JOINT EVENT

5th International Conference on

Advances in Skin, Wound Care and Tissue Science

&

14th International Conference on

Clinical Dermatology

October 15-16, 2018 | Rome, Italy

Keynote Forum

Day 1

Steven Jeffery, Clin Pediatr Dermatol 2018, Volume 4
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Steven Jeffery

Queen Elizabeth Hospital, UK

Two years with MolecuLight i: X – two years of better patient outcomes

Statement of the Problem: Damage to skin and soft tissue allows opportunistic pathogens to complicate and impede the normal course of wound healing and skin repair1. The diagnosis of microbial infection in a wound, based on common clinical signs and symptoms is difficult, as there is no gold standard to predict bacterial activity in tissue and bacteria are invisible to the unaided eye. Furthermore, application of gold standard therapies such as debridement to remove bacterial load and selection of appropriate dressing to minimize further burden are currently sub-optimal. Fluorescence imaging has recently been used to visualize clinically significant levels of pathogenic bacteria in real-time at the bedside using a non-contact hand held device.

Methodology & Theoretical Orientation: Over the course of two years we have assessed the effectiveness of this device in the detection and management of bacterial load in patients with resulting from military combat, traumatic burns, and amputations.

Findings: 1 - Bacteria is heterogeneously distributed across a wound, leading to suboptimal swabbing according to clinical signs and symptoms. 2 - Early diagnosis of high bacterial burden allows for appropriate treatment to begin immediately. 3 - Most wounds do not contain large numbers of bacteria, meaning that antimicrobial dressings are being over used.

Conclusion & Significance: Bacterial fluorescence imaging informs clinical decisions with immediate information on bacterial presence or absence, identification of the type of bacteria to be treated (specific detection of P. aeruginosa), visualizing the location of bacterial presence for more accurate swabbing, targeting areas for debridement and re-debridement, antimicrobial and antibiotic decision making, and monitoring of treatment effectiveness. This tool has significant implications for improving overall wound healing, as early detection and intervention of bacterial presence could prevent bacterial levels from reaching critical colonization, infection, and sepsis.

Biography

Jeffery is a Consultant Burns and Plastic Surgeon at the Royal Centre for Defence Medicine in Birmingham, and is Professor of Wound Study at Birmingham City University He joined the Royal Army Medical Corps as a medical student in 1986. He qualified from the Universities of St Andrews and Manchester in 1989, and served as a Medical Officer with the Argyll and Sutherland Highlanders before completing his basic surgical training, becoming a Fellow of the Royal College of Surgeons of Edinburgh and of Glasgow. He developed an interest in burns and other soft tissue injuries, and soon realised that the best way to pursue this interest would be via plastic surgery. He completed his plastic surgical training in East Grinstead, Newcastle and Perth. He is a Patron of the Restoration of Appearance and Function Trust Charity, and has been awarded Fellowship of the Royal College of Surgeons of England ad eundum. He is an expert adviser to NICE Medical Technologies Evaluation Programme. In 2011 he co-founded the Woundcare 4 Heroes charity, which is already making a big difference to the wound care of both serving and veteran personnel.

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Ryan Moseley

Cardiff University, UK

Development of epoxy-tigliane pharmaceuticals as novel therapeutics for dermal fibrosis

Excessive dermal scarring/fibrosis poses major challenges to Healthcare Services worldwide, confounded by existing therapies being unsatisfactory at treating fibrosis. Therefore, there is significant need for novel anti-fibrotic therapies with improved efficacy. We are evaluating the novel healing properties of epoxy-tiglianes (EBC-46, EBC-211), isolated from the Fontain's Blushwood Tree indigenous to Queensland's tropical rainforest. EBC-46 possesses potent anti-cancer properties and stimulates exceptional healing following tumour destruction, manifested as accelerated wound re-epithelialisation, closure and minimal scarring. To elucidate their anti-scarring properties, we assessed epoxy-tigliane effects on fibroblast proliferation, migration; and transforming growth factor-β1 (TGF-β1)-driven myofibroblast differentiation/behaviour. Dermal fibroblasts were treated with EBC-46 or EBC-211 (0-10μg/ml). Cell cycle progression/proliferation were assessed by Flow Cytometry and MTT assay. Migration was assessed using in vitro scratch wounds/Time-Lapse Microscopy. TGF-β1-driven, fibroblast-myofibroblast differentiation was examined by immuno-cytochemical/QRT-PCR detection of α-smooth muscle actin (α-SMA) expression/stress fibre formation. Epoxy-tigliane-induced gene expression changes were quantified by Microarrays, confirmed by protein level analyses. Both epoxy-tiglianes significantly retarded fibroblast proliferation, although neither affected migration. Although α-SMA expression/stress fibre organization and myofibroblast formation were unaffected at 0.001-0.01μg/ml or 1-10μg/ml EBC-46, EBC-46 significantly inhibited α-SMA expression/stress fibre formation at 0.1μg/ml, with cells retaining normal fibroblast morphologies. EBC-211 induced similar effects at 10μg/ml. Epoxy-tiglianes up-regulated proteinase, anti-fibrotic matrix component and TGF-β1 inhibitor genes; and down-regulated proteinase inhibitors, pro-fibrotic matrix component and TGF-β1 signalling genes. Epoxy-tiglianes also increased high molecular weight hyaluronan synthesis. Therefore, epoxy-tiglianes modulate fibroblast proliferation, differentiation and matrix composition/turnover, inducing scar resolution. Findings support epoxy-tigliane development as novel anti-fibrotic therapeutics against dermal scarring/fibrosis.

Biography

Ryan Moseley graduated from Swansea University with a BSc (Honours) Degree in Biochemistry. Later, he obtained his PhD from the School of Dentistry, University of Wales College of Medicine, examining the role of oxidative stress in periodontal disease. He continues his research at Cardiff University, where he is currently a Reader in Tissue Repair and Director of the CITER MSc Programme in Tissue Engineering. He research focuses on the mechanisms underlying dermal and oral wound healing during health and disease; and the development of stem cell, biomaterial and pharmaceutical based strategies to address impaired healing in these tissues. He has been supported by funding bodies worldwide, including the MRC, NHMRC and Wellcome Trust, culminating in numerous published papers, filed patents with industrial partners in the dermal wound healing sector (Convatec, Systagenix Wound Management, Peplin/LEO Pharma, QBiotics); and many conference prizes.

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Notes:

Regina Folster-Holst, Clin Pediatr Dermatol 2018, Volume 4
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Regina Folster-Holst

University Medical Center Schleswig-Holstein, Germany

Epidermal barrier structure and function in atopic dermatitis and ichthyosis

The clinical phenotype of atopic dermatitis (AD) results from complex interactions between genetic and environmental factors, which influence the epidermal structure and function, as well as the immune system. In addition, neurogenic disturbances and loss of the diversity of microbiome (intestinal and cutaneous) are causes of exacerbation. Epidermal barrier defects seem to be a hallmark of pathogenesis of AD. The quality of the skin barrier can be assessed by using a new semi-quantitative method to measure intercellular lipid lamellae. This procedure was used to evaluate the influence of emollients and also the topical application of drugs like corticosteroid and calcineurin inhibitors.

Biography

Regina Folster-Holst completed her PhD in 1984 from Christian-Albrechts-University, Kiel, Germany. After a Medical Assistant time in a children's clinic for Cystic Fibrosis and Allergy at Amrum, Germany, she began her specialist training for dermatologists at the Department of Dermatology, Kiel, Germany, in November 1985. In 1992, she was recognized as a Specialist in Dermatology and Allergology. Her habilitation was in 2003, at the Medical Faculty of the Christian-Albrechts-University of Kiel and the appointment as a Professor took place in 2007. Since 1992, she works as a Senior Physician at the University Medical Center Schleswig-Holstein, Department of Dermatology in Kiel, Germany. Clinical activity and research are priority for her, primarily in the area of Atopic Dermatitis, Pediatric Dermatology, Exanthems in Childhood and Parasitosis.

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Marissa J. Carter

Strategic Solutions, Inc, USA

How are we going to pay for advanced therapeutics in wound care?

The clinical phenotype of atopic dermatitis (AD) results from complex interactions between genetic and environmental Although wound care is not a recognized specialty, the cost of treating wounds, especially chronic wounds, is phenomenal. Most wound care products categorized by the FDA as devices have been approved as adjunctive treatments based on the concept that these products may accelerate wound healing directly or indirectly. Many new products such as CTPs (cellular and/or tissue-based products) are expensive, and may need to have several applications. At the same time, in the USA the Centers for Medicare and Medicaid are exerting pressure in regard to reimbursement amounts for these products. Current reimbursement amounts for the application of some products may not be sufficient to keep a dedicated wound care clinic profitable when half of all patients are on Medicare or Medicaid and a further 10-15% have no medical insurance. Indeed, some patients may not receive any such products due to poor or no medical insurance. The majority of device clinical trials are post-market because of 510(k) approval and are frequently limited to non-severe wounds in indication (although many patients may have serious comorbidities). Thus, and most important, the performance of many products used to treat more severe wounds is unknown due to a scarcity of randomized controlled trials. Payers are also fixated on "episodes of care," which is hard to define when half of all patients have multiple wounds that overlap over long periods of time (many years). Part of this chaos has resulted from lack of will at the national level to officially use health economic studies to weed out cost-inefficient products, and lack of understanding of health economics by payers. The situation will only get better when trials involving more severe wounds are commonplace, we have more FDA–approved endpoints appropriate for some products, and we are willing to formally include health economic analyses in our decision-making.

Biography

Marissa Carter is the President of Strategic Solutions, Inc., and has an extremely broad science background, which includes work in several medical fields, as well as physical and engineering disciplines. Her expertise includes health economics modeling, evidence-based medicine, biostatistics, and clinical trial design and analysis. Although she works mostly in wound care research, she has also worked in epidemiology, ophthalmology, orthopedics, neurology, and psychology. She holds an MA in biochemistry from Oxford University and a PhD in chemistry from Brandeis University. She is the author or coauthor of over 100 peer-reviewed articles and book chapters in medicine and her studies have won several awards.

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Day 2

John Edward Greenwood, Clin Pediatr Dermatol 2018, Volume 4
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John Edward Greenwood

Royal Adelaide Hospital, Australia

NovoSorb biodegradable temporising matrix (BTM) - Use in significant burns

Introduction: The NovoSorb BTM is a completely synthetic bilayer material comprising a dermal component (2mm thick biodegradable polyurethane foam) bonded to a pseudoepidermis of non-biodegradable polyurethane film. Its primary function is to 'temporise' wounds, buying time for a definitive closure option to become available. Since the dermal foam becomes integrated and creates a neodermis, it is an 'active' temporiser, improving the wound bed for definitive closure.

Methods: To date, 18 patients with significant burns have been treated with BTM. Since the first, salient lessons regarding the application (contouring, cutting and fixing), dressing, monitoring, and timing of delamination and grafting have presented themselves. , The initial 5 patients were part of a pilot trial, the following two (involved in the Pinery Bushfire Disaster) and the subsequent 11 have been permitted by the Therapeutic Goods Administration (TGA) either under Special Access or Authorised Prescriber Schemes. In all cases a photographic (and sometimes video) record has been taken at every procedure and review and several cases will be discussed.

Results/Conclusions: The matrix integrated completely in almost all cases and graft take over integrated BTM was uniformly excellent. Several episodes of localized infection were treated by local manoeuvres, dressings and systemic antibiotics without removal or loss of the BTM. Some BTM required removal and replacement. The split skin grafts applied over integrated BTM varied from sheet graft to 1:3 mesh. Graft loss was rare and in all cases, mesh pattern faded, becoming invisible in some by 12 months. Functional and cosmetic outcomes (measured by POSAS and MAPS) have been significantly better than historical cases. Reconstruction within BTM areas has been limited to web space releases and simple flap release of unusual contracture bands. BTM is now our treatment of choice and has led to a recent paradigm shift in burn care at our institution.

Biography

John Greenwood AM is an English-trained plastic surgeon who graduated from the University of Manchester in 1989 and now working full-time in burn care as the Medical Director of the Adult Burn Centre of the Royal Adelaide Hospital in Adelaide, South Australia. He has been developing skin replacement products, utilizing the NovoSorb biodegradable polyurethane platform, since 2004. He was appointed Member of the Order of Australia (AM) following his work leading Australia's only Burns Assessment Team after the carnage of the 2002 Bali Bombings which killed 202 civilians. He was the 2016 South Australian of the Year.

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Vincent Maida, Clin Pediatr Dermatol 2018, Volume 4
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Vincent Maida

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Topical medical cannabis: A new epigenetic paradigm for wound management

Statement of the Problem: The endocannabinoid system is ubiquitous throughout the human body and has recently been found to have a significant representation throughout the integumentary system, both cutaneous membranes and mucous membranes. Topical Medical Cannabis (TMC) based medicines are intrinsically lipophilic and contain both delta-9-tetrahydrocannabinol (THC) and Cannabidiol (CBD) in varying proportions. Given that wound beds are largely lipophilic absorption of lipophilic agents, such as cannabinoids, is enhanced.

Methodology & Theoretical Orientation: A series of n=1 trials were initiated on a cohort of stalled recalcitrant wounds, composed of cases of greater than 12 months duration, were treated with TMC based medicines. All cases were previously afforded with all available Evidence-Based treatments that conformed with local best practices and wound-bed preparation principles. Ten cases were studies for wound analgesia, 10 cases for wound healing, and 4 cases for disease modulation. Etiologies represented within the cohort under study included: Pyoderma Gangrenosum, Leukocytoclastic Vasculitis, Cryoglobulinemia, Antiphospholipid syndrome, Sickle Cell Disease, Lichen Simplex Chronicus, Bowen's Disease, and Squamous Cell Cancer. Clinically significant analgesia, wound healing, and disease was noted in all cases. The TMC medicines were applied directly applied to wound beds. TMC was very well tolerated and no adverse reactions were observed.

Conclusion & Significance: The highly positive results observed in a cohort of the most challenging recalcitrant cases provokes realistic interpolation that TMC based Medicines may be effective for a broader context within Wound Management. The endocannabinoid system is a viable Epigenetic target and platform for exploring therapeutic options for skin and wound conditions. Therapies based on Topical Medical Cannabis that interact at the level of the endocannabinoid system have significant potential to improve the 3 main target outcomes in wound management, namely, wound analgesia, wound healing, and disease modulation that includes antineoplastic actions.

Biography

Vincent Maida is a consultant in Palliative Medicine & Wound Management at the William Osler Health System in Toronto. He obtained his medical degree from the University of Toronto. He was promoted to Associate Professor at the University of Toronto in 2011. Maida completed his MSc in Wound Management in 2010, his Medical Teachers Certificate in 2011, and his certificate in Patient Safety and Quality Improvement in 2014, all at the University of Toronto. Maida is an active researcher with particular interests in pain and symptom management, wound management, prognosis, and medical education. Over the past 10 years, he has published 4 textbook chapters, over 30 original research papers, created numerous original conceptual innovations in Palliative Medicine and Wound Management, as well as delivering over 100 national and international presentations on 5 continents, 14 countries, and over 50 cities.

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Milton D Moore, Clin Pediatr Dermatol 2018, Volume 4
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Milton D Moore

Moore Unique Skin Care, USA

Obsolete shaving technology and problems it presents in the shaved patient

Removing unwanted body hair has been a part of human hygiene since the dawn of history. Over the centuries this practice has served to denote everything from high-ranking social status to acts of contrition. As the tradition of shaving evolved in step with global culture, so too have the tools of the trade. It was in the 18th century that razors became more than sharp, exposed slabs of metal. As a dermatologist and pharmacist, the author has researched the evolving changes and challenges of the shaving process. The lubricated bar was added to the razor in 1976. The blade and bar design is defective because the blade is passed over the skin and hair first before the bar even touches the hair or skin. The first pass is the hardest part of the shave. Moreover, the blade material used to make the razor often becomes dull after the first shave due to moisture on the edge of the blade which leads to oxidation and compromised metal integrity. Further, there are patients with inherent skin and facial hair problems such as coarse and/or wiry hair that become ingrown as the hair grows. This is typically seen in African American men because their hair follicles are oval/elliptical and causes the hair to grow in the shape of a spiral nature. The size of the Caucasian hair shaft is less prone to become ingrown hairs but is more of a factor with men of Jewish descent. Coarse or wiry hair is more typical for men of Irish or Scottish descent; therefore, skin problems are more prevalent within this segment of the Caucasian community. There is also a common issue of the angle in which hair exits, the skin in men of all the aforementioned descents. Finally, razor burn, and razor rash are the most consistent and largest problem as a result of poor blade integrity for the general population. Given the aforementioned problems, the author has researched and patented razor and shaving products that address these deficiencies.

Biography

Milton D Moore—MD—has been working with patients to provide the best dermatological care throughout the Houston area. In 1985, he opened Moore Unique Dermatology and Spa with the goal of helping each patient maintain healthy and beautiful skin. He has invented and received six patents for various products such as The Moore Technique Shaving Tool for treatment of PFB, 1987; The Moore Technique Shaving system has received the only patent for treatment of PFB, 1990. He's also patented and developed The Moore Unique Hydroglide Shave Solution and Body Moisturizer for treatment of PFB and moisturizing skin, 1995. Finally, he has developed and marketed a full line of 12 skin care products under Moore Unique Skin Care, L.C. and developed and patented the world's first nine blade razor in April 2013. He is a Pharmacist and Dermatologist with Membership in the American Academy of Dermatology, American Medical Association, American Society of Dermatologic Surgery and National Medical Association. He has been in private practice in Houston since 1985. He is also a Member of the Who's Who in American Inventors since 1989. He received the prestigious National Top Doctor Award in December of 2017

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