{em} = 585 nm, 6 J/cm², 0.45 ms pulse duration) and ICG+DL (λ_{em} = 810 nm, 20-50 J/cm², 10-25 ms pulse duration, ICG-concentration: 2 mg/kg b.w.) in a split-face modus that included histological examination (H&E, CD34). Two blinded investigators and the patients assessed clearance rate and cosmetic appearance.

ICG+DL therapy induced photocoagulation of medium and large blood vessels (>20 µm diameter) but not of small blood vessels. According to the investigators' assessment, clearance rates and cosmetic appearance were better after ICG+DL therapy than after FPDL treatment (p=0.114, p=0.291), although not up to a statistically significant level, whereas patients considered these parameters superior (p=0.003, p=0.006).

ICG+DL represents a new and promising treatment modality for PWS, but laser parameters and ICG-concentration need to be further optimized.

SESSION 5 - New Technologies

5.1

Are There Advantages in Laser Platforms for Multiple Treatment Modalities

Mario Trelles
Instituto Médico Vilafortuny, Cambrils, Spain

Treatment of pigmented and vascular lesions, tattoos, hair removal and skin rejuvenation with lasers are well established procedures in dermatology. Multi-laser platforms are especially attractive for Doctors who want to have the possibility of practicing a variety of applications of different wavelengths safely, to obtain effective results with minor side effects.

We have examined a Multiline Laser Platform (Linline™, Belarus) that has an advanced technological concept, offering a group of laser hand pieces for treating a variety of skin conditions. Wavelengths such as 540 nm, 1079 nm, 964 nm and 755 nm can be chosen for accurate selective chromophore absorption.

The particular performance of the different lasers in sequential pulses combining wavelengths, changes characteristics of the target optical absorption increases treatment outcome and efficacy, respecting condition of adjacent tissue. Moreover, laser heads can be adapted for incisional surgery and to produce coagulation effects.

For the treatment of aging skin, the Er:YAG laser hand piece mounts a sophisticated SMA optics which delivers various thousands of 50 µm beams, for superficial or deep energy deposit, depending on the fluences programmed to achieve rejuvenation effects.

5.2

Fractional laser-assisted drug delivery

Merete Haedersdal
Bispebjerg Hospital, University of Copenhagen, Copenhagen, Denmark

Fractional laser-assisted drug delivery represents a new technique to deliver topical drugs. Perspectives are enormous due to the potential of expanding on available topical drugs to be delivered through the skin barrier.
This presentation will give up-to-date information on ablative fractional lasers to facilitate delivery of small (Da) and large molecules (KDa). Data will be presented from basics to clinics, focusing on the fact that the technique is nowadays being brought into clinics.

5.3

Radiofrecuencia fraccionada sublativa para el tratamiento de la estría blanca: una novedosa y efectiva opción terapéutica

Sublative fractional Radiofrecuency for the treatment of white stretch marks: a new and effective therapeutic option

Pablo Naranjo[1], Cesar Arroyo[2], Ana Sanchez[1], Mercedes Martinez[2]
[1]Clinica Elite Laser, Madrid, Spain, [2]HM Hospital Monteprincipe, Madrid, Spain

Para el tratamiento de la estría roja disponemos actualmente de numerosas opciones terapéuticas como la luz pulsada, el láser de colorante pulsado, el láser Nd:Yag, etc.. Sin embargo, para el tratamiento de aquellas estrías que han perdido una gran parte de su vascularización y que por lo tanto percibimos como blancas, son escasas y de menor efectividad las terapias a aplicar. Pero son precisamente las estrías de este segundo tipo las que originan un mayor número de consultas por parte de los pacientes. La aplicación de la radiofrecuencia fraccionada subablativa ha supuesto un gran avance en dichos tratamientos puesto que desde la primera sesión el paciente percibe una mejoría tanto en la longitud como en el diámetro, como en el color nacarado de la misma, todo ello con un período de recuperación muy reducido .

Objetivo
Ver la evolución de los pacientes con un nuevo sistema basado en la estimulación y remodelación dérmica con escasa ablación superficial, valorando el tiempo de recuperación y el grado de satisfacción experimentado.

Materiales y métodos
RF fraccionada sublativa (EMatrix Syneron Candela)
Protocolo mínimo de cinco sesiones con intervalos superiores a cuatro semanas
Pacientes que cumplan estos criterios de selección
Edades comprendidas entre los 18-50 años
Sin tratamientos previos en los seis meses anteriores
Sin enfermedad infecto contagiosa ni enfermedades del colágeno actualmente
Sin tratamientos inmunosupresores.
Análisis fotográfico
Encuesta de satisfacción

Resultados
Aun por concluir, los resultados preliminares son muy alentadores y nos permiten incluir una alternativa terapéutica novedosa con escasos efectos colaterales.

5.4
1 YEAR FOLLOW-UP AFTER DUAL WAVELENGHT EMITTING LASER (755nm AND 1064nm) FOR TREATMENT OF LEG TELANGIECTASIA AND RETICULAR VEINS
Adriana Ribe, Patricia Homar
Ribe Clinic, Barcelona, Spain

1064nm laser is effective in treating telangiectasia and reticular veins of the legs. On the other hand, 755 nm wavelength has recently proved to be useful in the treatment of vascular pathology. A clinical study with a laser that sequentially fires 755 and 1064nm to treat telangiectasia and reticular veins of the legs was performed and we present 1 year follow-up.

Eighteen women and 2 men with leg vein pathology (veins measuring 0.2-1.5 mm in diameter) were included in the study. In each session, the vein was treated with dual wavelength laser with the 5 mm spot size. Fluences from 30-35 J/cm2 for the 755nm and between 45-70 J/cm2 for the 1064nm and pulse width from 40 to 10 ms were applied. Two-4 sessions 4 weeks apart were recommended. Pictures were taken before each session. Patients were examined 1 year after the last session.

After the 1st session an average of 50% clearance (decrease in redness and/or length and/or width of the vein) was observed and up to 70% after the 2nd session. At 1 year follow-up the results obtained after the last laser session were maintained in all patients. One patient with phototype IV presented mild hiperpigmentation.
Leg telangiectasia and reticular veins treated with a new laser that sequentially fires a dual wavelength, 755 and 1064nm, is a very effective and safe treatment. It produced 50% and 70% clearance after the 1rst and 2nd session, respectively and the results are maintained at 1 year follow-up.

SESSION 6 - PDT: Anti-microbial and Mechanisms

6.1
The Current State of Photodynamic Antimicrobial Chemotherapy (PACT) in Microbiology
Mark Wainwright
Liverpool John Moores University, Liverpool, UK

It is increasingly acknowledged that the photodynamic approach is highly successful in eradicating microbial species in vitro, and that the conventional drug resistance status of the microbe has little effect on this. Given the scarcity of new, effective conventional antimicrobial drugs, this is surely a positive. However, the development of the photodynamic approach for clinical end-use has been tortuous, and is still struggling to gain much acceptance.

Where are the trials of this approach for topical disinfection? Why isn't this already an option in the treatment of infected ulcers and burn wounds? What are clinicians and regulators afraid of?

The fact is that PACT IS being used regularly - and safely - in other parts of the world. Microbial diseases such as onychomycosis, herpes vulgaris and even pulmonary tuberculosis are being treated using the photodynamic approach, often with photosensitisers which are used regularly in other, non-photodynamic applications.

Clearly, any introduction of PACT into the clinics of Western Europe will need to be careful and gradual. However, photoactivated therapies such as PUVA are used routinely in our hospitals and ‘safe' photoantimicrobials are readily available. Potential, non-chemical problems involving light activation, requisite staffing and perhaps a

move away from self-medication will all require consideration, but PACT as an approach to local/topical infection offers significant opportunities for conventional antimicrobial conservation and the concomitant slowing of microbial resistance development.

6.2

Fast and effective photodynamic inactivation of bacteria by using short and intense light flashes of an IPL

Wolfgang Bäumler,
University of Regensburg, Regensburg, Germany

A new approach to inactivate microorganisms is the photodynamic process. Microorganisms such as bacteria are incubated with a photoactive dye (photosensitizer) that is subsequently irradiated with visible light. Both short incubation times and irradiation are of importance where time-consuming processes must be avoided like either in industrial or medical disinfection. Photodynamic inactivation of different bacteria species, *S. aureus*, MRSA, *Bacillus atrophaeus* and *E. Coli (e.g. EHEC)*, was investigated using incubation times of 10 seconds with TMPyP (5, 10, 15, 20-Tetrakis (1-methylpyridinium-4-yl)-porphyrin tetra p-Toluenesulfonate) as the respective photosensitizer in combination with short pulses (ms) of an intense pulse light source as the respective light source. A photodynamic killing efficacy of up to 6 $\log_{10}$ steps was demonstrated using a concentration range of 1 - 100 µM TMPyP and multiple light flashes of 100ms (from 20J/cm^2 up to 80 J/cm^2). We could demonstrate for the first time that a light flash of 100ms is enough to generate sufficient amounts of reactive oxygen species upon photosensitizer activation to kill relevant key pathogens. Overall antimicrobial photodynamic inactivation seems to be a promising tool for clinical purposes where savings in time is a critical point to achieve efficient inactivation of microorganism on surfaces.

6.3

The effect of ABCG2 Transporter Inhibition and Ferrochelatase Activity on PDT Efficacy: An *In Vitro* Study

Gemma Barron, Julie Woods, Harry Moseley
University of Dundee, Dundee, UK

Protoporphyrin IX (PpIX) is a highly phototoxic photosensitiser used in photodynamic therapy (PDT). A way to improve PDT efficacy is to examine the factors that can modify PpIX accumulation, for example, transporter molecules and haem biosynthetic enzyme activity. The study aim was to investigate the influence of modulating the endogenous porphyrin transporter ABCG2 and also ferrochelatase activity on PpIX content in a variety of cultured human cells from the epidermis (HaCaT), oesophagus (OE19), brain (SHSY5Y) and bladder (HT1197).

Porphyrin content was identified using high performance liquid chromatography with fluorescence detection (HPLC-FL) and quantified by total cell porphyrin (TCP) content. Porphyrin localisation was achieved by confocal microscopy. Cell-specific differences in ALA- and MAL-induced PpIX were observed; OE19 and HT1197 cells produced more cell associated PpIX than HaCaT or SHSY5Y cells. Further cell differences were identified in both PpIX localisation and ferrochelatase activity. Co-incubation of ALA with the specific ABCG2 transporter inhibitor Ko-143 was consistently more effective than ALA alone at inducing phototoxicity in HaCaT cells to PDT (1.5 J/cm^2). This result was also observed with MAL but to a lesser extent. Our data shows that understanding the cell specific differences that influence PpIX accumulation is critical when developing specific targeted approaches toward improving PDT efficacy.

6.4

Management of skin pathologies using PDT: single-institute experience

Waseem Jerjes[1,2], Colin Hopper[2,3]
[1]*Leeds Institute of Molecular Medicine, Leeds, UK,* [2]*UCL Department of Surgery, London, UK,* [3]*University College London Hospitals, London, UK*

Photodynamic therapy (PDT) is a valuable tool in managing premalignant and malignant conditions of the skin. We present our institute experience in the use of PDT in the management of skin pathologies.

Four studies were carried out in our institute. Skin pathologies treated were actinic keratosis, basal cell carcinoma and squamous cell carcinoma. We have also looked at the curative and cosmetic effect of PDT on peri-orbital skin cancers.

5-ALA-PDT and/or mTHPC-PDT offer effective alternative treatment for various skin premalignancies and malignancies. It is associated with excellent functional and cosmetic results.

SESSION 7 - Pigmented Lesions & Tattoos

7.1

Lasers, intense pulsed lights and Radiofrequency systems for pigmented lesions and darker skin phototypes

Nicholas Lowe[1,2]
[1]*The Cranley, London, UK,* [2]*UCLA School of Medicine, Los Angeles, USA*

A significant percentage of the population has skin of colour but may be now treated with modern laser, pulsed light radiofrequency and other minimally invasive systems providing the correct system, correct fluencies and pulse duration are used together with appropriately trained operator.
Main uses for these systems are:

Skin rejuvenation.

- Benign pigmented lesions.
- Scarring.
- Destruction of benign lesions e.g. seborrhoeic keratoses.
- Skin tightening procedures.
-

Effective laser therapy in darker skin types can successfully be completed, however, greater caution is required than in skin phototypes 1 to 2 because of the increased risk of post treatment dyspigmentation in darker skin phototypes.

Increased risk of pigment damage by lasers and intense pulsed lights are the result of the absorption spectrum of melanin, which ranges from the short wavelengths of ultraviolet-250 nanometers to infrared 1200 nm. The absorption gradually decreases with the longer wavelength.

Darker skin phototypes can be safely treated providing the melanin unit in the hair follicles can be left undamaged by the laser. This is obviously however a potential problem in areas where there is relatively sparse hair for example on the neck in many female patients. Repigmentation of laser treated skin derives partly from hair follicle melanocytes. Unintended melanocybe thermal injury may result therefore in a permanent loss of pigment in certain areas such as the neck and the front of chest in women.

Some laser systems "competes" emit their engery within the melanin absorption, of the patient's melanin "competes" with the target chromophone and lesion for laser treatment. This includes all lasers of 532 nm through pulsed dye lasers 585, 600 nm, ruby laser 694 nm, Alexandrite laser 755 nm, diode laser 810 nm and double frequency coupled Nd:YAG at 1064 nm.

Most lasers with emission longer than these wavelengths are not specifically absorbed by melanin, but that does not mean that the melanin unit cannot be irreversibly damaged e.g. carbon dioxide laser skin resurfacing same fraxellated systems have a greater margin of safety.

7.2
Why and When to treat Café O Lait Spots
Alex Camps
Dermalas,Spain

Café O Lait Spots which present as a unique wide brown spot do not represent any type of risk to the patient and are not usually associated with any kind of syndrome. The histology of these spots is the same as normal skin, with the same amount of melenocites.
Q Switched Laser and IPL appear to be the best treatment to fade this colour without alterations to the melenocites, but the pigment will reappear after any UV exposure.

Treatment is no problem in adults but is not well tolerated in children. Nowadays the perfectionism required by parents in their children is placing pressure on doctors to threat children who have this problem.

Children will need to be sedated whereas teenagers and adults can be treated without any sedation. Several sessions will be needed and relapse will be sooner if patients are exposed to the sun.

7.3
Objective Grading system to evaluate results in the treatment of Infantile Haemangiomas (IH)
Diana Wild, Androniki Lamia, H.-Peter Berlien
Ev. Elisabeth Hospital Berlin, Berlin, Germany

Due to a high spontaneous regression potential the indications for treatment have to be very strong. On the other hand, an excessive growth can cause severe complications. An early indentification of these potentially threatening IH and evaluation of therapy effectivenes requires an objective grading system.

2417 patients with IH were examined in the period from 1/2007-12/2009, in an operator independent analysis. A grading was performed at time of first presentation and after therapy completion.
IH with no progression or complications were graded G1/2a,
with mild progression and risk of complications G2b,
with progression accompanied by complications and/or subcutaneous or parenchymatous localisation G3a

and those with severe life threatening complications, critical localization and/or diffuse infiltrating growth G3b.
2006 patients were graded G1/2a and controlled solely by ultrasound.
66 patients with pure intracutaneous G2b received preventively a single FPDL-therapy.

In 290 G3a patients, a transcutaneous Nd:YAG-Lasertherapy within monthly intervals was carried out. Of these, 42% required one session, 32% two, 22% three and 10% four sessions in total, to achieve a downgrading in G1/2a, with a definitive growth arrest and regression induction and thus this through an average of 2,1 Tx/Px. Only in 55 G3b patients, where an early regression was urgent and a laser monotherapy insufficient, an adjuvant short time propranolol or prednisolon treatment was required.

This study shows that even in clinically crucially progressive G3a with urgent treatment indications, a downgrading of complicated IH is feasible through Nd:YAG-laser and in a total treatment length of 2-3 months without any rebound.

7.4

Naevus of Ota: Response to treatment with pigment-specific lasers.

Sarah Felton, Firas Al-Niaimi, Janice Ferguson, Vishal Madan
Dermatology Centre, Salford Royal NHS Foundation Trust, Manchester, UK

Q-switched (QS)-1064nm Nd:Yag laser is a standard treatment for naevus of Ota (NO). We performed a retrospective case-note review of 15-NO patients (10-female/5-male; 8 South-Asian/5 East-Asian/2 Caucasian) treated with QS-1064nm, Alexandrite-755nm and/or QS-532nm lasers in our department. Laser choice depended upon test-patch results to Alexandrite-755nm and QS-1064nm lasers. Median age at first-treatment was 24-years (range 15-61); Median treatment-number 8 (4-11). At end of review-period, laser-operators and patients graded improvement subjectively from baseline: 7 had excellent response/>90% improvement, 3 >80% improvement, 1>50% improvement, 1 no response, and 3 responding well with treatment-ongoing.

Three patients (20%) responded best to QS-1064nm: Two had >90% improvement after 5 and 8 sessions (the latter receiving 3 additional QS-532nm therapies). One had >80% improvement from 9 sessions. In 12 patients (80%), QS-1064nm provided poor sustained efficacy or test-patches demonstrated greater responses at different wavelengths. In six patients (40%), receiving a median of 4 treatments (3-7), Alexandrite-755nm was most effective. Four patients (27%) had marked improvement with QS-532nm. Two were Caucasian (receiving 4 and 5 treatments) and two were Indian: one had complete clearance after 7 treatments, the other 50% improvement after 3, with treatment-ongoing. For the remaining two patients, combinations of 532nm/755nm/1064nm have been tried.

Two patients (skin-types IV/V) developed self-limiting hyper/hypo-pigmentation with QS-532nm (resolving in 6-months). The importance of test-patches to different wavelengths before commencing treatment and regular progress-reviews are thus highlighted. Patients not responding to QS-1064nm may benefit from shorter wavelength lasers as depth of dermal melanocytosis and facial skin thickness vary between patients.

7.5

TRATAMIENTO FÍSICO DE LOS NEVUS MELANOCÍTICOS CONGÉNITOS; CIRUGÍA Y LÁSER - *Physical treatment of congenital melanocytic nevus; surgery and laser.*

Brualla Palazón[1], Vicente Villa[1], González Enseñat[1], Brualla Planes[1]
[1]Hospital Sant Joan de Déu, Barcelona, Spain, [2]Instituto Catalán Dermatología, Barcelona, Spain

Los nevus melanocíticos congénitos (NMC) están clasificados en tres tipos: pequeños, intermedios y gigantes. El objetivo de su tratamiento es conseguir eliminar la mayor cantidad de células melanocíticas névicas posibles, y así evitar sus dos complicaciones fundamentales: mayor riesgo de malignización y problemas estéticos. En cambio, su manejo puede resultar complejo, especialmente en aquéllos de mayor tamaño. La cirugía sigue siendo un instrumento terapéutico ampliamente indicado.

En este trabajo se comunica la experiencia en nuestro centro en el tratamiento de estas lesiones pigmentadas. Se plantean varios casos clínicos representativos de las lesiones pigmentadas que pueden ser abordadas con sistemas láser, cirugía o seguimiento. Se valora la eficacia de los sistemas Q-switched (QS), así como las posibles utilidades de otros equipos. Asimismo, se recogen las indicaciones quirúrgicas y sus complicaciones. Por último, existen casos en los que la abstinencia terapéutica puede ser lo más conveniente.

La experiencia en nuestro centro, conjuntamente a la revisión de la literatura, demuestra que el tratamiento de NMC mediante sistemas QS y otras fuentes de luz representan un método eficaz y seguro. La observación de efectos secundarios es baja, siendo la mayoría leves. Por su parte, la cirugía se reserva para NMC pequeños, en ocasiones medianos, y sólo en aquellos gigantes muy bien seleccionados. Aunque las complicaciones no son frecuentes, cuando aparecen pueden presentar mayor gravedad que los sistemas láser. Se muestran casos tratados con éxito, así como sus complicaciones. Cuando se optó por el seguimiento dermatoscópico, no se han objetivado transformaciones malignas.

SESSION 8 - Laser Surgery

8.1

Treatments of brown spots: how to treat them without pigmentation side effects

Jean Doumergue
Laser Specialist, Montpellier, France

The treatment of brown spots on dark skin induces a risk of altering the natural pigmentation of the skin. This is due to the fact that when treating pigmented lesions we deliver the same laser action on all the nuclei of melanin in the area. However, taking into account the thermal relaxation time of individual nuclei of melanin and the thermal relaxation time of surrounding tissue, it can be created for all skin phototype a laser mode of action as the tissue between the nuclei of melanin does not coagulate in the area of hyperpigmentation and without any destructive effect on the basal melanin ensuring the natural pigmentation of the skin. The subject of this oral presentation is to describe this method.

8.2

Ventajas de la eliminación con laser de anhídrido carbónico de xantelasmas periorbitarios - *Advantages of CO2 laser eliminaction of periocular xanthelasmas.*

Cesar Arroyo, Mercedes Martinez, Agustin De la Quintana, Ana Beltran
HM Hospital Monteprincipe, Madrid, Spain

Ventajas de la eliminación con laser de anhídrido carbónico de xantelasmas periorbitarios.

INTRODUCCIÓN

Uno de los problemas consultados con cierta frecuencia en nuestra unidad láser es la percepción por parte del paciente de un acumulo de sustancias amarillentas subcutáneas alrededor de los párpados, que alteran su imagen a nivel periorbitario. Son los llamados xantelasmas.

Objetivos

Dado que la terapia con laser de anhídrido carbónico produce una ablación cutánea, podemos acceder a las zonas de depósito de grasa con poco sangrado y favoreciendo una recuperación rápida. El objetivo de este trabajo es confirmar o no la descripción epidemiológica descrita en la literatura respecto a prevalencia referente a sexo, edad y localización más frecuente en el ángulo medial ocular.

Materiales y método

Laser de CO2 (CO2RE Syneron Candela)
Seguimiento fotográfico. DC 70 Nikkon
Se han seleccionado 35 pacientes con xantelasmas atendiendo a los siguientes criterios de inclusión:
-Aparición no mayor a cinco años
-Localización en parpado superior y/o inferior
-Sin tratamiento previo en los últimos seis meses
-No padecer en el momento actual ninguna enfermedad infecto- contagiosa ni trastornos de la coagulación.
-Sin antecedentes de cicatrización anómala previa.

Resultados

La satisfacción con este procedimiento es determinante y se brinda como de elección según nuestro estudio. Las complicaciones han sido mínimas y con un coste reducido comparado con otros métodos.

8.3

Ninfoplastia con Láser de Diodo - *Labiaplasty with Diode Laser*

Víctor García Martínez, Víctor Ollarves, Edwin González, Sofia Herrera, Andres Lemmo, Zulybeth Rodríguez
Unidad Médico Estética Láser (UNIMEL), SKINTIMA, Caracas, Venezuela

La hipertrofia de labios menores puede causar problemas estéticos, funcionales y psicológicos. Hay muchas técnicas reportadas en la literatura para su corrección quirúrgica. Nos planteamos presentar una investigación prospectiva y descriptiva de ninfoplastias realizadas con la técnica láser por hipertrofia y/o asimetría de labios menores, entre 2008 y 2011. Trescientas dos (302) mujeres fueron intervenidas bajo la técnica láser (Velas 30, Gigaa®, 980 nm, sistema laser de diodo GaAlAs, operado en modo continuo, resección del borde libre de los labios), de las cuales se registraron datos de evolución postoperatoria inmediatos (24 horas), a la semana y a los 30 días en 138 casos. El grupo incluyó mujeres entre 19 y 56 años de edad. Los motivos de consulta fueron: razones estéticas 100%, incomodidad al vestir y realización de deportes (2/3) e incomodidad para las relaciones sexuales y vulvovaginitis recurrente (1/3). Luego de 30 días, casi dos tercios de las pacientes (95/138) refirieron estar muy satisfechas con los resultados estéticos, y 1 de cada 10 pacientes reportaron estar muy satisfechas, satisfechas o conformes con los resultados funcionales. Sólo se usó sutura en 15 casos (10,8%), se presentó dehiscencia en uno de ellos. Hematomas fueron reportados en 2 pacientes. En el 86,95% de los casos se combinaron otros procedimientos estéticos o corrección de defectos del piso pélvico, resultando como

complicaciones derivadas de estos procedimientos: perforación de vejiga un caso, dermatitis 4 casos. Se concluye que la ninfoplastia láser es un procedimiento seguro, con el que se obtienen resultados estéticos y funcionales satisfactorios y que puede combinarse con otros procedimientos estéticos o para la corrección de defectos del piso pélvico.

Palabras clave: hipertrofia de labios menores, ninfoplastia, láser de diodo.

8.4

Comparative Efficacy Of Three Common Topical Anaesthetics In Dermatological Procedures

Firas Al-Niaimi, Vishal Madan
Salford Royal Foundation Trust, Manchester, UK

To minimize patient discomfort and increase compliance, topical anaesthetics are increasingly being used prior to minimally invasive dermatological procedures. We compared the efficacy of three topical anaesthetics (EMLA[v1] ®, Ametop®, and LMX 4®) in 28 patients (21 women and 7 men) undergoing dermatological procedures which included skin microneedling (n=12), carbon dioxide laser (n=11), Q switched Alexandrite (n=3), and pulsed-dye laser (n=2[v2]) treatments. The indications for treatment were: post- acne scarring (n=15), pigmentation (n=3), dermatosis papulosis nigra (n=3), syringomata (n=2).

The three topical anaesthetic creams were applied under occlusion for one hour. The creams were applied at different treatment sites but within the same anatomical zone. Patient reported discomfort was noted during treatment at the three different sites on a scale from zero (absent) to 10 (intense pain).

The mean pain score with Ametop was 5.2 and one urticarial reaction was observed. The mean pain score for EMLA was 4; whilst that for LMX-4 was 4.2. When asked about what patients overall preferred the scores were LMX-4 (n=15), Emla (n=4), and Ametop (n=4[v3]). When looking into the carbon dioxide laser treated group; EMLA was the most preferred topical anaesthetic (n=5), followed by LMX-4 (n=4), and then Ametop (n=2). In contrast, LMX-4 (n=7) was preferred over EMLA (n=5) and Ametop (n=0) as a topical anaesthetic prior to skin microneedling.

Our observation concludes that whilst there is no demonstrable difference between EMLA and LMX-4, Ametop was shown to be the least effective in pain control in various dermatological procedures.

8.5

Perceived pain during YAG laser treatment of spider veins

AL Baptista, N Tenreiro
Espírito Santo Private Hospitals, Oporto, Portugal

Pain remains a major problem with Laser treatments. Particularly with YAG Laser treatment of spider veins of the lower limbs, because the large areas involved don't facilitate the use of topical anesthetics.

In order to evaluate the severity of this problem and stimulate further research, we asked 100 consecutive patients to grade the intensity of the pain felt during a session of YAG Laser therapy.

This group of patients comprised only females, with ages that varied between 19 and 67 years, with an average of 38 years. Typical sessions lasted an average of 30 minutes.

The patients were given a scale of 1 to 5, and asked to classify their pain as:

- 1) Annoying
- 2) Uncomfortable
- 3) Intense
- 4) Very intense
- 5) Agonizing

The results are summarized in this Table

1 - Annoying 6
2 - Uncomfortable 20
3 - Intense 53
4 - Very intense 19
5 - Agonizing 2

We concluded that most patients considers that the pain during an YAG Laser session is intense or very intense - 72%.
These findings should prompt further research into ways of minimizing this problem.

SESSION 9 - PDT in Brain & Urology

9.1
Seeing is believing, FGR for GBM
Sam Eljamel
Dundee, UK

By enlarge the grim outlook of primary malignant brain tumors (PMBT) is due to invasion of surrounding brain and local relapse of malignancy. However, their prognosis is highly dependent on the extent of surgical resection. These tumors have no margins and, at best, the most active advancing component of the tumor is invisible to the surgeon's eye even with the use of the most advanced surgical microscope. Early studies demonstrated 5-aminolevulinic acid (ALA), Photofrin, Foscan and other photosensitizing agents accumulated preferentially in cancer cells including PMBT. ALA, a naturally occurring substance formed in the mitochondria of living cells to produce heme, in particular had attracted much attention in recent years. Exogenous ALA leads to accumulation of Protoporphyrin-IX (PpIX) in cancer cells because of deficiency of ferrochelatase activity in these cells. PpIX levels peeked in cancer cells about 3 hours after ALA administration, this was found to be true in glioma cell cultures, glioma spheroids, animal models of glioma, and in patients. PpIX absorbs blue light at 400 nm and emits red light at 635 nm within the visible spectrum making visualization of glioma cells easier. Prospective clinical studies demonstrated that the fluorescence generated by PpIX in high grade gliomas significantly increased the rate of complete surgical resection of these tumors with high sensitivity and high specificity, opening the door for a prospective randomized controlled trial using ALA, blue light and longpass filter to resect high grade gliomas. This trial confirmed the findings of non-randomised studies and demonstrated significant prolongation of time to tumor progression. Further more combining fluorescence guided surgical resection (FIGS) with other modalities of treatments including photodynamic therapy (PDT), intraoperative radiotherapy (IORT) and intraoperative chemotherapy (IOCT) resulted in further significant improvement of glioma surgery outcomes.

9.2
Photodynamic diagnosis and treatment for transitional cell carcinoma of the urinary tract; a glimmer at the end of the tunnel
L Coombs
North Lincoln and Goole hosptals NHS Foundation Trust, UK

Fluorescence guided transurethral resection of non muscle invasive transitional cell carcinoma (TCC) increases the detection and decreases the recurrence rate. This primarily involves biologically insignificant disease and carcinoma in situ. Its use in white light negative cases with abnormal cytology is established. There appears to be no effect on disease progression. Its use in the upper tracts is not established neither is its cost efficacy. Large collaboratives (PDD users group) and imminent NIHR study will crystallise its role.

There have been few significant publications on photodynamic treatment of transitional cell carcinoma. Whole bladder treatment is associated with contracture (7%). Intra-vesical instillation under local anaesthetic is associated with severe pain. Response rates of a 60+% have been reported in BCG resistant carcinoma in situ.

Using 1-2mg /kg protoporhyrin as sensitiser and two treatments at 630 nm laser light at two and 5 days post administration in high risk patients we have treated TCC involving the renal pelvis, ureter and bladder. These have been given even under local anaesthetic with no reported pain. The efficacy is 60% and the duration of response variable. The duration of light sensitivity precludes the routine use of this sensitiser in TCC but it may have a role in BCG failed carcinoma in situ.

9.3
Aminoluvelinic Acid induced Photodynamic Diagnostic Ureterorenoscopy - does the blood pressure require monitoring?
Jasper Bondad[1], Omar Aboumarzouk[2], Harry Moseley[3], Slawomir Kata[1]
[1]Department of Urology, Ninewells Hospital, Dundee, UK, [2]Department of Urology, Royal Bournemouth Hospital, Bournemouth, UK, [3]The Scottish Photodynamic Therapy Centre, Ninewells Hospital, Dundee, UK

Background: Photodynamic Diagnosis has been proven to improve superficial bladder cancer detection and improve resection margins. The use of 5-aminolevulinic acid as the photosensitizing agent has been associated with side effects, specifically hypotension. We aimed to audit the effect of oral 5-ALA on the blood pressure in a group of patient who underwent Photodynamic Diagnostic Ureterorenoscopy.

Methods: We carried out a retrospective audit on all patients who underwent PDD-Ureterorenoscopy with oral 5-ALA between July 2009 and September 2011. Pre-administration, hourly post-administration and hourly post-operative blood pressures were noted. Mean arterial blood pressure and the threshold for cerebral ischaemia were calculated as well.

Results: The audit includes thirty-eight procedures which involved twenty-four patients with a mean age of 74 (SD +/-16.95). Hypotension was defined as <80% of the systolic or diastolic baseline blood pressure. Twenty patients

were hypotensive pre-operatively after the ingestion of 5-ALA while 21 patients were hypotensive post-operatively. Three patients crossed their MAP threshold pre-operatively and were symptomatic. Fast infusion of intravenous fluids improved their symptoms.

Conclusion: Hypotension is a common occurrence after the ingestion of 5-ALA. Patients undergoing PDD Ureterorenoscopy should have their blood pressure monitored closely after the ingestion of 5-ALA.

9.4

Diagnosis of Upper Urinary Tract Tumours: is blue light assisted ureterorenoscopy required as an addition to modern imaging and ureterorenoscopy?

Omar Aboumarzouk[1], Edward Mains[1], Sarfraz Ahmad[1], Harry Moseley[2], Slawomir Grzegorz Kata[1]
[1]Department of Urology, Ninewells Hospital, Dundee, UK, [2]The Scottish Photodynamic Therapy Centre, Dundee, UK

Introduction: Photodynamic Diagnosis has been shown to decrease the recurrence rates of bladder tumours by improving visualisation of abnormal tissue for biopsy, enhancing diagnosis and early treatment. Advances in flexible ureterorenoscopy (FURS) have facilitated the visualisation of the Upper Urinary Tract Transitional Cell Carcinoma (UUT-TCC). We aimed to audit the diagnostic accuracy of Photodynamic Diagnostic Ureterorenoscopy (PDD-FURS) in detection of UUT-TCC, in comparison with CT Urogram (CTU) and white light ureterorenoscopy (WL-FURS).

Method: Between June 2009 and August 2011, 30 patients underwent PDD-FURS following CTU. Endoscopy was performed for abnormal upper urinary tract on imaging or as follow up for UUT-TCC. Oral 5-Aminolevulinic Acid (5-ALA) was used as a photosensitizer. The sensitivity, specificity, and detection rate of FURS, PDD-FURS and CTU were calculated, with P values <0.05 considered significant.

Results: PDD-FURS was not significantly more sensitive than CTU and WL-FURS to detect UUT-TCC [(0.94 vs. 0.82 vs. 0.81 respectively; PDD-FURS vs. CTU: p=0.249; PDD vs. WL: p=0.277)]. Furthermore, no significant difference was found between CTU and WL-FURS (p=0.935).
There was no difference in the specificity between PDD-FURS and WL-FURS, while PDD-FURS was significantly more specific than CTU (P<0.001). WL-FURS was also more specific in detecting tumours than CTU (P<0.001). PDD-URS detected more UUT-TCCs than CTU or WL-FURS (94% vs. 76.5% vs. 82% respectively). PDD-FURS alone detected Carcinoma in situ in 3 patients.

Conclusion: Oral 5-ALA induced PDD-FURS has a high sensitivity and specificity to detect lesions and a higher detection rate to diagnose UUT-TCC than CTU and WL-FURS.

9.5

Retrograde Holmium YAG laser lithotripsy for renal stones larger than 2 cm – a promising alternative to percutaneous nephrolithotripsy. Literature review and our initial results.

Omar Aboumarzouk[1], Edward Mains[1], Bhaskar Somani[1], Manoj Monga[2], Olivier Traxer[3], Slawomir Grzegorz Kata[1]
[1]Department of Urology, Ninewells Hospital, UK, [2]Glickman Urological & Kidney Institute, Cleveland, USA, [3], Tenon University Hospital, Paris, France

Introduction
Urinary stones >2cm are traditionally treated with percutaneous nephrolithotripsy (PCNL). The use of flexible ureterorenoscopy and laser lithotripsy (FURSL) in the treatment of 2-3cm stones has been shown to be significantly more cost effective than PCNL, with comparable effectiveness and fewer second-stage procedures. We have reviewed the literature for renal stones >2cm treated by ureterorenoscopy and holmium laserlithotripsy, and conducted an audit of our initial experience.

Material & Methods
A systematic review and quantitative meta-analysis was performed on studies identified via systematic electronic literature search from 1998 to August 2011. All English-language publications reporting on a minimum of 10 patients treated with FURSL for stones >2cm were included. In addition, an audit was performed of patients who underwent FURSL for >2cm stones before 2010 in our unit.

Results
FURSL was used in nine studies, involving 445 patients with a mean stone size of 2.5cm. The mean operative-time was 82.5 minutes. The mean stone-free rate was 93.7% and the overall complication rate was 10.1%.

Our initial results included 10 patients, mean stone size was 3.1cm, with a mean operative time of 124 minutes. 70% of patients were stone free after the first procedure, 90% after a second. A single complication was recorded.

Conclusion
In experienced hands, FURSL can safely and effectively treat patients with stones larger than 2 cm.
FURSL can be considered as an effective, safe alternative to PCNL and should be reserved for stones <3cm in size. The findings in the literature are comparable with our own results.

SESSION 10 - Aesthetic Laser Surgery

10.1
Aesthetic Laser Surgery-How I do it
Maxwell Murison
Welsh Centre for Burns and Plastic Surgery,UK

This presentation will cover laser techniques for aesthetic and functional problems. Our experience with the CO2 laser will form the majority of examples along with other laser applications. Experience in treatment of established burns scars will also be discussed.

10.2
My concept of total facial rejuvenation
Daniel Cassuto
Italy

Facial aging consists of different involutional changes in all tissue layers, from the facial skeleton through the muscles, fascia, ligaments, adipose tissue and finally the skin. Our medical and surgical armamentaria have lately been enriched by technology as far as injectables, energy sources and surgical advances are concerned. While the scientific litterature thoroughly describes new techniques and technologies, the initial step of medical practice is ofter overlooked: the main complaint is often identified as the diagnosis and treated accordingly. The author will try to shed some light on the consequences of this mistake, which is probably the main cause of insuccess(insufficient or innatural results, recurrencies et al.) in aesthetic medical and surgical treatments.

10.3
Tratamiento de siliconomas mediante laser diodo 30 watts - *Treatment of siliconomas with 30 watt Diode laser*
Alcalira Jimenez
Unidad de Cirugia Cosmetica Milenium, Coro, Falcon, Venezuela

Usando un diodo laser 30 watts, 980nm, con potencia controlada de la emision continua y utilizando una fibra optica de 600 micras, es posible ablandar y vaporizar la capsula fibrotica que se forma alrededor de la inyeccion de silicona (siliconoma), logrando una extraccion de la misma en cualquier localizacion intradermica. Se realizó un estudio a 30 pacientes, ambos sexos, con edades entre 30 y 45 años, en la ciudad de Coro Edo. Falcon, Venezuela, se le indicó ecosonograma de partes blandas, antes y despues del tratamiento, clinicamente encontrando ablandamiento, expulsion de la silicona en forma liquida y mejora en la textura, vascularizacion y turgencia de la zona tratada y el resultado del ecosonograma 3 meses despues, fue un adelgazamiento en un 70% de la fibrosis capsular. En conclusion, el laser diodo se puede catalogar como una excelente herramienta para el tratamiento inestesico y patologico de los siliconomas, tiene una ventaja en relacion a la cirugia convencional que no deja cicatrices, rapida reincorporacion del paciente a sus actividades laborales, puede ser aplicado en cualquier area del cuerpo, tiene accion antiinflamatoria y regeneracion tisular evidentes.

10.4
CO_2 laser upper blepharoplasty and brow tail lifting with an absorbable implant
M. Trelles
Instituto Médico Vilafortuny / FUNDACIÓN ANTONI DE GIMBERNAT, Cambrils, Spain

Upper eyelid blepharoplasty assisted by the CO2 laser is a well established surgical procedure with benefits over traditional cold scalpel procedures.
Thanks to the CO_2 laser, operation is carried out in a bloodless field, and this advantage is appreciated since identification of all anatomical plains enables achievement of a successful and smooth intervention. However, not all patients need only upper lid surgery but also addition of brow elevation to enhance surgical aesthetic outcome.
The fixation of soft tissue related to the forehead is still one of the least controllable and predictable steps of surgery especially when it comes to the eyebrow tail lifting. Techniques, via suture or percutaneous fixation using screws, often led to poor results.

The Endotine™ transbleph device is an alternative solution in order to achieve effective fixation of eyebrow tail thus enhancing the upper blepharoplasty procedure and outcome.

This biodegradable implant provides suture-free fixation facilitating a minimally invasive intervention at a reduced surgery time, optimization of results.

10.5
Laser assisted cartilage reshaping of the ears. My experience

Spiros Vlachos
Athens, Greece

Introduction: Laser assisted cartilage reshaping is a procedure published in several journals already. Near infrared lasers have been used on a non-ablative pulsed mode to irradiate the skin over the cartilage. A period of several weeks with a mold over the treated area usually follows, after which the outcomes become evident.

Material and methods: 7 patients (6 female, 1 male) underwent the procedure. An Er:Glass laser was used to irradiate both the anterior and posterior surfaces of both ears. A local anesthetic was injected since the procedure was painful. After the laser irradiation, a 20 minute session of LED (830nm) light therapy was administered and finally a silicone mold was put in place over each ear and kept for 10 days. Patients were advised to keep a head band over the ears at all times for a period of 4 weeks.

Results: 5 patients showed none or almost no improvement and subsequently had to be surgically corrected. Two patients (the only children in the series) showed moderate to good improvement of the shape of their ears. Post-treatment mild edema and erythema were present in all cases. No other side-effects were reported by the patients besides a case of a unilateral superficial skin necrosis.

Conclusions: Laser assisted cartilage reshaping of the ears is a feasible procedure, especially in children. However, more research is needed in order to establish the ideal parameters.

SESSION 11 - Laser/IPL Safety

11.1
An update on laser/IPL eyewear
Roy Henderson
Bioptica, Cambridge, UK

Two initiatives are currently under development in ISO (the International Organization for Standardization) with the aim of establishing international standards for eye protection in the fields of lasers and intense light sources (ILS). When published as ISO documents, it is hoped that these will become adopted as European (EN) standards. In the case of lasers, this would replace the existing EN 207 and EN 208, whilst the ILS standard will establish new requirements for eye protection for use with IPLs (not currently covered by any international or European standard).

This presentation will discuss the need for these two new standards and outline some of the shortcomings of EN 207. It will summarise the essential requirements for protecting the eyes from harm and will explain the methodology for specifying eye protection that is being adopted in these new draft standards.

11.2
Are you ready for European standardization of aesthetic Laser surgery?
Maria Zialkowska, Carsten Philipp, H-Peter Berlien
Elisabeth Hospital Berlin, Berlin, Germany

Purpose: In the field of standardization we have to decide between quality standards, safety standards and performance standards. The beginning of standardization were quality standards for instance the paper size A4 or. Another group of standards are safety standards. Another kind are technical rules. This is only a guide line and has no mandatory effect. Examples are the ISO TR for Laser bronchoscopy or the IEC/TR 60825-8 Safe use of medical lasers. In the majority these standards are prepared by ISO or IEC and are then adopted by CEN/CENELEC.

Methods: In both of these standards we have regular standards and technical guidelines. And within the standards the difference between harmonized standards and regular standards. Harmonized standards are official standards by the European commission to fulfill EC-regulations. So they have a mandatory character and are sometimes part of national laws. One example are standards in conjunction with the medical device act, where the EC said that technical details are part of a CEN/CENELEC-standard.

Results: Beside this we have the trend to produce performance standards. One of the well known performance standard is the family ISO 9000ff. But in general performance standards are very critical e.g. due the liability. Here we have the problem that a not authorized group makes requirements for medical procedures. Only delegates of the national standardization bodies are full member of international working groups. They can invite additional experts as guests. Voting rights have only the national bodies mostly the national delegates. The national working groups recruit their members by their self - comparable to the universities - you can't invite yourself.

Conclusion: Regulations for medical procedure can be only in the responsibility of governmental approved medical associations but never by technical committees like ISO or CEN

The Great Debate: Laser Europe 2012

Speakers: Godfrey Town and Graham Hart
The Question: 'Are the UK IHAS Inspection Standards fit for purpose?'

The use of Lasers and Intense Pulsed Light (IPL) for cosmetic treatments has dramatically grown in both volume and popularity over recent years. However, in October 2010 these activities ceased to be regulated by the Care Quality Commission in England. With a few exceptions, cosmetic treatment with Laser or IPL systems is now an unregulated activity.

In recent months a set of standards have been launched to offer a self regulatory framework of "good practice" for establishments offering cosmetic treatments with Laser/IPL. The UK IHAS Inspection Standards have been published and circulated within the industry but are these standards "fit for purpose"? The BMLA has brought together two leading figures from the industry to discuss this question in the "Great Debate"

SESSION 12 - PDT in ENT, Head & Neck

12.2
Recent advances in Head and Neck PDT
Colin Hopper
UCL Eastman, London, UK

Early studies on PDT in the head and neck were concentrated on early disease. This of course is a logical approach as it is fairly simple to apply light to the whole of an early epithelial target. However, it soon became obvious that the regulatory authorities were not particularly interested in this - rather safety and tolerability. There have been a series of studies that have resulted in a license being given to Foscan for the treatment of advanced head and neck cancer and this is currently the main indication for treatment of all but non melanoma skin cancer of the head and neck.

However, there have been a number of studies looking at treatment of dysplasia, field change disease, nodular skin cancer, and interstitial techniques for deep seated tumours as well as a variety of benign conditions. The purpose of this talk is to describe these applications and provide some indication of effectiveness.
In the final part of the talk, I will describe some of the latest approaches using PDT as a drug delivery vehicle for chemotherapy agents and try to look to the next developments in PDT

12.3
The Role of Photo Dynamic Therapy (PDT) in the Treatment of Nasopharyngeal Cancer (NPC)
I.B. Tan[1,2], M.A.M. Wildeman[1], H.J. Nyst[1], H.J.C.M. Sterenborg[3], S.D. Stoker[1], C. Herdini[2], S. Indrasari[2], Bambang Hariwiyanto[2], M.B. Karakullukcu[1]
[1]Department of Head & Neck Oncology & Surgery, the Netherlands Cancer Institute-Antoni van Leeuwenhoek Hospital, Academic Medical Center (AMC), Amsterdam, The Netherlands, [2]Gadjah Mada University, Yogyakarta, Indonesia, [3]Center for Optical Diagnostics and Therapy, Rotterdam, The Netherlands

Although the loco-regional control rate in the treatment of nasopharyngeal carcinoma (NPC) has improved significantly in the last ten years, treatment of patients with local recurrent or residual NPC is still a challenge. Options for treatment of local recurrent or residual disease are brachytherapy, external radiotherapy, stereotactic radiosurgery and (minimally invasive) nasopharyngectomy. These treatment modalities can be used either alone or in combination. Foscan mediated Photodynamic therapy (PDT) has been introduced as a novel treatment modality for head and neck cancer. Since 2005 this treatment modality has also been applied for the treatment of local recurrent or persistent NPC.

An interim analysis of an ongoing prospective study on primary treatment results of nasopharyngeal carcinoma in Indonesia with (chemo) radiation showed that 87% of the patients presented with stage III-IV disease at the hospital. Successful outcome directly after treatment was < 20%. This in contrast to international studies with treatment results between 60 to 85% 5 years survival. Reasons for treatment failure were analyzed and were related to poor counseling and financial constraints and long waiting periods due to lack of adequate treatment facilities.

There is a need for new treatment regiments, which will give tumor reduction during the waiting time without deteriorating the general condition of the patients. PDT could play an important role, since this treatment is well tolerated by the patients and can boost the immune system. New trials are needed to improve the bad prognosis for patients with NPC in countries with a shortage on radiotherapy capacity.

12.4
'Treatment of Venous Vascular Malformations of the Lips with Long Pulsed Nd:YAG Laser'
Huai Shen Phen, Peter J Mahaffey
Laser Therapy Unit Bedord Hospital, Bedford, UK

We report on the use of long-pulsed Nd:YAG laser therapy in treating 21 consecutive venous lesions of the lips up to 3cms diameter size. All lesions resolved macroscopically completely with a mean of 1.2 treatments, most requiring only a single therapy session. Recurrence rates after a mean follow-up time of 12 months were extremely low. It is clear that this modality is effective in dealing with both small and larger venous lesions of the lips and that surgery or sclerotherapy is either no longer indicated, or else dramatically diminished, for this pathology. The size limits of applicability of LP Nd:Yag therapy to venous lesions remains to be explored further.

12.1
Test Patches with the Q-Switched Ruby and Neodymium YAG Lasers - What do they test?
P.A. Wright, R.F. Lowson, T.S. Lister
Wessex Specialist Laser Centre, Salisbury District Hospital, UK

Test patches are routinely carried out in many skin laser centres prior to more extensive treatment. These may establish whether the patient is susceptible to an adverse response to laser treatment. They may also inform appropriate laser settings for future treatment. When treating multi-coloured tattoos it is not uncommon for several test patches from different lasers to be carried out at the same appointment.

Two-hour simulated clinics were conducted with a Q-Switched Ruby Laser (Aesclepion RubyStar) and a Q-Switched Neodymium YAG Laser (Cynosure Affinity). Eight ten-minute 'treatments' simulated by an uninterrupted series of pulses were interspersed with five-minute gaps. The output energy density of each pulse was monitored with an external energy meter and display unit (Ophir Optronics).

The energy density of the initial pulse of each ten-minute simulated treatment with the Ruby laser was up to 25% higher than the average energy density of all the pulses in that same ten-minute treatment whilst the average energy density of the first ten pulses was up to 15% higher. In contrast, the energy density of both the initial pulse of the Neodymium YAG laser, and the average energy density of the first ten pulses, was up to 12% lower than the average energy density of all the pulses in that same ten-minute treatment.

Accordingly, given that test patches necessarily consist of a limited number of shots, these may not adequately predict adverse responses to laser treatment or inform appropriate laser settings.

SESSION 13 - Adipose Tissue

13.1
Non-Surgical Body Contouring 2012
J. Dover
Skincare Physicians, USA

We are in the midst of a revolution in non-surgical body contouring. A few years ago we have virtually no choices. It was diet, exercise, liposuction or an abdominoplasty. Who had heard of companies called Zeltiq and Liposonix? No one as they did not exist.

CoolSculpting by Zeltiq uses concentrated cold to selectively and permanently damage the targeted fat with no damage to the overlying epidermis or dermis or surrounding structures. Liposonix uses high frequency ultrasound to focally heat and permanently damage fat. These are the 2 leading technologies that are heading the revolution.

We will discuss details of both technologies and some of the other opportunities including low frequency ultrasound, combination ultrasound and radiofrequency, and radiofrequency alone to selectively damage fat.

While none of these technologies are an alternative to exercise and diet they finally offer millions of slightly overweight individuals the opportunity to shed unwanted focal areas of fat accumulation.

13.2
Complementary Techniques for Adipose Tissue Manipulation
Claudia van der Lugt
Alizonne, Meijel, The Netherlands

Despite the financial crisis or any other hardship, there is a strong rule: "as long as you look good, you feel good". Therefore the cosmetic-aesthetic appearance is very important but the drawbacks of surgery makes the public seek for non-invasive alternatives. Regarding the non-invasive manipulation of body adipose tissue there are so many devices offered and a newer model is released almost every 3 months. THAT should make us wonder.

Why? We are confronted with unrealistic expectations, not only the public but also our own bias, based on strong marketing. There is NO to surgery equal non invasive technique but there are very good non-invasive alternatives. As long as we respect the limitation of these techniques and realize that tissue needs time to regenerate or reconstruct itself, we can establish realistic and good results. Also very true is that one device can not do everything like sculpting, tightening or reducing different tissue components simultaneously. Of course the investments into this field are high but still you need more than one screwdriver to make your toolbox complete. That is why we are in trouble: we want to believe the marketing miracle and we want our expensive device to meet all our expectations. If it doesn't than we look for a new method. Looking back, we have had different techniques that were "hot". Endermology, ultrasound or cavitation, freezing, heating, injection-lipolysis, Carboxy therapy, Mesotherapy, infrared light and also combinations of the above mentioned. The question is not so much which device is the best but moreover which device serves which problem? How to treat adipose tissue, cellulite or the overweight, respect the body profile and maintain all these results? Obesity needs a diet, skin laxity needs tightening and subcutaneous fat deposits needs a change in quantity or quality of adipocytes and cellulite is more than often a combination of the before mentioned.

As an example; radio frequency application in the treatment of cellulite and skin tightening is today's call. The search is for the best way of deliverance. Characteristics like monopolar, bipolar and even tripolar, next to the used frequency and energy, are determining the depth of penetration. But when we look at cellulite there are certain tissue properties that need to be addressed to first. Cellulite is a complex condition that includes lymphatic congestion and calcification in the upper layers. This increases tissue impedance and therefore needs another approach than only applying RF. For skin tightening the stimulation of fibroblasts is imperative and reaching a certain inflammation through heat without damaging tissue asks for strict temperature control. To overcome the barrier in the top layers of the subcutaneous fat tissue, it is necessary to first treat the deeper layers to increase vascular circulation and lymphatic drainage. Low frequencies of ultrasound and radiofrequency penetrate deeper than higher frequencies. By simultaneously using more techniques different tissue levels are treated. The crucial element in non-invasive contouring is time, patience and understanding the physiology of different tissue components to deplete adipocytes, to stimulate collagen-generators, to liberated cytokines and to trigger the needed cascade of inflammation to regeneration.

Keywords: cellulite, cavitation, radiofrequency, skin retraction, AMFLI, mono-bipolar, injection-lipolysis, mesotherapy.

13.3
Face lift and skin resurfacing in the same surgical procedure.
Aristides Arellano-Huacuja
Clinica Dermatologica y Cirugia Estetica de Puebla, Puebla, Mexico

73 cases have been done with this procedure since year 2000, minimal complications have been observed. The facelift and skin resurfacing techniques are carried out during the same surgical procedure, in order to save time and improve the patient recovery. Perioral and orbital wrinkles, photo aging signes such as pigmentations and changes in skin color are treated with the skin Resurfacing technique. For the face-lift we utilized the technique that many Cosmetic surgeons have previously describe. By combining this two techniques a very acceptable facial rejuvenation is obtained with only one down time period. Using these two techniques, a full-face rejuvenation is obtained with only one surgical procedure. The patient recovery is quicker and the results obtained are much better.

13.4
MACROLANE® 20 EN EL REJUVENECIMIENTO DE LAS MANOS: ESTUDIO PROSPECTIVO EN 29 PACIENTES - *Macrolane® 20 for hand rejuvenation: prospecitve study in 29 patients*
Justo M. Alcolea, Matías N. Grass, Mario A. Trelles
[1]*Sociedad Española de Láser Médico-Quirúrgico, Spain, Spain,* [2]*Sociedad Española de Medicina Estética, Spain, Spain,* [3]*Capítulo de Flebología de la Sociedad Española de Angiología y Cirugía Vascular, Spain, Spain,* [4]*Sociedad Española de Flebologgía y Linfología, Spain, Spain*

El aspecto de las manos constituye uno de los signos más reveladores del envejecimiento. El presente estudio prospectivo se inició para valorar el efecto de relleno de las inyecciones con Macrolane® 20, en el dorso de las manos. Se estudió la tanto la duración de los resultados como las complicaciones.

Entre mayo de 2010 hasta diciembre de 2011, 29 pacientes fototipos II a IV, de 51 a 74 años de edad, fueron tratados con inyecciones de Macrolane® 20 para rejuvenecer sus manos. La cantidad de AH inyectado en cada mano varió entre 1 a 2 ml. Los controles clínicos y fotográficos se realizaron a las 2 semanas, 1, 3, 6 y 9 meses, y después de un año.

Durante los controles de todos los pacientes se anotaron las complicaciones. En dos pacientes se observó equimosis leve, que desapareció en la primera semana. A las 2 semanas todos los pacientes se evaluaron mediante ecografía, para decidir la conveniencia de inyectar más AH. Tres pacientes recibieron inyecciones de

"retoque" en ambas manos. En los cuestionarios completados en las distintas entrevistas todos los pacientes recomendarían el tratamiento y en un 86% expresaron satisfacción con los resultados. En la valoración se tuvo en cuenta, tanto la disminución de las líneas, arrugas y pliegues del dorso de las manos, la apariencia de las venas y el recubrimiento de las prominencias óseas. Igualmente, en la objetivación de la mejoría se evaluó la atrofia dérmica y, por ecografía, el ancho y el aspecto del tejido subcutáneo.

SESSION 14 - Paediatric Applications

14.1
Laser Application in Paediatrics
M Poetke, C Philipp, U Mueller, P Urban, H-Peter Berlien
Elisabeth Hospital Berlin, Berlin, Germany

Purpose: In general there is no difference in Laser application between adult and paediatric patients. But the fields of indication vary and the technical procedures. While in adults on one hand malignancies on the other cosmetic indications present the majority of Laser indications are in pediatric congenital functional disorders and benign diseases the main field of application. The greatest advantages of Lasers are that is a non ionizing radiation which allows repeating applications and in endoscopy the small fiber diameter which allows to work through small endoscopes.

Methods: By this basics the indications are congenital vascular anomalies including vascular tumors and all kinds of vascular malformations. Furthermore we have in phacomatoses and genodermatoses the treatment of naevi and hereditary tumors like neurofibromas, angiofibromas and giant congenital pigmented naevi. In HPV infection the majority are verrucae but more and more by perinatal infection by the mother we have an increasing number of anogenital papillomas. In endoscopy we have the greatest difference to adults. Whereas in adults malignant tumor stenosis are the main indication we have in pediatrics congenital or acquired benign stenosis. E.G. in premature infants and children after cardiac surgery we have the risk of subglottic and tracheal stenosis. The same is in the lower urinary tract where urethral valves make the main indication. In malignancies in childhood laser e.g. PDT plays only a minor role. One indication is the early Basal Cell Naevus Syndrome (Goltz-Gorlin-Syndrome) with early superficial basal cell carcinoma.

Results: The great variety of laser application the easy handling and the minor trauma due to the small diameter of Laser fibres, endoscopes and puncture needles makes the Laser to an important tool in pediatrics.

Conclusion: Pediatrics offer a lot of Laser indications but due to different diseases and the specific physiology of Children you need a specific training and an optimized facility.

14.2
Endovenous laser: novel applications in children
Alex Barnacle
Great Ormond Street Hospital for Children, London, UK

Endovenous laser ablation of superficial veins is well established in adult practice, primarily for the management of varicose veins. The procedure is well-tolerated in awake patients and has low complication rates. In experienced hands, the short and medium term clinical outcomes are excellent. Long term outcome data is now emerging and appears to be good.

Technically, the procedure can be applied in paediatrics with relative ease, as the equipment is of a suitable calibre for use in children. It can be used to treat varicose veins in children, which are rare but certainly reported. However, novel applications are now emerging which suggest that endovenous ablation can be used as part of the management of other conditions that have underlying dysplastic veins. These include venous malformations with a Puig type IV ‘venous dysplasia' configuration, embryonic lateral veins and ‘verrucous haemangiomas'. Success rates depend on rigorous patient selection and pre-operative evaluation, as well as appropriate use of adjuvant interventions such as sclerotherapy and embolisation. In such cases, endovenous laser ablation provides a highly useful tool in the interventional radiologist's armamentarium.

14.3
Is pulsed dye laser to blame for exudative retinal detachment in children with Sturge-weber treated with bimatoprost and PDL?

Samantha Harding, Eva Gajdosova, Samira Syed, William Moore and Ken K Nischal

Purpose
To examine whether pulsed dye laser induces choroidal effusion and exudative retinal detachment in patients taking bimatoprost with port wine mark, diffuse choroidal haemangioma and receiving pulsed dye laser treatment.

Methods
Retrospective case note review

Results
Twenty-two patients with port wine mark were identified from records held of all patients on bimatoprost. Of those, 8 patients had port wine mark, choroidal haemangioma and had been undergoing pulsed dye laser treatment. five of these eight patients had developed exudative retinal detachments. Cessation of bimatoprost led to self-resolution of the detachment in one of these cases. In some cases, patients had been changed from latanoprost to bimatoprost. Choroidal thickening was heralded by a hypermetropic shift prior to detachment.

Discussion
We believe this is the first series of its kind to report exudative retinal detachment in patients who are on bimatoprost and receiving pulsed dye laser treatment for port wine mark along with confirmed choroidal haemangioma.

Conclusion
While the role of pulsed dye laser is unclear, bimatoprost should be used with caution in patients having pulsed dye laser treatment for port wine mark in the presence of choroidal haemangioma

14.4
Experience of the combined PDL/Nd:YAG (Multiplex) laser in the paediatric population
Samira Syed
Great Ormond Street Hospital for Children Foundation Trust, London, UK

Laser therapy has revolutionised the treatment of Port Wine Stains(PWS) and other cutaneous conditions. The Cynergy multiplex, a new generation laser combines the emission of PDL (pulsed dye laser) followed by Nd:YAG after an adjustable delay of a matter of milliseconds. The theory behind this system is that oxyhemoglobin within the red cells is converted to methaemoglobin by the PDL allowing improved absorption of the Nd:YAG energy, leading. to better absorption and penetration while the surface remains intact, with very little bruising and less discomfort.

Treatment of children with port wine stains (PWS) showing only partial response to a course of PDL have shown promising results with the multiplex laser. Results from treatment of glomuvenous malformations, venous malformations, lymphovenous malformations, angiokeratomas, verrucous vascular malformations, inflammatory linear verrucous epidermal naevi and cosmetically disfiguring haemangiomas has also been promising, with reduction in bleeding and redness, and some reduction in thickness in certain cases.
I will be presenting our experience at this meeting.

SESSION 15 - Clinical Biophotonics

15.1
Fluorescence lifetime imaging for biology, drug discovery and label-free clinical diagnosis
Paul French
Imperial College London, London, UK

This talk will review our development and application of fluorescence lifetime imaging (FLIM) technology applied to microscopy, HCA, endoscopy and tomography with the potential to translate molecular readouts across the scales. For cell biology we have developed FLIM microscopes including a STED FLIM microscope for super-resolved multi-label imaging and high-speed optically sectioned FLIM microscopes for rapid 3-D imaging, including of FLIM FRET readouts in live cells. For drug discovery we have the latter to automated optically sectioned FLIM/FRET multiwell plate readers that can image a 96 well plate in less than ~15 minutes. With its associated analysis software, this technology makes FLIM a practical tool for HCA including for live cell assays. For drug discovery and for fundamental biomedical research, it is increasingly imperative to translate cell-based assays to *in vivo* studies. Accordingly, we are developing tomographic FLIM instruments including FLIM optical projection tomography, which we have applied to live zebrafish embryos and diffuse FLIM tomography, with which we have demonstrated in vivo FLIM FRET in a mouse model. For imaging larger disease models and patients, we are developing a range of FLIM endoscopes including a FLIM confocal endomicroscope, wide-field FLIM endoscopes and single point fibre-optic multidimensional fluorescence probes to provide more detailed information on complex spectro-temporal autofluorescence signals. These instruments are complemented by clinical multiphoton multispectral FLIM tomography, from which we are obtaining in vivo data

15.2
Characterisation of skin autofluorescence to establish its role in distinguishing between normal and diseased skin.
Julie Woods, Kim Robinson, Harry Moseley, June Gardner, Sally Ibbotson
University of Dundee, Dundee, UK

The primary objective of this project was to generate high quality, reproducible autofluorescence (AF) data from healthy volunteers, which will underpin the potential use of AF in distinguishing between normal and diseased skin, in particular in the non-invasive diagnosis and delineation of skin cancer.

The AF of 110 healthy volunteers was determined using the non-invasive SkinSkan fluorimeter to examine the effects of age, gender, skin phototype, body site and establish the extent of inter- and intra-subject variation. A preliminary study of AF in skin tumours (n=10) and psoriasis (n=20) was also undertaken to further validate the potential of AF to discriminate between normal, malignant and benign hyperproliferative disease.

AF is composed of multiple, complex signals that could increase or decrease in quantum fluorescent yield. The CE-marked tunable, skin-enabled spectrofluorimeter designed specifically to record *in vivo* skin surface spectra (SkinSkan) contains double-grating monochromators that minimise stray light, and has a bifurcated fibre optic probe designed to isolate and collect precise spectra from scattering samples. Preliminary analysis of the data show that in general total AF tended to increase with age, but decrease on sun-exposed sites compared to sun protected sites (eg. inner and outer forearm). Increasing skin type also appeared to be associated with decreasing AF signal originating from the dermis. Skin tumours could be identified from an intense epidermal signal compared to normal skin.

These data in normal skin are important if optical devices are to be effectively applied to the non-invasive diagnosis and investigation of disease states.

15.3

Histology specific spectra in the discrimination of disease states

Nick Stone[1,3], Neil Shepherd[2], Catherine Kendall[1,3], Toby Breckon[3], Duane Carey[1,3]
[1]Biophotonics Research Unit, Gloucester, UK, [2]Gloucestershire Hospitals NHS Foundation Trust, Cheltneham, UK, [3]Cranfield University, Cranfield, UK

The gold standard of histology involves the staining of tissue sections, often with haematoxylin and eosin (H&E), followed by a pathologist's assessment. The standards methodology has been static for decades and the literature detrimentally cites the subjectivity of this method. This is why in recent years new adjuncts to the gold standard have been sought.

One such novel adjunct is vibrational spectroscopy, which encompasses infra red (IR) and Raman spectroscopies. The techniques enable the biochemical characteristics of a tissue section to be probed by analysing its interaction with light. The inevitably different biochemical composition of disease states will cause differences in their spectroscopic responses, thus facilitating their classification.

Classification of this type has been seen multiple times within the literature and recently new ways of correlating spectra with histology have been formulated to improve the classification results.

In this instance image segmentation and registration algorithms have been used on traditional histology images in order to form binary masks. The binary masks allow for histology specific spectra to be collected from the *a priori* registered IR and histology images. The spectra can then be used within multivariate statistical methods to develop classification models. In this study they were used to discriminate colonic epithelial misplacement, a benign phenomenon, from cancer.

15.4

Development and Validation of a Visual Analogue Scale for Fluorescence Guided Surgery

Max Petersen[1,2], Sam Eljamel[1,2]
[1]The University of Dundee, Scotland, UK, [2]The Scottish PDT Centre, Scotland, UK, [3]NHS Tayside, Scotland, UK

Introduction

Glioblastoma multeforme is a malignant brain tumour associated with a very bad prognosis even if treated aggressively. ALA –induced fluorescent has been used to improve the extent of surgical resection. However, there are variations in colour perception by the human eye.

Aims: To construct and validate a visual analogue scale to assess ALA-induced fluorescence.

Materials and methods

Image database: 108 intra-operative images of ALA-induced fluorescence were collected between 2009 and 2011.

Scale construction and validation: Colour samples were arranged in 10 panels according to content of red, green and blue expressed as RGB%. The chosen scale was validated by 56 persons.

Statistical analysis: Inter-rater and intra-rater correlations were analysed using intra-class correlations. Bias was analysed using Student's t-test and repeated measures analysis of variance.

Results
The chosen scale was calculated by (R%-B%). Both the inter- and intra-rater analysis showed excellent overall ICC-values (ICC ≥ 0.75) and acceptable levels of bias (<1 step of the scale).

Conclusions
The fluorescence analogue scale has intra-rater and inter-rater reliability as well as acceptable levels of bias when assessing recorded images of fluorescence. It would be of value in standardising FGR. With further research, development and tests in clinical practice, it may become a useful tool to improve the results of FGR.

SESSION 16 - Resurfacing

16.1
Perioral skin resurfacing with Er:YAg laser and Botulinum Toxin Type A
Rafael Serena
Clínica Planas, Barcelona, Spain

No single cosmetic procedure can reverse all the unwanted signs of ageing in the face. But growing evidence and clinical experience shows that combining skin laser resurfacing with botulinum toxin treatment with other techniques addresses the different underlying causes of perioral ageing and enhances, refines and prolongs the effects that can be achieved with each procedure on its own.

The key signs of ageing in the face are dynamic changes, such as hyperfunctional facial lines, arising from long-term activity of expression muscles in the face, and static changes, such as superficial lines and wrinkles, sagging, and atrophy of underlying soft tissue.

Most patients who come to the clinic in search of rejuvenating treatment have both dynamic and static signs of facial ageing. So it is a logical approach to combine treatments that address these different needs.

Whatever combination is chosen, the aim is for a subtle, natural look that leaves patients looking refreshed rather than changed. To achieve this requires a careful assessment of each patient's anatomical and personal characteristics, and a detailed discussion of their needs and expectations. Just as important is the physician's recommendation on which combination of treatments to use, and in which order they should be given.

16.2
A Novel Combined Method in Fractional Laser Resurfacing
Mario Trelles
Instituto Médico Vilafortuny, Cambrils, Spain

Laser treatment for skin rejuvenation has progressively occupied a relevant place in the therapeutic armamentarium of dermatological interventions. A laser console, incorporating an Ultrasound device in combination with a CO_2 laser for irradiation of energy in microbeams, offers a variety of possibilities for treating multiple skin conditions. For example, a CO_2 laser skin fractional irradiation, followed by passes of the Ultrasound hand-piece enhances results achieved due to effects of cosmetic ingredients, which are helped by the action of the Ultrasound, to penetrate the epidermis. Combination of laser, Ultrasound and cosmetics offer the possibility of treating a wide spectrum of treatment indications. Treatment approach is safe and results are of high efficacy with short recovery time in indications such as scar revision, treatment of stretch marks and skin rejuvenation.
In the CO_2 Pixel console (Alma Lasers, Israel), the CO_2 laser with an Ultrasound Device (Alma Lasers, Israel) the CO_2 laser is set to operate in microsecond pulses in a rolling motion producing tiny punctures in the skin by ablative energy. Intensity and density of beams touching the skin is governed by number of laser passes, speed of rolling the handpiece over the skin and the total cumulative laser energy deposited per area. Treatment is followed by cosmeceuticals applied to the skin which are actively introduced by the action of the Ultrasound to promote tissue biological reaction enhancing results.

16.3
Efficacy and evaluation of CO_2 fractional resurfacing
Peter Bjerring
Molholm Hospital, Denmark

Fractional CO_2 laser resurfacing is now widely used due to less risk of side effects and shorter duration of down-time after the procedure compared to classical CO_2 laser resurfacing. However, multiple treatments are required due to the partial coverage of the skin in each session and hence lower efficacy.
A series of laser parameters can be varied: laser power and pulse duration, density of microspots on the skin surface, and laser spot diameter. Different combinations of these parameters will result in different types of controlled tissue damage ranging from coagulation (non-ablative CO_2 laser treatment) to deep evaporation of tissue columns (ablative CO_2 laser treatment.

As a general rule, deeper damage and the more extensive coverage of the skin surface will result in more and prolonged side effects such as crusting and erythema. Different treatment modalities involving different laser settings for deep and shallow treatment may reduce the side effect-treatment effect ratio.

16.4
Fraxel repair treatment:
Aristides Arellano-Huacuja
Clinica Dermatologica y Cirugia Estetica de Puebla, Puebla, Mexico
Fraxel repair is a revolutionary laser treatment to correct deeper wrinkles, tighten skin and remove years from the appearance.

Fraxel repair uses a high-intensity carbon dioxide (CO_2) laser. Through fractional technology, thousands of microscopic laser columns penetrate deep into the skin to remove old and damaged skin cells. This stimulates the body's own natural healing process, which replaces the cells with fresh, glowing, healthy skin.

SESSION 17 - Hair Removal

17.1
My choice of laser for hair removal and why
Sean Lanigan
sk:n limited, UK

The use of lasers and light based treatment for hair removal is one of the commonest aesthetic treatments performed in the UK. Hair reduction by lasers has been achieved primarily by selective photothermolysis of pigment in hairs using lasers such as the long pulsed ruby (694nm) and alexandrite (755nm) lasers. These wavelengths are well absorbed by melanin and have been shown to produce permanent hair reduction in dark hair in fair skin. Multiple treatments are required and in general a 60 - 70% reduction in hair growth can be achieved in this way. Longer wavelength lasers are the diode operating around 810nm, and the long pulsed Nd:YAG at 1064nm. These longer wavelengths of light are less avidly absorbed by melanin and penetrate more deeply. Alternatives to lasers are Intense Pulsed Light (IPL) flashlamps, which are broadband light sources.

In darker skin phototypes, there will be significant absorption of incident light by epidermal melanin. Most side effects from laser and IPL hair removal are due to epidermal injury from this absorption of energy. The main strategies to minimize this are appropriate selection of wavelength and skin cooling which can be pre, during or post treatment. The Nd:YAG laser when used with longer pulse durations (3-60ms) has been shown efficacious in hair removal even in type V - VI skin and is my treatment of choice for skin types IV to VI. There are some doubts however, as to the effectiveness of this laser in treating white skin when compared to the ruby and alexandrite lasers and so I prefer the alexandrite laser for skin types I-III. Other strategies to improve outcome and reduce side effects will be discussed.

17.2
FIVE-YEAR RETROSPECTIVE STUDY OF DERMATOLOGICAL ADVERSE EVENTS SECONDARY TO LASER HAIR REMOVAL
Paul Myers
Lasersupport Ltd, Essex, UK

A study of adverse events relating from laser hair removal (LHR) presents the observations of the author, an experienced 'expert medical practitioner' (EMP), providing support services to UK laser hair removal providers, over a five year period. These providers are substantially non-medical clinics, providing hair removal, using equipment producing intense pulsed light (IPL). The results of a retrospective study of reported dermatological adverse events reported from 473 LHR providers in the UK, over a five-year period are presented. A total of twenty nine adverse event incidents were described with respect to event , skin type and the likely cause. An approximation of the prevalence of adverse events reported following LHR is given. The results of a voluntary survey of the supported clinics enquiring about their observed adverse events is presented, in order to attempt to compare the likely relationship between reported and non-reported incidents. Finally a list of likely causes of adverse events occurring in clinics providing laser and IPL laser hair removal services has been produced based on the experiences of the EMP over the five-year period. The study concludes that a significant morbidity is reported relating to the use of IPL for LHR, but the non-reporting of minor incidents suggest there is uncertainty as to the true prevalence of such adverse events. It was noted that many of the adverse events appeared preventable, and the closer adherence to clinical protocols, and increasing training for LHR practitioners is likely to produce a significant reduction in future adverse events.

17.3

THE PARADOXICAL EFFECT IN PHOTOEPILATION; POSSIBLE CAUSES AND PREVENTION ALTERNATIVES.

Mariano Vélez –González[1], Mario A. Trelles[2]
[1]*Hospital del Mar, Barcelona, Spain,* [2]*Instituto Médico Vilafortuny, Tarragona, Spain*

Introduction: The paradoxical effect in photoepilation is one of its inherent complications, as reported by several authors. The effect is based on the growth of hair or terminal hair in adjacent areas of the treated zone.

Several causes have been attributed to this effect, either as a result of the light systems, the wavelength, spectrum range and/or low doses used. Also, the dosages applied for hair removal have been related to this side effect, as well as existing pathological processes in hirsute women, in addition to age and treatment area.

Recent study results can provide guidance as to the mechanism that produces hair growth, which is a propagation of photons generated by the laser or IPL to adjacent areas. The low laser illumination might stimulate the growth of hair follicles in adjacent areas. This mechanism may be related to an effect, which has been known about for years, concerning the action of low density laser light to induce tissue activity during wound healing.

Material and Method:
A total of 70 patients with hirsutism in the face and neck and two other risk conditions capable of generating the paradoxical effect (ovarian cysts, fine hair, skin phototypes III and IV) were included in the study. In order to test the preventive efficacy of two alternatives -application of cold in the adjacent area versus topical application of eflornithine- we subdivided the patients into 30 patients who received the application of cold packs around the neck area being treated in each session and 40 patients who received topical eflornithine after treatment. Patients were assessed after 6 sessions.

Results: In our experience with patients who had IPL photoepilation using the two treatment alternatives discussed here, no paradoxical effect was observed in any of them after 6 sessions.

Discussion: The approach to avoid this incidence is to perform photoepilation, taking into account the above-mentioned possible causes. Studies on the interaction of light on the skin at various wavelengths and tissue, temperature can help to learn how to prevent this phenomenon from appearing. When photoepilation occurs, light increases scattering as temperature increases in the skin.

Conclusion: Helping to decrease temperature will reduce this side effect and therefore, adjacent areas during treatment should be cooled. Another approach can be that patients undergoing photo hair removal could use hair growth inhibitors such as Eflornithine for about 20 to 25 days following treatment.

17.4

(Estudio Preliminar) Uso simultaneo de Dye Laser λ 595nm y CO2 fraccional en el tratamiento de cicatrices queloideas

Guillermo Aldana
Aldana Laser Center, Caracas, DC, Venezuela

Sabiendo que una de las condiciones patologias de mas dificil tratamiento en la practica dermatologica es el queloide nos hemos propuesto idear combinaciones de diferentes longitudes de onda con la finalidad de lograr mejorar precozmente la sintomatologia sociada a estas (dolor,prurito y sensacion de tirantez) pero ademas reducir su tamaño mejorando su estetica y retardando su recidiva, me permito presentar este estudio que aun esta en fase preliminar por lo importante de sus resultados. Se sometieron un grupo de pacientes sin discriminar sexo, raza, ni edad a tres o cuatro sesiones de Dye Laser y a continuacion laser CO2 ambos en la misma sesión, el primero utilizando spot 10mm, fluencia de 11 j/cm^2 y tiempo de pulso 1.5ms realizando dos pases sin solapar pulsos e inmediatamente laser CO2 usando potencias desde 22 a 28 W, T:1200us,Dot: 350 y Stack 3 o 4 dependiendo el tamaño de la lesión, aplicación por dos dias de esteriode de alta potencia en unguento con cura cerrada y ®Cicalfate 3 veces al dia sobre la lesión completando 8 dias mas, se valoró con la escala de Vancuver para queloides, evidencia fotografica de alta resolución y escala analoga visual para el paciente.

Dentro del analisis de los resultados preliminarmente observamos reducción de la sintomatologia asociada hasta de 80% en la primera sesión, y abolición completa con la segunda, reducción muy significativa del la escala de Vancuver al mes de finalizar el estudio, mejoria significatica de la escala analoga visual.

17.5

Provocation of Flushing for Pulsed Dye Laser Treatment: Our Experience of Two Techniques

Muthu Sivaramakrishnan, Heather Cameron, Harry Moseley
Ninewells Hospital, Dundee, UK

Background: Heat labile vascular malformations can be difficult to treat with lasers as the inbuilt cold air cooling system can cause vasoconstriction, thus reducing the target further. Infrared lamps and topical niacin cream are used to provoke flushing in such instances before laser treatment.

Objective: We report four cases where flushing was induced by one of these methods before Pulsed Dye laser (PDL) treatment.

Method: Two patients with transient facial erythema received test doses of 585nm PDL (up to 7.5 J/cm^2, pulse width 6 msec, 7mm spot), after flushing was induced by applying niacin cream for 20 minutes. The other two patients received 3- 4 treatments of 585 nm PDL (up to 7 J/cm^2, pulse width 0.5 msec, 7mm spot) at 6 weekly intervals for vascular anomalies on the limbs that were more apparent in a warm environment, after exposing to infrared lamp for 5 - 10 minutes.

Results: One patient with topical niacin provoked flushing developed burning sensation and both had prolonged erythema for 24 hours, and decided against further treatment. The patients with infrared lamp induced flushing tolerated well and the vascular lesions were successfully provoked. During follow up, the PDL treated areas appeared pale and untreated areas appeared red after infrared lamp provocation, whereas little difference was noted before provocation.

Conclusion: Infrared lamp provocation was well tolerated, successful in provoking heat labile vascular lesions and in delineating untreated areas.

17.6
TREATMENT OF DIFFERENT TYPES OF VASCULAR LESIONS WITH SQUARE LONG PULSE Nd YAG 1064 NM LASER SYSTEM
Lazaro Perez
LASER MEDIC GELIDA, C/ Enric Prat de la Riba, 43, Spain

The objective of this study consists on evaluating the security and effectiveness of the square long pulse Nd YAG 1064 nm laser system in the percutaneous treatment of several types vascular lesions, keeping in mind that the different parameters of treatments that this technology offers in our practice, come from our subjective analysis of the lesion.

Material and Method: In a period of 34 months, a total of 122 patients have been treated. 13 men and 109 women with ages between 17 and 76 years old, who presented diverse types of vascular lesions located on the face, the neck, the décolletage and the legs. To carry out the vascular treatments was used a Square Long Pulse Nd YAG 1064 nm laser system, which consists on a laser of a maximum power of 14 000 W, in which you can adjust the fluence up to 300 J/cm2. The pulse duration can be adjusted from 0.1 ms up to 300 ms.The number of sessions applied for a completed treatment were from one to three sessions with an interval of 3 months apart.

Results: It was demonstrated that the Square Long Pulse Nd YAG 1064 nm laser system is an effective devise in the treatment of a wide variety of vascular lesions. The adverse effects observed were limited, to immediate, as local reaction: erythema, urticariform lesions and small hematoma. In some cases, mediate reactions were limited to transitory híperpigmentations related with high phototypes. The index of the patients' treaties satisfaction was of 97,08%.

SESSION 18 - Biophotonics - OCT & Spectroscopy

18.1
Light Bites: Quantitative optical coherence tomography for oral medicine and dentistry
P Tomlins
Barts and The London School of Medicine and Dentistry, London, UK

Optical coherence tomography is becoming an increasingly important medical imaging modality. This is primarily due to regulatory approval of commercial clinical instruments and also technological advances that have made real-time data acquisition and visualisation possible. However, there are key questions for OCT regarding how it can best be utilised within current medical practice to improve patient care and reduce costs. These are best answered by understanding the strengths and weaknesses of the technique and devising methodologies to present complex data in manner that is readily accessible with the relevant diagnostic information.

Therefore, this talk will present advances in clinical OCT in the context of research from our group, where we have investigated the capability of OCT to make objective, quantitative 3D measurements of intrinsic tissue properties. These are related to underlying pathological conditions such as epithelial dysplasia and mineral loss in bone and teeth. It will be shown how OCT has the immediate potential as a tool for biopsy site selection. Furthermore, the necessity for measurement phantoms in this field will be discussed and some recent developments presented.

18.2

OCT-imaging of PWS treated with pulsed dye- and pulsed Nd:YAG-laser

Carsten Philipp, Maria Ziolkowska, Margitta Poetke, Peter Urban, Ute Müller, H.-Peter Berlien
Ev. Elisabeth Klinik, Berlin, Germany

Purpose:

Optical coherence tomography (OCT) is able to produce two-dimensional images of living skin in situ with good correlation between histological samples and healthy and diseased skin layers. In this investigation we studied the OCT for vascular imaging.

Material and methods:

We investigated normal skin and PWS before and after pulsed dye- / Nd:YAG-laser treatment (Cynergy, Cynosure) of 36 patients (6 months – 48 years). We used two frequency-domain OCT-systems (SR-Callisto, Ganymede, Thorlabs), both permitting an optical penetration depth of <1000µm and 2000µm width (axial resolution <7µm, lateral resolution <8µm). Parallel to the OCT scans color images were taken from the skin surface of the OCT-area. The OCT-images were evaluated by non blinded investigators and set into relation to clinical appearance.

Results:

The OCT images display an increase of clearly demarcated vascular spaces in PWS compared to normal skin. Lighter PWS showed significant smaller vessels in the OCT-image as darker PWS. After laser impact smaller vessels vanish, but larger vessel display shrinking and intravascular blood clotting after dye-laser and less sharp demarcation or even vanish after Nd:YAG-laser.

Conclusion:

As pulse duration and wavelength are crucial the a priori measurement of vessel size should add some efficiacy (and maybe safety) to laser treatment. OCT may be used as investigative tool in the clinical evaluation and for monitoring of the response for an individualized laser therapy of PWS.

Keywords:

OCT, skin-imaging, Port-Wine Stains, capillary malformation, capillarovenous malformations, photothermolysis, photodestruction, vessels, vessel diameter, dye laser, pulsed Nd:YAG-laser

18.3

TOWARDS OBJECTIVE ENDOSCOPIC DIAGNOSIS OF EARLY BARRETT'S NEOPLASIA USING FIBRE-OPTIC RAMAN SPECTROSCOPY.

Max Almond[1], Jo Hutchings[1], Catherine Kendall[1], John Day[2], Neil Shepherd[3], Hugh Barr[1,2], Nick Stone[1]
[1]Biophotonics Research Unit, Gloucester, UK, [2]Interface Analysis Centre, Bristol, UK, [3]Gloucestershire Royal Hospital, Gloucester, UK

Introduction: Raman spectroscopy is a powerful analytical technique that can rapidly and accurately identify biochemical changes in cells that have become neoplastic. We are attempting to translate this laboratory technique into an endoscopic tool that can identify high-grade dysplasia (HGD) and early malignant change (T1a) within Barrett's oesophagus. Here we demonstrate that a novel fibre-optic Raman probe can correctly classify the pathology of ex vivo oesophageal tissue.

Methods: A custom-built Raman probe, designed to fit through the instrument channel of a standard endoscope, was used to measure Raman spectra from ex vivo oesophageal tissue following oesophagectomy, endoscopic resection, or point biopsy from patients with Barrett's oesophagus +/- neoplasia. 1s spectra were measured using a monochromatic 830nm laser for excitation. Principal component fed linear discriminant analysis with leave-one-spectrum-out cross validation was undertaken to correlate Raman spectra with histopathological diagnosis and calculate probe accuracy.

Results: 348 spectra were measured from ex vivo tissue from 38 patients. Fibre-optic Raman measurements were able to discriminate between HGD/adenocarcinoma and Barrett's oesophagus with a sensitivity of 88% and specificity of 87%. The positive predictive value for detecting a neoplastic lesion was 95% in this model. Neoplasia could be discriminated from normal squamous oesophagus with a sensitivity of 93% and a specificity of 95%.

Conclusion: Fibre-optic Raman Spectroscopy could enable endoscopic targeting of early neoplastic lesions in the oesophagus facilitating potentially curative endoscopic resection. This could prevent progression to invasive malignancy and minimise the need for major surgery. Preparation is underway for an in vivo pilot study.

18.4

FOURIER TRANSFORM INFRARED AND RAMAN SPECTROSCOPY FOR REAL-TIME DIAGNOSIS OF LEUKAEMIA

Olivia Heenan[1,2], Nick Stone[1,2], Adam Rye[3], Richard Lush[3], Keith McCarthy[3]
[1]Cranfield University, Bedfordshire, UK, [2]Biophotonics Research Group, Gloucestershire Royal Hospital, Gloucester, UK, [3]Cheltenham General Hospital, Cheltenham, UK

Each year in the UK 7,000 people are diagnosed with leukaemia. As with all cancers, the key to a good prognosis is early and accurate diagnosis. Currently, leukaemia diagnosis relies on subjective histopathological analysis and often further costly techniques are required for accurate classification.

Vibrational spectroscopies utilise light to probe the molecular vibrations within disease states to identify specific biochemical changes. These techniques are non-invasive, automated, easily repeatable and non-subjective thus can be employed for diagnostic purposes. There have been numerous studies into the successful diagnosis of cancers such as breast, colon and lung using vibrational spectroscopic analysis of tissue samples.

This study explores the use of two complementary vibrational spectroscopic methods, Raman and Fourier Transform Infrared Spectroscopy, for the analysis of whole blood directly deposited onto slide. This would eliminate the need for the more commonly used centrifugation whereby plasma and buffy coat (containing white blood cells) are extracted, thus reducing the sample preparation time.

Whole blood from healthy volunteers, previously treated and untreated chronic lymphoblastic leukaemia patients was subject to centrifugation to obtain blood fractions for analysis. Buffy coat and whole blood were cytospun onto calcium fluoride slides and plasma and whole blood were pipetted for drop coating deposition analysis. Thirty point spectra were taken from each sample and the resulting data compared with histopathology.

Initial results show potential for a real-time analytical method for leukaemia diagnosis. Multivariate statistical analysis will further identify the main biochemical features that distinguish leukaemias thus highlighting biochemical markers for diagnosis.

SESSION 19 - The Problem Page

19.2

Laser and ipl combined therapy is effective to improve scars

Montserrat Planas[1], Adriana Ribe[1]
[1]Policlinic Torreblanca, Sant Cugat del Valles, Spain, [2]Ribeclinic, Barcelona, Spain

Several therapeutic strategies have been applied to improve scars with variable effectiveness. A study combining ablative laser and IPL (group I) and Nd:YAG and IPL (group II) therapies to treat scars is performed and the clinical improvement is evaluated.

Twenty patients were selected and divided in 2 groups. I: 10 received 1 CO2 session (ultrapulse 90ms, 3W) followed 3 months after by 3 monthly IPL (590nm, double pulse, 4ms, 30-32J/cm2, delay 10 ms) and II: 10 were treated with Nd:YAG (12 ms, 120J/cm2) and 1 month later underwent the same 3 IPL sessions. Clinical improvement was assessed by comparing pictures and bygrading changes in pain, color, texture and volume (0-10) by 2 non-blinded observers.

The rates of improvement were 80% for pain, 70% for color and volume and 60% for texture in group I and in group II, 80% for color, 70% for pain, 60% for volume and 50% for texture. Patients' satisfaction was high. No significant complications occurred.

Both combined therapies are effective to improve scars. Whereas both combinations improve pain and color similarly, ablative laser and IPL achieve better results in texture and volume and non-ablative and IPL work better for color.

19.3

Pulsed Dye Laser (PDL) in Hypetrophic Scars and Keloids: Our Experience in The Past 3 Years

FEDELE LEMBO, DOMENICO PARISI, LUIGI ANNACONTINI, MICHELA CAMPANARO, ARIANNA MAIORELLA, AURELIO PORTINCASA
PLASTIC AND RECONSTRUCTIVE SURGERY DEPARTMENT, FOGGIA, Italy

Background: Pathological scars affect about 3% of word population. Common integrated protocol includes application of silicone sheets, local infiltration of corticosteroids, massage with scar ointment, total sun protection. Recently the Pulse dye laser was used with satisfactory results in the treatment of hypertrophic and keloids scars. Biological mechanisms of its interaction with patologic scars are still not completely clear.

Methods: January 2008 - January 2011 38 patients (18 hypertrophic scars, 20 keloids), 18F-12M, range 16-68, mean age 42, were treated. 12 affected head&neck, 18 trunk, 4 arms, 2 legs of whom 29 results of surgery, 4 of trauma, 4 of cosmetic procedures and 1 burn. Each received PDL treatment related to clinical conditions (mean fluence 7,5 j/cm2, pulse duration 1.5 ms and spot size 7 mm) for 3-to-8 treatments at 4-week intervals and followed by daily application of hydrating products. All patients were assessed with the "VANCOUVER SCAR SCALE".

Results: After 4 treatments: 30% showed an improvement. After 8 treatments: 70% pz showed clinical improvement (50% high results, 20% moderate to low results). Overall compliance was good. In only 2 patients we had complications such as skin depigmentation and new scar making. In 3 cases we had improvement of the keloids.

Conclusions: Our results show the effectiveness of PDL in selected patients programming its parameters depending on local clinical aspect. Our follow up showed symptoms reduction in grade for hypertrophic scars, stable results (no relapses) in keloids.

19.4

High Energy Laser enable a paradigm shift in surgery with costreduction *Pattern could be history of prostate therapy*

Hans Hainz
Retiree urologist/DGLM/ASLMS/EMLAExC, D53359 Rheinbach, Germany

Worldwide ageing population needs more medicine, especially minimal invasive surgery that should be affordable everywhere.

Some data from Germany show facts.

Urologists worked since middle egyptian Dynasties with catheters They dreamed to abolish < knife> and enter body bottom-up the normal urinary channel system to perform diagnosis and therapy. Since 1920 endoscopes enabled prostate-electrosresection; our standard with transistors and glas fibres since 1970. Syncronous laser enabled step by step since 1991Prostatecoagulation and via Cutting in 1998 first Vaporisation=PVP by 80W KTPLaser/Malek &Kuntzman. With 300000 PVP in 2007 and 2010 80% of all benign prostate enlargement operation in USA it is new standard.

Urologic < key-hole-surgery> changes general surgery today and surgeons want to divorce from < bloody mechanical butchery>. Minimal invasive methods via ports are booming and < operating by wire> via long distance telecommunication by multibranch mechanical robots is up to date. Alas with antique tools furtheron and soaring costs. .

We all know laser with simple glass fibres enables by increase of energy in tissue coagulation, carbonistaion, vaporisation and even atomic photoablation. This multitool function with modern imaging systems and Seldinger punction technique can be used everywhere e.g. in cancers of the old as far as we have no causal therapy. Besides it's less mutilating and cheaper.

19.5

Photodynamic therapy for prostate cancer: what needs?

Nacim Betrouni[1], Pierre Colin[1,2], Philippe Puech[1,3], Arnauld Villers[1,2], Serge Mordon[1]
[1]INSERM U703, Univ. Lille Nord de France, LILLE, France, [2]Department of Urology, Lille University Hospital, LILLE, France, [3]Department of Radiology, Lille University Hospital, LILLE, France

Prostate cancer (PCa) remains the most commonly occurring malignancy among men in the developed countries. For its support, many researches are undertaken in different aspects including diagnosis, prognosis, and treatment. For its treatment, total ablation of the gland remains the gold standard even when the tumor is localized. Various techniques are proposed (surgery, high intensity focused ultrasound (HIFU), brachytherapy, radiotherapy). The performance of such radical therapies is mitigated by its significant morbidity and side effects that reduce the quality of life of the patient, primarily impotence and incontinence. This is especially relevant with young patients having localized tumors. Currently, new therapeutic options propose a partial or focal ablation for prostate tumors, preserving benign tissues and significantly decreasing the treatments side effects. New mini-invasive focal ablation therapies are being developed using different tissue "destruction" energies; ultrasound in HIFU, cold in cryotherapy, heat in thermo-therapy and light in photodynamic therapy (PDT). These last years, interstitial PDT (iPDT) appeared as an interesting technique to locally target some early stage lesions and its efficiency was assessed in many clinical trials. However, its widespread remains limited. This review discusses the challenges for the development of this therapy.

SESSION 20 - Photobiomodulation

20.1

Low intensity level laser influence over bone repair

VALERIA SELLA, PAULA MACHADO, FERNANDO BOMFIM, MARIA JOSE MORSOLETO, MILTON CHOHFI, CESAR ISAC, HELIO PLAPLER
UNIFESP, SAO PAULO, Brazil

To determine the effect of low level laser therapy (LLLT) on bone repair after femur fractures; eighty one adult Wistar rats were randomly assigned to three groups. Each group was then divided into 3 subgroups (1, 2 and 3) regarding the day of death (8^{th}, 13^{th} and 18^{th} post-operative day). An experimental model of femur total fracture was created taking off a 2mm stump from the mid third of the right hind limb femoral shaft, which was assigned to in vitro study for cellular changes. The femur was stabilized by a straight titanium plate and fixed by 4 screws. Animals and cell cultures from group A (n=30) were exposed to 8 sessions of LLLT (GaAlAs, 200mW power, λ=808nm, dose of 2J/cm^2), on 2 points by contact method, once a day, from the first to the 8^{th} P.O. day. Group B (n=30) went through exactly the same procedure but for laser application. Group C (n=21) did not suffer any intervention. Morphometric analysis showed that in group A there was a significant decrease in inflammatory infiltrate, intense trabecular bone matrix and periosteum formation and an increase in newly formed bone area. Immunohistochemistry analysis showed that in-group A there was a higher expression of bone growth proteins. It was observed an increase of calcium serum level on subgroup 1 and an increase of alkaline phosphatase level on subgroup 3. LLLT was important on newly formed bone tissue, is relevant to fracture healing and may be indicated as adjunct in treatment/recovery in fractures.

20.2

Low-level laser therapy at 635nm: An Effective Solution for Non-Invasive Body Contouring of the Waist, Hips, and Thighs

Ryan Maloney
Primcogent Solutions, Dallas, Texas, USA

Background: Low-level laser therapy (LLLT) represents a burgeoning solution for non-invasive body-contouring of the waist, hips, and thighs. LLLT has been examined under astringent clinical parameters and has demonstrated, as a standalone application, a circumferential loss of 9.1 cm in just two weeks. Nevertheless, additional clinical assays are required validate the utility of therapies like LLL. Accordingly, the purpose of this retrospective study was to evaluate the efficacy of low-level laser therapy for non-invasive body contouring of the waist, hips, and thighs.

Methods: Data from 689 participants were obtained to evaluate the circumferential reduction demonstrated across the treatment site of the waist, hips, and thighs as well as non-treated systemic regions. Patient data were not pre-selected; all reports provided by clinics using LLLT for body contouring were used to evaluate the efficacy of this treatment. Participants received a total of six LLLT treatments across two-weeks having baseline and post-procedure circumferential measurements recorded. Measurement sites included waist, hips, thighs, arms, knees, neck, and chest.

Results: The mean circumferential reduction reported for the waist, hips, and thighs one week after the treatment regimen was 3.27 inches ($p<0.0001$). Furthermore, participants demonstrated an overall mean reduction of 5.17 inches across all measurement points 5.17 inches ($p<0.0001$). Each anatomical region measured exhibited a significant circumferential reduction.

Conclusion: These data reveal that the circumferential reduction exhibited following LLLT is not attributable to fluid or fat relocation as all measurement points, including non-treated regions, reported an inch loss.

20.3

The Use of Low Level Laser Therapy (LLLT) and LEDs for the Treatment of Alopecia

Malek Menem[1], Allam Menem [2], Mariano Vélez [3]
[1]Specialist Medical Center, Barcelona,Spain.[2]Teknon Medical Center, Barcelona. Specialist Medical Center, Barcelona,Spain. [3]Departament of Dermatología, Hospital del Mar, Barcelona. [3]Vilafortuny Medical Institute, Tarragona. Spain.

Introduction: The use of light sources such as Low Laser Light Therapy LLLT and LEDs for the treatment of Androgenetic Alopecia and the Areata is in constant review. Although there are few published scientific studies, there are many devices that offer good results and high efficiency.

Objective: To evaluate the effectiveness of light sources, LLLT and LEDs with low power density, for the treatment of Androgenetic Alopecia and the Areata, according to the scientific literature.

Methods: A literature search was performed in different scientific database, Relevant studies were classified according to their level of scientific evidence and recommendation grade . The results obtained were analyzed and compared.

Results and Conclusions: The preliminary studies were in the 80's with laser emission with animal studies and prospective clinical trials show effectiveness in stimulating hair growth. Subsequent studies dating mostly the same result of these recent years, generally being few and usually are prospective, one is double blind randomized. The dosimetric parameters, the number of patients, and the laser emission used in the studies are not the same, making it difficult to compare results. The small number of published studies with good level of scientific evidence limited to draw firm conclusions about their effectiveness. We should also note that, ¿ If the currently devices on the market comply with the characteristics and dosimetric parameters to produce the same desired effects seen in studies that shows effectiveness?. It makes presentation of these data and the comparison of studies.

20.4

The role of Phototherapy as an adjunct to the treatment of contractile scars in burned patients

Joana Costa[1], Rita Valença-Filipe[1], Isabel Bartosch[1], Antonio Costa-Ferreira[1,3], Jorge Rodrigues[1,2], Alvaro Silva[1]
[1]Centro Hospitalar São João, Porto, Portugal, [2]Universidade Fernando Pessoa, Porto, Portugal, [3]Faculdade de Medicina da Universidade do Porto, Porto, Portugal

Contractile scars are frequent sequelae of extensive and deep burn injuries; they are associated with important functional limitations. Surgical correction is usually the treatment of choice, butis ofteninsufficient,due to poor skin quality after burn injury and split skin grafts. It is known that Laser therapy and Intense Pulsed Light (IPL) are used for the improvement of the skin elasticity and overall quality.

The authors present the case of a 26 year-old female that suffered second and third degree burns to the face, neck, trunk and upper limbs (35% total body surface burned). She was submitted toreconstruction of the burned areas with split skin grafts in several surgical procedures. Due to presence ofcontractile scars she was submitted to laser therapy (two sessions, in the lower lip) and IPL (ten sessions, neck and upper limbs), with functional and aesthetic improvement of the scared areas.

Laser therapy and IPL have a role in dermal remodeling, altering skin composition and architecture,resulting in the improvement of skin quality,resistance and elasticity. The case presented shows a patient with functional daily life limitations due to retractile scars which achieved great function and quality of life improvement after phototherapy.

20.5

Radiofrecuencia fraccionada sublativa para el tratamiento de las cicatrices de acné. Una técnica mínimamente agresiva a tener en cuenta - *Sublative fractional radiofrequency for the treatment of acne scars. A minimal invasive technique to consider.*

Cesar Arroyo[1], Pablo Naranjo[0,2], Mercedes Martinez[1], Ana Sanchez[0,2]
[1]HM Hospital Monteprincipe, Madrid, Spain, [2]Clinica Elite Laser, Mdrid, Spain

Introduccion

Un problema importante a la hora de establecer el mejor tratamiento para corregir las cicatrices de acné es seleccionar la técnica apropiada para cada caso. Otros factores que influyen son el manejo del post tratamiento y el periodo de recuperación pues se trata de personas jóvenes insertadas en el mundo laboral activo que no pueden someterse a periodos largos de incapacidad. Las alternativas hasta ahora eran terapias de lenta evolución y escasa repercusión en el resultado y en el otro extremo técnicas muy cruentas que van desde la cirugía a el uso de láseres muy agresivos.

Objetivo

Ver la evolución de los pacientes con un nuevo sistema basado en la estimulación y remodelación dérmica con escasa ablación superficial, valorando el tiempo de recuperación y el grado de satisfacción experimentado.

Materiales y métodos

RF fraccionada sublativa (EMatrix Syneron Candela)
Protocolo mínimo de tres sesiones intervalo no inferior a cuatro semanas
Pacientes que cumplan estos criterios de selección
Edades comprendidas entre los 18-35 años
Sin tratamientos previos en los seis meses anteriores
Sin enfermedad infecto contagiosa ni enfermedades del colágeno en el momento actual.
Sin tratamientos inmunosupresores.
Análisis fotográfico
Encuesta de satisfacción

Resultados

Aun por concluir, los resultados preliminares son muy alentadores y nos permiten incluir una alternativa terapéutica novedosa con escasos efectos colaterales.

20.6
Comparison of side effects of Propranolol and Prednisolon in the systemic treatment of Infantile Haemangioma (IH)
Kathrin Stawski, Inge Schwab, H.-Peter Berlien
Ev. Elisabeth Hospital Berlin, Berlin, Germany

The purpose of this study is to investigate the influence of the difference in use of mineralocorticosteroids and glucocorticosteroids and the total time of systemic treatment with both substances

The evaluation of the published articles was done for the following aspects: substances, life threatening or minor side effects age and time of application, acute or chronic side effects. Here was differentiated between less or more one month of total drug therapy.

The risk for hypertension and diabetes is in the use of mineralocorticosteroisd higher than by glucocorticosteroids. All reported side effects happened by a longer treatment than one month. The only contraindications are a acute perinatal virus infection or premature infant in the first month of life due to prolonged brain maturation. In Propranolol therapy all side effects where time independent and the majority happened during short time therapy with severe acute side effects like bradycardia, hypotension, hypoglycaemia and hypokaliaemia

In IH where an urgent systemic therapy is necessary due to life threatening complications and contraindications for Propranolol or therapy must start before examination to exclude contraindications, Prednisolon is the drug of first choice. Furthermore in risky situations where a continious feeding and close medical control of vital parameters is not guaranteed to start with Prednisolon as a short time therapy and than change to Propranolol is the safer way. In therapeutic regimes with direct induction of regression the systemic therapy in the most cases even in complicated IH can stop after few weeks.

SESSION 21 - Laser Science

21.1
Monte Carlo Simulations for Optimal Light Delivery in Photodynamic Therapy
Ronan Valentine[1,2], Kenny Wood[0,2], Tom Brown[0,2], Sally Ibbotson[1], Harry Moseley[1]
[1]Photobiology Unit, University of Dundee, Ninewells Hospital & Medical School, Dundee, Angus, UK, [2]School of Physics & Astronomy, University of St Andrews, St Andrews, Fife, UK

Background:
The choice of light source is important for the efficacy of photodynamic therapy (PDT) of nonmelanoma skin cancer (NMSC). As light is an important component of PDT, the characteristics of any light source will have an impact on PDT dosimetry.

Objective:
We simulated the photodynamic dose (PDD) deposited to a tumour during PDT using theoretical radiation transfer simulations performed via our 3D Monte Carlo Radiation Transfer (MCRT) model for a range of light sources with light doses up to 75 J/cm^2.

Method:
The PDD delivered following superficial irradiation from a) non-laser light sources, b) monochromatic light, c) alternate beam diameters and d) re-positioning of the tumour within the tissue was computed.

Results:
a) The administered PDD to the tumour by the Aktilite was 2.6 times greater than the Waldmann 1200 at a tumour depth of 2 mm. b) Tumour necrosis occurred at a depth of 2.2 mm and increased to 3.8 mm for wavelengths 405 nm and 630 nm, respectively. c) Increasing the beam diameter from 10 to 50 mm had very little effect on depth of necrosis. d) As expected, necrosis depths were reduced when the tumour was re-positioned deeper into the tissue.

Conclusion:
These MCRT simulations show clearly the importance of choosing the correct light source to ensure optimal light delivery to achieve tumour necrosis. Our model is a useful tool for evaluating the significance of the source characteristics.

21.2

Modelling Q-switched Nd:YAG laser treatment for tattoo removal using Finite Element software.

Alex Humphries[1,2], Tom Lister[1], Philip Wright[1], Mike Hughes[2]
[1]Wessex Specialist Laser Centre, Salisbury, UK, [2]University of Surrey, Guildford, UK

Background:
Q-switched laser therapy is common practice for reducing pigmentation of tattoo lesions. Although the mechanism of ink fragmentation is subject to some controversy in the literature, thermal and acoustic effects are thought to contribute significantly to tattoo ink fragmentation. To optimise treatment outcomes, it is necessary to use appropriate laser settings to ensure ink particles absorb sufficient energy to fracture, whilst the surrounding tissue remains undamaged by thermal effects.

Objective:
Tattoo ink fragmentation mechanisms are investigated to estimate the laser settings for a range of particle depths, diameters and distributions within the tissue. The significance of light scattering and various fracture mechanisms can therefore be determined for laser therapy of tattoos.

Method:
Two-dimensional model geometry in COMSOL MultiPhysics is used to approximate light fluence from Nd:YAG laser treatments within a black ink tattoo. We applied this to thermal and acoustic analysis to determine how changes in the laser settings affect the chances of particle fragmentation.

Results:
The simulation results are supported by clinical and experimental observations for the fragmentation mechanism and optimal laser settings. The model provides calibration curves that can be used in clinic to predict the optimal Q-switched Nd:YAG laser settings based upon observed and predicted characteristics of the tattoo lesion.

Conclusion:
The simulation, supported by clinical observations and theoretical calculations for the response of black ink tattoo particles in tissue to laser therapy, can be used to estimate the optimal laser settings to minimise tissue damage and adverse effects, while maximising the treatment outcomes.

21.3

A New Monte Carlo Simulation for Predicting the Change of Port Wine Stain Skin Colour resulting from Pulsed Dye Laser Treatment

Tom Lister[1,2], Philip Wright[1], Paul Chappell[2]
[1]Salisbury District Hospital, Salisbury, UK, [2]University of Southampton, Southampton, UK

A new Monte Carlo simulation is presented which applies coefficients of skin absorption and scatter available in the scientific literature to simulate the diffuse reflectance of skin over the visible wavelength range. Novel features of this simulation include:

• The influence of melanin on the epidermal absorption and scattering properties are approximated. These properties are adjusted to help match simulated spectra to measured diffuse reflectance spectra from clinically normal skin.
• Port Wine Stain (PWS) skin is then simulated by the addition of multiple horizontal vessels to the model, whose depth, mean diameter and number are manipulated to match the measured reflectance spectra of adjacent PWS skin.
• Properties of the simulated vessels are subsequently manipulated to simulate laser treatment and thus the change in skin colour is predicted using this Monte Carlo simulation.

21.4

Safety of a novel Skin Tone Meter (STM) to determine Skin Tone in Fitzpatrick Skin Types I-VI prior to home use IPL treatment.

Sian Payne[1], Godfrey Town[2], Cae Ash[3], GD Ross Martin[4]
[1]CyDen Ltd, Swansea, UK, [2]University of Wales, Faculty of Applied Design & Engineering, Swansea Metropolitan University, Swansea, UK, [3]CILT, Institute of Life Sciences, Swansea University, Swansea, UK, [4]Greenwood Surgery, Nottingham, UK

Background & Objective: This study demonstrates the safety of using a novel STM to determine skin tone of various body sites, in subjects with Fitzpatrick Skin Types I-VI, prior to treatment with a home use intense pulse light (IPL) device (Ipulse®, CyDen Ltd.,Swansea, UK).

Method: The skin tone of 232 body areas on 55 individuals, of skin types I - VI, was graded with the STM. If of an appropriate skin tone, the area was treated with the Ipulse IPL unit using the skin tone setting according to the chosen reading from three sequential STM measurements from that body area. Skin reactions were globally assessed.

Results: The study showed that the 167 body areas given a single IPL treatment, using the setting indicated by the STM, produced no adverse skin reactions. All treated areas were reviewed after one week and no further adverse skin reactions were reported.

Conclusion: In use, this novel skin tone meter demonstrated the safety required to safely determine the skin tone, on various body areas, prior to treatment with a home use IPL device. Potentially, its scope for use may be extended from hair removal to skin rejuvenation and skin blemish treatment in the home environment.

21.5

Modelling patient variation in photodynamic therapy for basal cell carcinoma

Joe Dewhurst[1], Donald Allan[1,2], Ernest Allan[1], Linda Sheridan[1]
[1]The Christie NHS Foundation Trust, Manchester, UK, [2]University of Manchester, Manchester, UK

Photodynamic therapy (PDT) is a cancer treatment, involving the administration of a photosensitiser drug followed by irradiation of the tumour with visible or near-infrared light. The success of PDT depends on the presence of oxygen, light and photosensitiser in sufficient quantities at the treatment site. There are several treatment parameters which the clinician can vary to achieve this, such as dose of photosensitiser, drug-light interval and light dose. The pragmatic approach currently taken by most PDT centres is to work with a fixed treatment protocol based on evidence from clinical trials and clinical judgement. However, due to patient and lesion variation, this will almost certainly lead to variations in the levels of tissue oxygen, light and photosensitiser achieved in practice.

We have used Monte Carlo modelling to study the consequences of typical variations in optical and photosensitiser properties amongst patients and lesions. The model has been applied to skin PDT with systemic photosensitisation and external irradiation. The probability of photodynamic effect for tumours of different thicknesses was calculated. This showed that the likely variation amongst patients and lesions could lead to significant differences in the depth of photodynamic effect. Reasonable agreement between the model and patient data was found.

21.6

Skin permeating nanogels (SPNs) for drug-based laser therapy of vascular lesions

Bruno Ponte[1], Joana Fangueiro[1], António Baptista[2], Eliana Souto[1,3]
[1]Fernando Pessoa University, Porto, Portugal, [2]Iberia Advanced Health Care, Porto, Portugal, [3]Institute of Biotechnology and Bioengineering, Centre of Genomics and Biotechnology, Vila Real, Portugal

Nanotechnology is a multidisciplinary field, which involves the development of particles with small dimensions (<1000 nm). These particles are designed to interact with body cells using a high degree of specificity, aiming to achieve maximal therapeutic efficacy and minimal side effects. This research field may provide rapid advances in science and technology, creating countless new breaks for advancing medical science and treatments in human health care. Nowadays, laser is applied in various treatments e.g. dermatological, vascular, ophthalmic treatments. The use of the laser involves the application of gel substances which improves light targeting and reduces structural damage, burn or pain. In this work, we report the application of nanotechnology to development nanogel formulations composed of lipid materials in the way that they may be used as penetration enhancers in the skin, delivering drug substances to reduce pain and burn sensation. The aim of this study was to develop an effective drug delivery system for the topical delivery of analgesic drug. To achieve this primary goal, we have developed a skin permeating nanogel (SPN) system, based in w/o/w double nanoemulsion along with a gelling agent. Lipid nanoparticles dispersions were characterized using an oscillation test in the frequency range from 0.1 to 10 Hz at a constant stress amplitude of 5 Pascal. For the rheological analysis of nanogels, the shear stress has been evaluated as a function of the shear rate, revealing the pseudoplastic behaviour of the SPN.

SESSION 22 - Use of Make-up and other Cosmetic Applications

Lasers and Skin Camouflage - An Alternative Solution for Facial Congenital Naevi

W.A. Townley[2], T.W.H. Bragg[2], P.A. Wright[1], R.P. Cole[1]
[1]Wessex Specialist Laser Centre, Salisbury, UK, [2]John Radcliffe Hospital, Oxford, UK

Introduction

Congenital melanocytic naevi (CMN) are common lesions present at birth. Although benign, there is a low but uncertain risk of malignant transformation and CMN in socially sensitive regions can be the source of psychological morbidity. Surgical excision and reconstruction of these difficult cases can deliver excellent results. However, in some cases, non-operative treatment may be desirable.

Case Report

We describe the case of a 16-year-old girl who presented to our department with a 5cm by 10cm pigmented periorbital melanocytic nevus that was the source of much social distress. Following successful test patches, definitive treatment was carried out with the Q-switched Ruby laser (694mm at 6.0J/cm^2) and depilation with the Alexandrite laser (755nm at 16.0J/cm^2 and 40ms pulse width with surface air cooling). Intervention achieved significant lightening of the lesion and depilation as well as facilitating application of skin camouflage make-up. The treatment has dealt with issues relating to self-consciousness allowing the patient to engage in full time employment.

Summary

Although surgical excision is the mainstay of treatment, laser therapy followed by the application of skin camouflage make-up can provide a useful alternative solution with the potential to deliver a good cosmetic improvement.

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POSTER SESSION 2

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POSTER PRESENTATIONS

POSTER SESSION 1

Thursday 10th May
4:00 – 4:25

P1.1
The role of laser therapy in the treatment of facial vascular lesions - apropos of two clinical cases
Rita Valença-Filipe[1], Joana Costa[1], Isabel Bartosch[1], Jorge Rodrigues[1,2], Álvaro Silva[1]
[1]Centro Hospitalar São João, Porto, Portugal, [2]Universidade Fernando Pessoa, Porto, Portugal

Vascular lesions in the head and neck region, including hemangiomas and port-wine stains, can be physically disfiguring and psychologically disturbing for the afflicted individuals. Many different treatment modalities have been used. In the past two decades the Nd:YAG laser has emerged as a new mode of treatment for this type of lesions.

The authors present the applicability and results of the Nd:YAG laser therapy in two distinct case reports. The first case refers to a 46 year-old female born with a giant cavernous hemangioma of the upper and mid-face. She had undergone five sessions with a seven-week interval. Significant size reduction and lightening of the lesion were attained. The second case refers to a 47 year-old female with birth port-wine stains affecting the left face, submitted to four sessions, with a six-week interval. The results showed diminution and disappearing of some lesions. No complications were documented; high-level satisfaction was achieved in both patients.

Photocoagulation of hemangiomas and port-wine stains with Nd:YAG laser is an effective treatment for carefully selected patients. When properly applied, this technique can achieve reduction in the size of lesions without compromising cosmesis, which has been corroborated in the cases presented.

P1.2
The treatment of legs veins with IPL and ND:yag Laser.
Aristides Arellano-Huacuja
Clinica Dermatologica y Cirugia Estetica de Puebla, Puebla, Mexico

The most recent laser used in the treatment of blood vessels is the ND YAG pulsating at a length of 1.064 nm and called the Vasculight light, which emits energy up to 150j/cm2. This system is based on the deep penetration of these wave lengths in order to photocoagulate larger blood vessels (especially in the lower extremities), as reticulated varicose veins, essential and secondary telangiectasias, and, therefore, substituting for sclerotherapy. The light of the laser is absorbed in a selective way by chromophore (hemoglobin), generating heat above the point of coagulation and causing the re-absorption of the vascular walls.

P1.3
Three-level full factorial design of Lipid Nanoparticles (LNs) for vascular laser therapy
Joana Fangueiro[1], Bruno Ponte[1], António Baptista[2], Eliana Souto[1,3]
[1]University Fernando Pessoa, Porto, Portugal, [2]Iberia Advanced Health Care, Lda, Porto, Portugal, [3]Institute of Biotechnology and Bioengineering, Centre of Genomics and Biotechnology, Vila Real, Portugal

Vascular lesions, such as telangiectasias or spider veins, hemangiomas, are made up of abnormal blood vessels in the skin that can be treated with vascular laser therapy. Despite being safe and effective, this technique can induce pain and also skin damage. Lipid nanoparticles (LNs) can be useful to repair the skin damage due to the composition of lipids present in the sebum, namely ceramides (20%), cholesterol (20%), non-esterified fatty acids (20%), a variable percent of triglycerides and cholesterol esters (15%). LNs show the advantages of being biocompatible and biodegradable, since lipids figure in the skin' structure, and consequently when applied onto the skin can regenerate the damage tissue. Trimyristin is a triglyceride, based on glycerine esters that figure in the composition of human epidermis, and their use in skin delivery has proven to be safe. Trimyristin-based LNs were produced following a w/o/w double emulsion method, using a three-level full factorial design. LNs dispersions were characterized by determination of mean particle size (Z-Ave), polydispersity index (PI) and results showed Z-Ave between 129 to 256 nm and PI between 0.17 to 0.32. For preliminary investigations, factorial design seems promising to select appropriate LNs dispersions for skin administration.

P1.4
Objective Grading system to evaluate results in the treatment of Infantile Haemangiomas (IH)
Now listed under 7.3 in the Pigmented Lesions and Tattoos session in the oral programme

P1.5
Color Code Duplex Sonography (CCDS) in the early detection of ulceration in Infantile Haemangioma (IH)
Anis Almohamad, Carsten Philipp, Franziska Scheidt, H.-Peter Berlien
Ev. Elisabeth Hospital Berlin, Berlin, Germany

Ulceration is the most frequent complication. Our purpose was to evaluate the precursor sings and to verify the validity und utility of CCDS in the early detection of the risk for ulceration.

In a retrospective analysis the medical records of 275 patients with 376 IH G3a/3b were reviewed. In CCDS were assessed the hypo-hypersonoric structure, amount of hyperperfusion in microcirculation and formation of drainage veins in the subcutaneous IH. 60 IH (15,9%) in 55 patients (20%) experienced ulceration.

All ulcerations occurred in patients with combined dermal-subcutaneous IHs.
With 51,6 % head was the most frequently involved site,. Other ulcerated IH were located on trunk in 16,6%, extremities 15%, hands 5% and perineum 11,6% respectively.

66,6 % ulcerations occurred during the proliferative phase due to progressive tumor growth with destruction of the papillary Dermis. But 33,3% ulcerations occurred during the maturation or regression phase. In this 46,6 % IH superficial central draining-veins were seen in contrast to 13,2% of total IH. The reason for ulceration in these cases is a steal effect for the overlying skin.

Combined dermal-subcutaneous IH are the main factor for the risk of ulceration. In early primary ulceration an increasing microcirculation in the subcutaneous part is the main risk factor for dermal IH ulceration.

Late ulceration occurs during the maturation and regression phase. The superficial central draining-vein in IH represents a risk factor for ulcerations in case of decrease of the distance vein-skin.

Only an early direct occlusion of these drainage veins can prevent late primary ulceration

P1.6
(Estudio Preliminar) Dos longitudes de onda sinergicas para el tratamiento de cicatrices hipertroficas pigmentadas / (Preliminary Study) Two Synergetic Wavelenghts for teh Treatment of Pigmented Hypertrophic Scars
Guillermo Aldana
Aldana Laser Center, Caracas, DC, Venezuela

El presente estudio preliminar tiene como finalidad demostrar el incremento en la eficacia de dos Laser de diferente longitud de onda en el tratamiento de cicatrices hipertroficas con diferente etiologia que presentan ademas de la lesion cicatrizal propiamente dicha pigmentos de diferentes composiciones quimicas tales como asfalto, polvora,melanina y tintas vegetales, lo innovador de este ensayo es que ambos laser son usados sinergicamente durante la misma sesión permitiendo asi acelerar el proceso del tratamiento en un numero menor de visitas.

Para este trabajo que aun se encuentra en fase preliminar decidims escoger un grupo de pacientes sin distingo de sexo, raza o edad portadores de una lesion cicatrizal hipertrofica originada por cualquier etiologia pero que dentro de su estrctura presentara contenido de pigmentos de diferentes origenes como antes mencionamos, realizamos tratamiento durante la misma sesion con Laser QS Neodimio:Yag, Alerxandria y KTP e inmediatamente despues realizamos tratamiento con laser de CO2 fraccional sobre toda la lesión, se realizaron 3 tratamientos con un intervalo de un mes entre cada uno de las sesiones y se evaluo la condición con una escala analoga visual para el paciente, y dos expertos no dependientes del centro, ademas fotografia de alta resolución tomadas al inicio y final del proyecto y medición de la misma con instrumental de prescición (caliper).

Conclución prelimiar en los 5 pacientes hasta ahora tratados la mejoria es de un 80% en todas las condiciones con tasa de reducción a la mitad del numero de sesiones.

P1.7
PULSED DYE LASER AND CORTICOSTEROIDS: A COMBINED PROTOCOL FOR KELOID MANAGEMENT
FEDELE LEMBO, DOMENICO PARISI, LUIGI ANNACONTINI, ARIANNA MAIORELLA, MONICA RUCCI, AURELIO PORTINCASA
PLASTIC AND RECONSTRUCTIVE SURGERY DEPARTMENT, FOGGIA, Italy

INTRODUCTION: Keloids are pathologic scars which can cause functional and psychological morbidity. Many treatments have been tried with limited success but there aren't guidelines. Purpose of this study was to prove that the multiphase approach suggested by Authors is a good strategy for management of these lesions. MATERIALS AND METHODS: From January 2008 to January 2011 forty patients with keloid have been treated (13F and 27M; mean age 45 years). Scars interested sternum (14 cases), ear lobe (13), shoulder (6), check (4) and neck (3); mean scar duration was 38 months. Authors evaluated the effectiveness of multimodal approach to treat this pathological scar. In particular keloids were treated for 5 months with this protocol: silicon gel sheeting (every day for 12 to 24 hours per day) and every 15 days alternating intralesional corticosteroid injections (triamcinolone acetonide, typically 10 mg per linear centimeter) and pulsed-dye laser (wavelength 585-nm, pulsed duration 450 µs, fluence 6.5 to 8.0 J/cm2, spot size of 5 mm). The efficacy was proved by clinical measurements (using the Vancouver scale) and monitoring patients' subjective complaints of itch, pain and burning. RESULTS: After treatment there was a significant improvement of four variables: vascularity, thickness, pliability and pigmentation. Also patients reported a remarkable reduction of unpleasant sensations. The recurrence rate was 5% (2 cases) at 1 year. Local or systemic complications were insignificant. CONCLUSIONS: Clinical improvements demonstrated that this combined treatment is effective, safe, reducing the recurrence rate and therefore may be a good approach for keloid management.

P1.8
The role of Phototherapy as an adjunct to the treatment of contractile scars in burned patients
Now listed under 20.4 in the Photobiomodulation session in the oral programme

P1.9
Livedoid Vasculopathy: the role of phototherapy in the treatment of skin ulcers and cicatricial sequelae
Joana Costa[1], Rita Valença-Filipe[1], Isabel Bartosch[1], Jorge Rodrigues[1,2], Álvaro Silva[1]
[1]Centro Hospitalar São João, Porto, Portugal, [2]Universidade Fernando Pessoa, Porto, Portugal

Livedoid Vasculopathy is a rare, chronic and recurrent disease of the cutaneous circulation that is characterized by the development of livedo reticularis, purpuric macules, painful ulcers, hyperpigmentation and atrophic scars, in the lower extremities. Wound healing is a complex and unpredictable process, recent new laser technology has increased the options for treatment of scars. This has been shown to be beneficial for hypotrophic, incipient, hypertrophic and established scars.

The authors present a 28 year-old female with Livedoid Vasculopathy, presenting chronic bilateral leg ulcers. She underwent to repair with a split skin graft of one lesion, and remaining lesions left for secondary healing. The patient started IPL treatment sessions in the twentieth post-operatory day and a positive evolution in the healing and scarring process was observed.

Livedoid Vasculopathy is a chronic condition associated with recurrent ulcerations of the lower limbs. The authors applied phototherapy to improve the healing and scarring process with success. One can speculate that this improvement can be not only in the progression of existing lesions, but also in preventing the appearance of new lesions; more facts to corroborate this hypothesis are needed

P1.10

THE EXPRESSION OF MINERALIZED MATRIX AND GROWTH MARKERS IN BONE CULTURE SUBJECT TO LOW-INTENSITY LASER RADIATION: EXPERIMENTAL STUDY

Maria José Misael da Silva Morsoleto[1,2], Fernando Costa do Bomfim[1], Valeria Sella[1], Paula Machado[1], Maria Helena Raposo Fernandes[3], Hélio Plapler[1, 1]*UNIFESP, São Paulo, Brazil,* [2]*FHO/UNIARARAS, Araras, Brazil,* [3]*UPORTO, Porto, Portugal*

The objective of this work was to determine the effect of low intensity laser therapy in bone cell culture from femur of rats wistar. The crops were distributed into 2 groups; A and b. Group A, was exposed to low-intensity laser radiation (GaAlAs). Cell cultures showed a positive reaction to the presence of histochemistry alkaline phosphatase in 18 days. The intensity has increased significantly in culture treated with laser. Medium mineralized matrix in 0, 149333unidades of absorbance (AU) for the control group and 0.2245 au spent group with 18 days of culture. In immuno Osteocalcin expression remained unchanged until the 13 day to be deadpan at 18 for both groups. The osteopontin remained unchanged until the 13th day to decrease its expression in the control group and amounts in the experimental group. The osteonectin maintains the same values on the 8th day, expressed high values in the experimental group in 13 day that continues until the 18th, with smaller values for the experimental group. The experimental model used proved to be suitable for this type of observation.
Keywords: cell culture, low intensity laser therapy, bone growth

P1.11

EFFECT OF PHOTOBIOMODULATION ON MYOBLASTS C2C12 DURING DIFFERENTIATION PROCESS

Raquel Mesquita-Ferrari, Kristianne Fernandes, Paola Artilheiro, Jean Barbosa, Mikaele Tavares, Sandra Bussadori, Cristiane França, *Universidade Nove de Julho, São Paulo/SP, Brazil*

Low level laser therapy (LLLT) is widely used in order to promote faster and better quality repair muscle after different types of injury, however, many studies show controversies in the literature with regard to parameters. The aim of the present study was to evaluate the effects of low-level AsGaAl laser (Twin-Laser ®, MMOptics) on the proliferation of C2C12 skeletal muscle precursor cells submitted to differentiae process. C2C12 myoblasts were cultured in Dulbecco's modified Eagle medium containing 10% fetal bovine serum, treated with LLLT and after induced to differentiate by the addition of 2% horse fetal serum. The laser parameters used were 10 mW, energy density of 3 and 5 J/cm2 for 20 seconds and myoblast proliferation was evaluated 24, 48 and 96 hours after LLLT through a MTT assay. A non-irradiated group served as the control. The results were statistically analyzed using ANOVA/Tukey ($p < 0.05$) to determine differences between groups. The results revealed that LLLT induced a significant decrease in cell proliferation after 96h only at energy density of 5 J/cm2 in comparison to other groups. In conclusion LLLT induced a decrease after 96 hours in proliferation of C2C12 cells submitted to differentiae process.

P1.12

Effect of photobiomodulation on activated macrophages

Kristianne Fernandes[1], Raquel Mesquita-Ferrari[1], Nadhia Souza[1], Daniela Teixeira[1], Sandra Bussadori[1], Cristiane França[1], Fabio Nunes[2]
[1]*Universidade Nove de Julho, Sao Paulo, SP, Brazil,* [2]*Universidade de Sao Paulo, Sao Paulo, SP, Brazil*

Inflammatory cells invade muscle tissue after occurrence of injury and orchestrate the tissue repair process. Among these cells, macrophages play a major role. Low-level laser (LLLT) has been widely used in clinical practice to accelerate the repair of muscle tissue, but little is known regarding its effect on macrophages. The aim of this study was to analyze the effects of LLLT on activated macrophage proliferation. Macrophages (J774) were activated (24h, 1µg/mL LPS + 2µg/mL IFNγ incubation) to simulate an inflammatory condition, and received two different laser irradiation parameters (780 nm, 70 mW, 3 J/cm^2 and 660 nm, 15 mW, 7.5 J/cm^2). Proliferation was evaluated using the MTT method. Non-irradiated non-activated cells were used as controls. The results revealed that macrophages treated with LPS+ IFNγ after 3 and 5 days of culture showed a significantly decreased proliferation when compared to the control group. However, the proliferation of activated J774 macrophages was not changed by laser treatment (both parameters). LLLT promotes no significant change of proliferation of activated macrophages when using this model.

P1.13

LLLT reduces IL-1 mRNA expression in cryoinjured muscle

Fabio Nunes[1], Kristianne Fernandes[2], Agnelo Neves[2], Nadhia Souza[2], Sandra Bussadori[2], Raquel Mesquita-Ferrari[2]
[1]*University of São Paulo, São Paulo, SP, Brazil,* [2]*Universidade Nove de Julho, São Paulo, SP, Brazil*

Muscle repair is a complex process which involves cell proliferation, migration and differentiation and is regulated by growth factors and cytokines. Some studies suggest that low-level laser therapy (LLLT) promotes skeletal muscle regeneration by reducing the duration of acute inflammation and accelerating tissue repair. However, consistent information regarding the level of cytokines is missing. This study verifies the effect of LLLT on the expression of IL-1 in the tibialis anterior (TA) muscle of rats following cryoinjury. Adult male Wistar rats (n=35) were randomly divided into three groups: control (no lesion, untreated, n=5); cryoinjured group (n=15) and cryoinjured/LLLT group (n=15). Laser irradiation was performed three times a week on the injured region using the InGaAlP laser (660 nm; beam spot of 0.04 cm2, output power of 20 mW, power density of 500 mW/cm2, energy density of 5 J/cm2, 10-second exposure time). The groups were analyzed at 1, 7 and 14 days. Muscles were removed, total RNA was isolated using TRIzol, and cDNA was synthesized. Real-time polymerase chain reactions were performed using IL-1 specific primers; GAPDH was used to normalize the data. LLLT caused a decrease in IL-1 expression at

7 days following injury in comparison to the same period group without treatment. The level was also reduced in day 1, although not significantly. The LLLT was able to modulate cytokine expression, inducing a decrease in IL-1 in a short-term muscle remodeling evaluation.

POSTER SESSION 2

Friday 11th May
10:45 – 11:10

P2.1
IPL in dermatology: state of the art
Philipp Babilas
Department of Dermatology, University Hospital Regensburg, Regensburg, Germany

Intense pulsed light (IPL) devices use flashlamps and bandpass filters to emit polychromatic incoherent high-intensity pulsed light of determined wavelength spectrum, fluence, and pulse duration. Similar to lasers, the basic principle of IPL devices is a more or less selective thermal damage of the target. The combination of prescribed wavelengths, fluences, pulse durations, and pulse intervals facilitates the treatment of a wide spectrum of skin conditions. Hereby, numerous trials show the effectiveness and compatibility of IPL devices. The oral presentation will summarize the physics of IPL and provide guidance for the practical use of IPL devices. Additionally, the presentation will discusses the current literature on IPL with regard to the treatment of unwanted hair growth, vascular lesions, pigmented lesions, acne vulgaris, and photodamaged skin and as a light source for PDT and skin rejuvenation.

P2.2
Intense Pulsed Light as a Solution for treatment of cervical Hypertrichosis after correction of Pterygium Colli
Joana Costa[1], Rita Valença-Filipe[1], Isabel Bartosch[1], António Bessa Monteiro[1], Jorge Rodrigues[1,2], Álvaro Silva[1]
[1]Centro Hospitalar São João, Porto, Portugal, [2]Universidade Fernando Pessoa, Porto, Portugal

Intense Pulsed Light (IPL) is an FDA-approved phototherapy for the treatment of a variety of conditions such as hypertrichosis. It utilizes the principle of selective photothermolysis wich allows a specific wavelength to be delivered to a chromophore of a designated tissue while leaving the surrounding tissue unaffected.

The authors present the case of cervical hypertrichosis after surgical correction of Pterygium Colli in a 14 year-old girl. The patient was submitted to 8 IPL treatment sessions with dosages between 5 and 10 J/cm^2. An important reduction of the amount of hair was achieved, with the remaining hair becoming thinner and lighter.

The case presented shows the good results that can be achieved with IPL laser therapy for hair removal, corroborating its effectiveness and widespread applicability all over the world. In the teenage group, the improvement of the overall appearance has a great psychological impact, whereby is it important to think of this treatment as an option in the non-adult population.

P2.3
Intense Pulsed Light - is it an effective treatment for Melkersson- Rosenthal Syndrome orofacial edema?
Rita Valença-Filipe[1], Joana Costa[1], Isabel Bartosch[1], Jorge Rodrigues[1,2], Álvaro Silva[1]
[1]Centro Hospitalar São João, Porto, Portugal, [2]Universidade Fernando Pessoa, Porto, Portugal

Melkersson-Rosenthal syndrome (MRS) is an uncommon, complex neuromucocutaneous disorder characterized by recurrent orofacial edema, facial palsy and fissured tongue. Its cause is unknown, but there may be a genetic predisposition. In recent years, novel therapeutic approaches involving oral clofazimine, corticotherapy or laser beam acupuncture have proven to be successful in some cases. To date, there is no data about Intense Pulsed Light (IPL) utilization of orofacial edema treatment.The aim of this case was to raise questions about physiopathology and possible phototherapy applicationin selected patients.

The authors present a 19 year-old female with MRS marked orofacial edema and mucosal contractile lip scars due to prior lip reduction surgery. She underwent 3 IPL sessions. Improvement of scar appearance and lip mobility were obtained with no edema reduction. Topical injectable triamcinolone (two sessions) was then tried in both lips, with good functional and aesthetic results.

Orofacial edema in MRS is a challenge to treat, due to its unknown physiopathology and few treatment options. Despiteno response to IPL treatment, and according to its inflammatory nature and response to corticotherapy, it is expected that phototherapy can play a role in the treatment. Further studies have to be performed to answer these questions.

P2.4
Revisión estadistica de 5 Años en Pacientes que acuden a una consulta de Rejuvenecimieto Facial en Caracas.Venezuela / Statstical review of Facial Rejuvenation over 5 Yeards of Patiets Consulting in Caracus, Venezuela
Guillermo Aldana
Aldana Laser Center, Caracas, DC, Venezuela

El presente trabajo se planificó con el objetivo de estudiar el grupo etario, el sexo, el fototipo cutaneo, la procedencia geografica, los motivos de consulta mas frecuentes y el número total de pacientes que una vez evaluados iniciaron y completaron su tratamiento, ademas incluyo una vision general de el grado de satisfación alcanzado por ellos tras el tratamiento y en base a esto cuales fueron la combinaciones de laser que mejor actuaron en los diferentes grupos etarios estudiados. El estudio contemplo la revisión detallada, toma de datos antropometrícos, elementos relevantes de la historia clínica y desarrollo estadistico para pacientes que consultaron en la Clinica Aldana Laser Center para rejuvenecimiento facial en las fechas comprendidas entre 2007 y 2011, todos los pacientes del presente estudio como condición implicita debieron ser evaluados con la herramienta ®Visia Complexion Analysis de Canfield Scientific Inc. Los pacientes que habian empleado otro metodo de analisis fueron excluidos del presente trabajo, se usaran para el analisis de los datos demograficos y estadisticos

las variables tradicionales de porcentaje, media, mediana y desviación estandar. Para el momento de presentar este proyecto a su honorable institución nos encontramos en la fase de analisis estadistico por ello no nos es posible presentarles resultados preliminares, ademas el alto numero de la muestra y la gran cantidad de variables a analizar no nos permitio la obtención de estos datos para este momento, que si estarán completado para el momento de la presentación.

P2.5

COSMETIC TREATMENT OF SKIN PHOTODAMAGE WITH IPL AND LASER TREATMENT

Lazaro Perez
LÀSER MÈDIC GELIDA, C/ Enric Prat de la Riba, 43 - Gelida, Barcelona, Spain

Objective: The purpose of this study is to evaluate the effectiveness and safety of programmable IPL at three different wave lenghts given by three cut off filters of 520, 560 nm, 580 nm with its respective pulse width and volumetric heat in combinations with 1064 nm Nd YAG laser system in microseconds pulse mode in the treatment of pigmentary and diffuse vascular lesions, stimulating the elastocolagenesis, in order to improve the skin photodamage.

Material and Method: A total of 82 patients have been treated. 5 men and 77 women with age between 24 and 81 years old and I-IV Fitzpatrick skin photo-type, who presented various types of benign pigmented and diffuse vascular lesions on the skin. We used an IPL device with cooled sapphire window of 10x30 cm and wavelength range of 520-1100 nm at three cut off filters of 520, 560 and 580 nm and their respective pulse width of 2-12, 12-30, and 30-60 ms. The fluence range used was 12-27 J/ cm^2. We combine the use of Nd: YAG1064 nm laser system in microsecond mode to complement the therapeutic effects of IPL. The number of sessions applied for a completed treatment depended on skin photodamage and pacients respond, and they were from two to six with an interval of 1 months apart.

Results: There was an improvement of skin photodamage or photoaging in all cases with elimination or significant reduction of pigmented lesions, diffuse redness and the improvement in skin texture with reduction of elastosis.

P2.6

Granuloma faciale presenting as rhinophyma- response to carbon dioxide laser

Sweta Rai, Vishal Madan
The Laser Division, Salford Royal NHS Foundation Trust, Manchester, UK

A 61 year old man presented with a 9 year history of biopsy proven and medical therapy resistant granuloma faciale on the nose. This had increased in size and simulated a moderate rhinophyma. Treatment with carbon dioxide laser (CO_2) has been effective in improving the nasal profile.
The CO_2 laser resurfacing was performed using the Sharplan Silk Touch® scanner; at 4-7mm spot at 20-40 W. Complete resolution of the granuloma faciale like rhinophyma was noted at a 6 week review.
This case illustrates that CO_2 laser may be an effective treatment option for granuloma faciale[1]. Long term follow up is however required to assess for disease recurrence.
Reference:
1. Madan V. Recurrent granuloma faciale successfully treated with the carbon dioxide laser. *J Cutan Aesthet Surg.* 2011;**4**:156-7.

P2.7

Case Report of a Patient with Urticaria Pigmentosa Treated with the Q-Switch Nd:YAG Laser

Huai Shen Phen, Barry Monk
Laser Therapy Unit Bedford Hospital, Bedford, UK

We present a 42 year old lady with urticaria pigmentosa treated with the Long Pulsed Q-Switch Nd:YAG Laser. The diagnosis was confirmed by histology and a raised serum tryptase level. Treatment was carried out with the Long Pulsed Q-Switch Nd:YAG Laser at 532nm to a test patch on the right anterior leg. This showed dramatic improvement in both the appearance of the lesions and the symptoms. We have proceeded to carry out further successful treatments to both legs and the anterior chest. In a condition notorious for its difficulty in treating it is clear that in this particular case, this treatment modality is able to produce excellent cosmetic and symptomatic results. As a result we have proceeded to use it on similar patients with good effect.

P2.8

FOTOMEDICINA Y LÁSER MÉDICO-QUIRÚRGICO: ¿ESPECIALIDAD MÉDICA? Photomedicine and Medical Surgical Lasers ' A Medical Speciality'

Pedro A. Martínez-Carpio[1], Mario A. Trelles[2]
[1]IMC-Investiláser, Sabadell. Barcelona, Spain, [2]Instituto Médico Vilafortuny, Cambrils. Tarragona, Spain

El dominio de la fotomedicina como especialidad incluye, como mínimo, una formación dirigida hacia el estudio de las bases físicas del espectro electromagnético, de la luz y el láser, los aspectos tecnológicos relacionados con los diferentes sistemas emisores, los cambios químico-biológicos a que acontecen a nivel celular, hístico y orgánico, y muy especialmente las principales aplicaciones diagnósticas y terapéuticas que van apareciendo en las varias especialidades médicas tradicionales.

Un editorial de la prestigiosa revista *Nature* dice que una especialidad científica es relevante cuando produce un número importante de artículos en la literatura, cuando sostiene nuevos y destacados negocios, cuando genera estereotipos en la imaginación pública, cuando disfruta de suficiente flujo de dinero para la investigación y para becas y, sobretodo, cuando existe un número importante de expertos y practicantes unidos con una misma visión de la especialidad Si atendemos a estos requisitos no cabe duda de que lo que se ha dado a llamar fotónica médica, fotomedicina o láser médico-quirúrgico es, cuanto menos, una práctica científica relevante. Aquí argumentamos que, con un nombre todavía no bien establecido, debería surgir en este sentido también una nueva especialidad médica.

P2.9

EL CORPORATIVISMO MÉDICO EN LA PRÁCTICA DEL LÁSER MÉDICO-QUIRÚRGICO / Medical Corporatism in the Use of Medical Surgical Lasers

Pedro A. Martínez-Carpio[1], Mario A. Trelles[1,2]
[1]IMC-Investiláser, Sabadell. Barcelona, Spain, [2]Instituto Médico Vilafortuny, Cambrils, Tarragona, Spain

El corporativismo profesional es imprescindible en el óptimo desarrollo práctico de todas las profesiones. Aunque en ocasiones sea criticado y menospreciado por diversos sectores de la sociedad ajenos a la profesión, en la práctica médica - y particularmente en la práctica del láser- este corporativismo resulta necesario. Debido a las particularidades de los facultativos que ejercen una medicina, generalmente privada, donde a veces cuesta sintonizar la ética profesional con los intereses particulares, la cooperación interprofesional es enriquecedora en pos de un ejercicio actualizado y competente. En este sentido es importante resaltar las normas de ética médica que deben regir para todos los facultativos que practican intervenciones con el láser, aunque puedan resultar polémicas para profesionales que desconocen las ventajas de las aplicaciones y técnicas prácticas. Esta comunicación se centra en estos aspectos tomando como referencia algunas de las normas de ética médica que fueron aprobadas en 1997 por el Consejo de Colegios de Médicos de Cataluña y que en estos momentos continúan plenamente vigentes.

P2.10

DEONTOLOGICAL ASPECTS IN LASER APPLICATIONS IN MEDICINE AND SURGERY

Pedro A. Martínez-Carpio[1], Mario A. Trelles[2]
[1]IMC-Investiláser, Sabadell. Barcelona, Spain, [2]Instituto Médico Vilafortuny, Cambrils. Tarragona, Spain

To a great extent the general public assumes that laser interventions are fast, safe, complication free, efficacious and give excellent results. Expectations of patients who undergo laser interventions are usually non-realistic regarding the final outcome. Laser treatments are also frequently subjected to speculation based on treatments carried out on famous or public persons. The professional prestige of Doctors who treat these individuals can be threatened if they risk talking too much. Therefore we believe it is important to take into account several deontological considerations related to the practice with lasers, which are specified in the present communication. Such considerations are according to the Deontologic Codes of the Official School of Physicians of Catalonia (Spain) and are, to our knowledge, applicable to the practice of laser and photonics by Doctors.

P2.11

Tensado Vaginal láser y Gratificación Sexual/ Laser Assisted Vaginal Tightening and Sexual Gratification

Víctor García Martínez, Víctor Ollarves, Edwin González, Sofia Herrera, Andres Lemmo, Zulybeth Rodríguez
Unidad Médico Estética Láser (UNIMEL), SKINTIMA, Caracas, Venezuela

El tensado vaginal láser, es un procedimiento médico de consultorio, que utiliza el efecto térmico de la luz para aumentar y contraer las fibras de colágeno en la submucosa, disminuyendo así el diámetro vaginal, lo cual resulta en un efecto tensor. Esto es eufemísticamente denominado rejuvenecimiento vaginal (sin cirugía), y está relacionado con la mejoría de la gratificación sexual. Se realiza con el láser de Erbio (Er:YAG, Fotona ®, infrarrojo, 2940 nm, modo Smooth y fraccionado), en sesiones de 20 minutos aproximadamente. Se presenta una serie de 29 pacientes (29 a 52 años de edad) tratadas entre Octubre 2011 y Enero 2012, en las que se evaluó el índice de función sexual femenina (IFSF) antes y después del procedimiento. A 16 (55,17%) pacientes se les realizó una segunda sesión a los 21 días. El motivo de consulta fue relajación vaginal y/o insatisfacción con las relaciones sexuales en el 100% de los casos. Se recogió el antecedente de incontinencia urinaria de esfuerzo en 3 casos. Se evidenció mejoría subjetiva de la paciente en 96,55% (28/29) de los casos, y mejoría del IFSF con diferencia estadísticamente significativa $p < 0,05$ en los parámetros lubricación y satisfacción del índice, de mayor relevancia en los casos de segunda sesión de tensado a los 21 días. No se registró ninguna complicación o efecto colateral no deseado. Anecdóticamente se registró la mejoría de la incontinencia urinaria de las pacientes, lo que impulsó a desarrollar una futura investigación acerca de los efectos del Er:YAG en torno a esta patología.

Palabras clave: tensado vaginal láser, gratificación sexual, índice de función sexual femenina.

P2.12

Is it possible to relief back pain immediately after the first session of laser acupuncture therapy?

Dhiya Houssien, Asmaa Houssien
Dr Dhiya Centre for Rheumatism, Jeddah, Saudi Arabia

BACKGROUND AND OBJECTIVES: Low-level Laser acupuncture therapy (LLLT) is defined as the stimulation of acupuncture points with low-intensity, laser irradiation and is widely used in treating musculoskeletal pain. A saying of Prophet Mohammad (Peace be upon Him) "He whoever visits a sick person and says upon him: "I ask Allah the Grand, the Lord of the Magnificent Throne to cure your illness" (7times). So therefore, God will restore him to health. The purpose of this study was to determine whether the use of this prayer during LLLT acupuncture during a single session of Chronic Low Back Pain (CLBP) treatment would result in better outcome than laser acupuncture alone

PATIENTS AND METHODS: 40 patients with CLBP were randomly assigned to two treatment groups: G1 (laser alone; 20 patients) and G2 (prayers* and laser; 20 patients). No patients realized the therapist's recitation of prayer **"I ask Allah the Grand, the Lord of the Magnificent Throne to cure your illness" (7 times)** for each point**.** All patients received a single session laser-acupuncture treatment with a 20Hz 200mW 820 nm Gallium Aluminium Arsenide diode laser. Pain intensity was assessed on a 100mm visual analogue scale (VAS). The lumbar range of motion was measured by fingertip-to-floor method. A physiotherapist, who was blinded to treatment assignment, evaluated the patients immediately before and after treatment as well as 4, 12 and 24 weeks later.

RESULTS: Immediately after the completion of treatment, the mean VAS dropped from 78 to 66 mm in the laser alone group **(**G1) but increased at the follow up visits to 76 mm after 24 weeks. In contrast, VAS scores decreased from 80 to 48 mm in the laser with prayers group. Although it increased in the follow up visits 60 mm after 24 weeks, it remained significantly better (24 mm $P<0.0001$) than at the initial assessment. The mean of fingertips and floor distance decreased significantly in G2 from 41 cm to 15 cm immediately after the completion of the first session (the difference from baseline was 26 cm) compared to a decrease from 44 to 35 after the first session in G1. Forward flexion of the lumbar spine improvement remained stable between the first assessment and the other four assessments in patients exposed to prayers with the difference between the baseline and 24-week assessments highly significant ($P<0.0001$) compared to G1 ($P>0.05$).

Conclusion: The addition of silent prayers to one session of laser acupuncture resulted in a significant improvement in functional and symptomatic outcomes in this group of patients with CLBP even after 24 weeks follow up.

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