

Poster 1

A SPLIT-FACE RANDOMIZED CONTROLLED TRIAL TO ASSESS THE EFFICACY OF LOW LEVEL RED LIGHT THERAPY FOR PIGMENTARY DISORDERS.

Tashmeeta Ahad^{1,2}, Harvey Lui^{1,2,3}, Tim Lee^{1,2,4}, Jianhua Zhao^{1,2,3}, Haishan Zeng^{1,2,3}, Sunil Kalia^{1,2,4,5}.

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada.

²Photomedicine Institute, Vancouver Coastal Health Research Institute, Vancouver, Canada

³Imaging Unit - Department of Integrative Oncology, BC Cancer, Vancouver, Canada

⁴Department of Cancer Control Research, BC Cancer, Vancouver, Canada

⁵BC Children's Hospital Research Institute, Vancouver, Canada

Background: Pigmentary disorders such as melasma, lichen planus pigmentosus (LPP) and vitiligo can significantly affect patients' quality of life, especially because treatment responses are usually slow and typically have limited efficacy. In recent years, low level laser therapy (LLLT) has been an emerging treatment modality for androgenetic alopecia, acne, wound healing and photorejuvenation. The role of LLLT for pigmentary disorders has not been characterized.

Objectives: We aim to conduct a randomized split-face clinical trial assessing the efficacy of low level red light therapy for pigmentary disorders such as melasma, LPP, and vitiligo.

Methods: This will be a participant and evaluator blinded trial with random allocation of one side of the face to treatment and the contralateral side as control. A sample size of 15 patients per group for melasma, LPP, and vitiligo will be used. Patients will be treated twice a week for 12 weeks with low irradiation 655 nm LED red light. Primary outcome measures will include modified-MASI for melasma, DPASI for LPP, and VASI for vitiligo. Clinical photographs with color card control and colorimeter measurements will be taken at baseline, week 8 and week 12. Optical imaging with dermoscopy and fluorescence visualization will be used as a secondary objective to assess the role of cutaneous vasculature in the pathogenesis of these disorders. With this pilot study, we aim to evaluate LLLT with red light as a potential new and safe treatment option for pigmentary disorders.

Category: Pilot/exploratory experiments

Poster 2

***IN SITU* GENE EDITING FOR CORRECTION OF AUTOSOMAL RECESSIVE CONGENITAL ICHTHYOSIS (ARCI)**

Michael R. Copley¹, Wingfield Rehmus^{1,2}, Jan P. Dutz¹ and Sarah Hedtrich³

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada

²Division of Dermatology, Department of Pediatrics, University of British Columbia, Vancouver, Canada

³Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, Canada

Autosomal recessive congenital ichthyoses (ARCI) are a group of genetic diseases of the skin that encompass lamellar ichthyosis, congenital ichthyosiform erythroderma and harlequin ichthyosis. These diseases share several features including the early onset of “plate-like” skin thickening, cracking and severe barrier dysfunction leading to skin infections, overheating, electrolyte disturbances and rarely death. While supportive and medical management can improve the symptoms, cure has not been possible. Of the more than 10 different genes implicated in ARCI, the most common is *TGM1*. In most cases, these *TGM1* mutations are missense leading to a complete absence of transglutaminase 1 (TGase1). Recent studies predict improved barrier function in ARCI patients with restoration of only 10% of normal TGase1 levels. Thus, we hypothesize that restoration of at least partial transglutaminase 1 activity in ARCI patients may provide a therapeutically meaningful benefit. The Hedtrich lab has recently provided data in support of this hypothesis by showing that direct transepidermal delivery of wild-type TGase1 can correct the ARCI phenotype in an *in vitro* skin model. This provides a rationale for pursuing methods to permanently correct the ARCI phenotype by direct delivery of gene editing machinery (i.e. the CRISPR-Cas9 system) to permanently allow normal expression of at least one *TGM1* allele. If successful, this strategy could not only provide the basis for pre-clinical or clinical trials in ARCI patients, but also provide a proof-of-concept for a strategy that could be broadly applied to many other monogenic epidermal skin diseases.

Category: Pilot/exploratory experiments

Poster 3

CONTACT DERMATITIS CLINIC AT ST. PAUL'S HOSPITAL PATCH TEST RESULTS FROM 2016-2019

Lisa Flegel¹ and Gillian de Gannes^{1,2}

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada

²Division of Dermatology, St. Paul's Hospital, British Columbia, Vancouver, Canada

Patch testing is used to identify contact allergy. The Contact Dermatitis Clinic at St. Paul's Hospital tests patients from across western Canada (including British Columbia, Alberta, Saskatchewan and the Yukon) to the American Contact Dermatitis Society 80 allergen screening series and to additional allergens as indicated by the patient's exposure history. There is an initial reading of the results at 48 hours and a delayed reading 5 days later. The clinical relevance of results is interpreted by the dermatologist at the final reading. The results of patch testing are entered into a secure online database. This research documents the patch testing results from the opening of the clinic in November 2016 until April 2019. A total of 726 patients were patch tested. 508 patients (70%) had at least one positive result. 356 patients (49%) had a positive result only at the delayed reading. The 10 most frequent allergens with positive reactions (in decreasing order) were nickel sulfate, Fragrance mix I, cobalt chloride, *Myroxylon pereirae*, methylisothiazolinone, p-phenylenediamine, Fragrance mix II, formaldehyde, methylchloroisothiazolinone/methylisothiazolinone and colophony. These results show that without a delayed reading a significant portion of positive reactions would be missed. The 10 most frequent allergens seen in our clinic are comparable to the results of the North American Contact Dermatitis Group patch testing results from 2015-2016 (published in 2018). Patch testing is an important tool for the assessment of patients with suspected allergic contact dermatitis.

Category: Pilot/Exploratory Experiments

Poster 4

SKIN CANCER RISK PREDICTION MODEL DEVELOPMENT

Jenny Lee^{1,2}, Tashmeeta Ahad^{1,2}, Jianhua Zhao^{1,2,3}, Harvey Lui^{1,2,3}, Tim Lee^{1,2,5}, Haishan Zeng^{1,2,3}, Sunil Kalia^{1,2,4,5}.

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada.

²Photomedicine Institute, Vancouver Coastal Health Research Institute, Vancouver, Canada

³Imaging Unit - Department of Integrative Oncology, BC Cancer, Vancouver, Canada

⁴BC Children's Hospital Research Institute, Vancouver, Canada

⁵Department of Cancer Control Research, BC Cancer, Vancouver, Canada

Background: Risk factors have been established for skin cancer, but published skin cancer risk prediction models have limitations regarding study population, sample sizes, self-reported data, and response bias. Nevertheless, these models can be invaluable for increasing prevention and promoting early diagnosis of skin cancer, especially since skin cancer incidence and mortality rates continue to rise.

Objective: Our aim is to develop an improved model for predicting ultraviolet radiation related melanoma and keratinocyte carcinomas that improves on limitations in existing risk factor models. We hypothesize that the newly developed risk prediction model will perform well for skin cancer prediction. As well, we include an objective assessment that evaluates colorimetry as a risk factor.

Proposed Methods: The study cohort will consist of 1000 patients from February 2020 to January 2021 from the Skin Care Centre at Vancouver General Hospital. A survey will be administered to collect data on risk factors including but not limited to: age, sex, eye and hair colour, history of skin cancer, history of severe sunburns, tanning bed use, lifetime and current sun exposure, sunscreen use, sun-protective clothing use, Fitzpatrick skin type, skin colour (left arm, from colorimetry measurement), and number of nevi. This data will be used to develop a skin cancer prediction model through logistic regression, and model performance will be assessed by estimating calibration, discrimination, and accuracy. Calibration will be estimated using the Hosmer-Lemeshow test, discrimination will be assessed through the area under the receiver operating curve, and accuracy will be determined through sensitivity and specificity.

Category: Pilot/exploratory experiments

Poster 5

HOW MUCH TOPICAL SUBSTANCE IS REQUIRED TO COVER THE BODY? A LITERATURE REVIEW FOR THE GUIDANCE OF TOPICAL STEROID DOSING DURING ACUTE SKIN INFLAMMATION

David Jung, Neil Kitson

Department of Dermatology and Skin Science, University of British Columbia

Background: Topical steroids are common and invaluable necessary treatments for skin inflammation. Fear of side effects often results in under-treatment, particularly of acute inflammation. We believe there is little evidence-based guidance for patients and doctors, both for application and amount to dispense. We set out to review the literature for existing measurements on which to base revised guidance and possible new studies.

Objective: This review aims to scope the current state of knowledge on the quantity of topical substances required to cover the human body under real-life clinical conditions.

Methods: A literature review was performed on PubMed, EMBASE and Google Scholar. Studies were included if they investigated the quantity of topical substances required to cover all or parts of the body.

Results: 26 studies were included. While there are no studies on topical steroids, extrapolation from sunscreens and other applications revealed that a minimal application thickness of 20g/m² is needed to sufficiently cover a given anatomical site. Very few studies had participants apply sufficient topical substances to meet this threshold.

Conclusion: 30-60g of topical steroids may be required daily for one application to the entire body. For simple memory recall, we propose 0.5-1.0 g/kg body weight/application as a goal, but in the knowledge that the entire body surface rarely needs to be treated. In practice however, quantities of dispensed topical treatments are often far less than that required for the proposed length of treatment, even when smaller body surface areas are being treated.

Category: Early Experiments with well-defined objectives/hypotheses

Poster 6

SKIN CANCER DETECTION THROUGH DEEP LEARNING SPECKLE

Daniel C. Louie^{1,2,3,4}, Yuheng Wang^{1,2,3,4}, Lioudmilla Tchivaleva^{2,3}, Jiayue Cai⁵, Z. Jane Wang^{5,6}, Harvey Lui^{2,3,4}, Tim K. Lee^{1,2,3,4}

¹School of Biomedical Engineering, University of British Columbia

²Department of Dermatology and Skin Science, University of British Columbia

³Photomedicine Institute, Vancouver General Hospital

⁴Departments of Cancer Control Research and Integrative Oncology, BC Cancer

⁵Department of Electrical and Computer Engineering, University of British Columbia

⁶School of Information Science and Technology, Northwest University, Xi'an, China

Background and Objectives: When a laser illuminates the skin, the light is backscattered as speckle. This is a noise-like optical interference pattern with properties sensitive to differences in the morphology of the illuminated target, such as the differences between benign and cancerous skin lesions. But while simple to acquire, speckle patterns are difficult for the human eye to interpret and have relied on statistical analysis to enable diagnostic separation. Here we aim to improve diagnostic accuracy by employing deep learning to analyze speckle, towards the ongoing development of a rapid, accessible, skin cancer diagnostic tool.

Hypothesis: We hypothesize that speckle patterns, due to their visual homogeneity, are suitable for deep learning analysis. The classification features of speckle patterns could be extracted automatically using convolutional neural networks. The common issue of a large dataset for the deep learning approach could be resolved using a patch cropping augmentation technique.

Methods: Speckle patterns collected from 122 malignant and 196 benign lesions (Malignant: 37 melanoma, 30 squamous cell carcinoma, 11 actinic keratosis, 44 basal cell carcinoma. Benign: 91 melanocytic nevus, 105 seborrheic keratosis) were processed and analyzed through the ResNet-based deep learning framework in a binary diagnostic classification.

Results: The ResNet process achieved a diagnostic accuracy of 81.7 (1.0 stdev) in the separation of speckle patterns belonging to malignant and benign lesions. This finding exceeds the accuracy of the previous statistical method of 66.4 (3.2 stdev), achieving a sensitivity and specificity above that method's ROC curve.

Category: Early experiments with well-defined objectives/hypotheses

Poster 7

COSMETIC RESULT AND VIABILITY OF RIGHT ANGLE PARAMEDIAN INTERPOLATED FOREHEAD FLAPS (COVIRAFF)

Alexandre Laroche¹, David Zloty¹

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada

Paramedian forehead flaps (PMF) are interpolation flaps based on the supratrochlear artery. They are primarily used to repair nasal defects. Our study aims to retrospectively compare two different designs of PMF for cosmetic result and viability. Type 1 (classic) is vertically oriented from eyebrow to frontal hairline. Type 2 (modified) is designed with a 90-degree angle to avoid transposing hair from scalp to nose in patients with a short vertical height to their forehead.

The primary outcome is cosmetic result as assessed by an independent physician using 3 month post-operative pictures and a 100-point visual analog scale. The secondary outcome is photographic assessment of flap viability at 3 weeks post-operative measured by percentage degree of any necrosis compared to original defect size.

Primary and secondary outcomes will be compared between 51 retrospectively selected type 1, and 22 type 2 patients. Inclusion criteria were need for PMF repair, and presence of 3 week, and 3 month post-operative photographs.

Assessment of 20 patients has been completed at time of abstract submission. Type 1 VAS is 79 +/- 11. Type 2 VAS is 71.5 +/- 7. No necrosis was observed in either group.

Preliminary analysis documents equivalent VAS and necrosis scores between type 1 (vertical), and type 2 (90 degree angle) PMFs. Right angle PMFs appear to be a viable and cosmetically acceptable option for nasal repairs in patients who exhibit a short vertical forehead height.

Category: Early experiments with well-defined objectives/hypothesis

Poster 8

DERMATOLOGY-SPECIFIC DATA AUGMENTATION TECHNIQUES FOR IMPROVING DEEP LEARNING CLASSIFICATION OF SKIN CANCERS

Marie O'Connor¹, Scott Chin²

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada. ²Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, Canada.

Very recently, there has been an explosion of interest in applying Deep Learning, a subfield of machine learning and artificial intelligence (AI), to medical applications. Although these techniques are based on well known AI concepts that date back several decades, they have come to prominence due to a combination of increased access to data, the availability of low-cost/high-performance computing resources, and improved algorithms. The application of deep learning to dermatological problems is very new. Esteva et al.'s 2017 article in Nature demonstrated that these techniques are capable of classifying skin lesions with the accuracy of a dermatologist. The biggest barrier to developing a robust and accurate Deep Learning solution, however, is lack of data. Although dermoscopic image repositories, such as those developed by the International Skin Imaging Collaboration (ISIC) exist, the data set size is still considered small. To help overcome this problem, a common technique called Data Augmentation is used to create new data from existing data via a series of generic augmentations (such as by rotating, zooming, or flipping the image). Dermatology-specific data-augmentation techniques provide another avenue for increasing data set sizes for training Deep Learning systems. As far as we know from our ongoing literature survey, this is a novel technique. In this project, we propose several such data-augmentation techniques, and methods to evaluate their effectiveness. Improving Deep Learning systems in Dermatology has the potential to extend the reach of dermatologists outside of the clinic, and be useful for triage and rural access.

Category: Pilot/exploratory experiments (for study design, hypotheses creation, etc)

Poster 9

QUANTIFICATION OF ERYTHEMA ASSOCIATED WITH CONTINUOUS NYLON, IRRADIATED POLYGLACTIN-910, AND FAST ABSORBING GUT SUTURES IN FACIAL SURGERY REPAIR: A RANDOMIZED PROSPECTIVE STUDY

Ali MajidZadeh¹, Catherine Lim², David Zloty¹

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada.

²Faculty of Medicine, University of British Columbia, Vancouver, Canada

Patients are often concerned about the cosmetic appearance of scars following Moh's micrographic surgery (MMS), including residual erythema. However, few studies have quantitatively investigated the cosmetic outcomes of different suture material for closure of facial incisions in MMS. We have devised a randomized prospective study to compare how the intensity of erythema evolves over time in surgical scars resulting from continuous nylon, polyglactin-910, and fast absorbing gut sutures. After undergoing MMS, 105 patients were randomized into two groups. Depending on randomization, either the superior/medial or inferior/lateral half of the scar was sutured with nylon sutures, whereas the other half was closed with polyglactin-910 sutures. Another cohort of 105 patients was similarly randomized to receive polyglactin-910 and fast absorbing gut sutures. Post-operatively, subjects were assessed at one week, two months, and six months and close-up photographs were taken under comparable lighting parameters. Computer-assisted image-processing was utilized in all interval photographs to quantify the Erythema Intensity (EI) in each half of the scars. Paired t-tests demonstrated the average EI of nylon sutures to be greater than that of polyglactin-910 sutures by 25.4% ($P=0.0004$) and fast absorbing gut sutures by 19.2% ($P=0.005$) at one week. Average EI was comparable between the three materials at two and six months. Nylon sutures are associated with more intense facial scar erythema than polyglactin-910 and fast absorbing gut sutures during early scar maturation. Nevertheless, all three materials yield comparable cosmesis subjectively and quantitatively by six months and are equally favoured for facial surgery.

Category: Applied/functional experiment (in vivo study).

Poster 10

PRELIMINARY RESULTS FROM THE HIDRADENITIS SUPPURATIVA PATIENT EXPERIENCE (HSPE) SURVEY

Ilya Mukovozov¹, Jennifer Pereira², Rachael Manion³, Stephanie Carter³, Raed Alhusayen⁴
¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada. ²JRL Research & Consulting Inc., Mississauga, Canada. ³Canadian Skin Patient Alliance, Ottawa, Canada. ⁴Sunnybrook Research Institute, University of Toronto, Toronto, Canada.

INTRODUCTION: Hidradenitis suppurativa (HS) is a devastating skin condition, characterized by recurrent nodules and abscesses in skin folds, affecting up to 4% of the population. A comprehensive examination of the patient experience was undertaken for individuals with HS.

METHODS: In January 2020, we conducted an online survey of individuals with HS. To disseminate the survey, we engaged HS-related patient advocacy groups, physician groups, and social media groups. Survey questions included: time to diagnosis, number of healthcare encounters, disease-related costs, and impact on vocational and personal life. **RESULTS:** To date, 163 eligible respondents have completed the survey, of which 34 were Canadian. The majority of Canadian respondents (92.6%) were female and the mean age of diagnosis was 28.7 years (SD = 12.3, range 13-71). The average amount of time from symptom onset to diagnosis for Canadian respondents was 8.6 years (SD = 12.2, range = 2 months - 50 years). The majority of Canadian respondents (61.3%) were dissatisfied or extremely dissatisfied with their healthcare experience prior to diagnosis, but this number decreased to 41.9% once a diagnosis was made. Analysis of all 163 respondents showed that 84% had at least one misdiagnosis, of which boils and ingrown hairs were most common. Respondents struggled the most with managing symptoms, lack of awareness among physicians, as well as managing depression and anxiety. **CONCLUSIONS:** Our preliminary data highlight the psychosocial impacts of HS and the importance of timely diagnosis and greater awareness of this condition among primary healthcare providers.

Category: Pilot/exploratory experiments (for study design, hypotheses creation, etc)

Poster 11

UBC RURAL AND REMOTE DERMATOLOGY AND WELTEL- A SECURE TEXT MESSAGE PLATFORM TO SUPPORT OUR PROJECT

Nathan Teegee¹, Gabriel Serafini², Rich Lester^{2,3}, Neil Kitson¹

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada

²WelTel, Vancouver, British Columbia, Canada

³Department Epidemiology, Biostatistics and Public Health, University of British Columbia, Vancouver, British Columbia, Canada

In the past year, we have partnered with WelTel, a Vancouver-based provider of innovative software that utilizes the simplicity of text messaging for connected, streamlined healthcare. Our poster will highlight the value in the use of WelTel and explore the various functions that enable a dermatologist to participate in tele-medicine. The software enables a referring physician the ability to text message a photograph with accompanying history and reason for referral. Once the message is received, a notification to those “watching” that particular referring physician is sent to the dermatologist’s mobile phone. The WelTel platform allows you to utilize both store-and-forward (SAF) and Zoom voice and videoconferencing. We envision that there will be high user satisfaction and uptake in regard to utilizing this technology versus BBM, email, and phone calls. We will evaluate user perceptions in regard to the workflow experience and test our hypothesis via tracking the volume of consultations that come in via the various platforms over the next year. We look forward to your contributions, suggestions and review of our workflow and evaluation.

Category: Early experiments with well-defined objectives/hypotheses

Poster 12

TOPICAL CRISABOROLE VERSUS SUPERPOTENT TOPICAL CORTICOSTEROIDS IN THE TREATMENT OF PEDIATRIC ALOPECIA AREATA: A PILOT STUDY

Jamie Phillips, James N. Bergman

Department of Dermatology and Skin Science, University of British Columbia, Vancouver, British Columbia, Canada

Alopecia areata (AA) is a common, inflammatory, non-scarring hair loss condition. While its exact pathogenesis remains incompletely understood, it is postulated to involve T cell-mediated attack on cells within the hair follicle. Corticosteroids have long been a mainstay of treatment and intralesional injections are thought to be superior to topical application due to their ability to target deeper inflammation involving the hair bulb. Unfortunately, these can be time-consuming for healthcare providers and uncomfortable for patients, especially children. Crisaborole topical ointment, 2% is a novel non-steroidal anti-inflammatory that completed phase III studies for treatment of mild to moderate atopic dermatitis in 2016; however, its use in AA has not yet been investigated. Crisaborole is a 251 Dalton, boron-based molecule that selectively targets and inhibits phosphodiesterase-4, an enzyme involved in the proinflammatory cascade and shown to be increased in lesions of AA. Crisaborole's low molecular-weight is proposed to facilitate epidermal penetration, potentially providing a less invasive route for targeting follicular inflammation. A preliminary case series of 4 pediatric patients, including 3 patients with AA and one patient with alopecia totalis, showed superior regrowth of patches of alopecia treated with a combination of superpotent topical corticosteroids and crisaborole topical ointment compared to treatment with superpotent topical corticosteroids alone. We are planning a head-to-head study comparing the efficacy of topical crisaborole with superpotent topical corticosteroids.

Category: Pilot/exploratory experiments

Poster 13

IS ATOPIC DERMATITIS ASSOCIATED WITH FOOD ALLERGY IN ADULTS?

Aryan Riahi, BSc, Sunil Kalia, MD, MHSc, FAAD, FRCPC

Abstract: Introduction: Atopic dermatitis (AD) is a common, chronic skin condition that significantly affects quality of life. While many patients grow out of their disease by adolescence, a subset of them will have symptoms persisting into adulthood.

Methods: A systematic search through the literature was conducted using Medline and Embase from inception until March 2019. Data was extracted from 17 selected articles. A quality score to each article based on AD diagnostic criteria.

Results: Population-based studies demonstrate a higher rate of food allergies (FA) in patients with AD than healthy controls. Adults with AD are more at risk of developing FA than adults without AD. Birch pollen associated foods such as apple, carrot, celery, and hazelnut have been implicated to cross react with aeroallergens in adults AD. Studies comparing adults with and without AD demonstrate that 1.8% of healthy controls had FA compared to 10.1% of adults with AD based on history and positive skin prick testing (SPT) (OR =5.19, 95% CI 2.21-12.19). The most common symptoms of immediate reactions included oral allergy syndrome (58%), pruritus (12%), and flushing (9%). Studies comparing rates of food sensitization in patients with AD versus healthy controls reveals 17.1% of adult patients with AD experience a positive SPT to kiwi (adjusted OR = 17.4, 95% CI 2.0-147.7), 14.6% show elevated serum IgE levels to peanut (adjusted OR = 8.5, 95% CI 1.6-45.4), and 9.8% show elevated serum IgE levels to wheat (adjusted OR =10.8, 95% CI 1.1-104.3). Food sensitization appears to depend on severity of AD, as studies show that sensitization to animal food allergens such as cow's milk, hen's egg, fish, and shrimp was higher in patients with severe AD (51.4%, $p = 0.001$) compared to mild/moderate AD (27.7%).

Conclusion: Atopic dermatitis, food sensitization, and food allergies are associated with one another. The classic food culprits known to aggravate pediatric AD such as egg and wheat are less important in adult AD. Birch pollen-related foods seem to be more associated with adult AD. While cross-sectional studies are emerging, more longitudinal studies are needed to understand the mechanism behind sensitization to allergens.

Category: Pilot/exploratory experiments (for study design, hypotheses creation, etc)

Poster 14

UTILIZING A NURSE PRACTITIONER TO INCREASE EFFICIENCY AND IMPROVE RESOURCE ALLOCATION IN PEDIATRIC DERMATOLOGY

Matthew Roberts, MD, Wingfield Rehmus, MD
Department of Dermatology and Skin Science, University of British Columbia,
Vancouver, Canada

Pediatric dermatology is an underserved medical service with limited resources and long wait lists. Here we examine how implementing a nurse practitioner (NP) into an academic outpatient pediatric dermatology clinic has influenced the workload and resource allocation within the clinic. By comparing the number of physician visits relating to eczema, molluscum, and warts before and after introducing an NP into the clinic, we show that implementing an NP to manage primary care dermatology conditions allows physicians to focus on diagnostically and therapeutically more challenging cases. Adding an NP to the clinic has had a positive effect on the referral wait list, which is now decreasing by an average of 36 new patients per month. Lastly, introducing an NP has been a cost effective maneuver, as evidenced by comparing the institutional average NP salary to the average pediatric dermatologist salary to calculate a theoretical cost of hiring another dermatologist to provide the services and care provided by the NP. This evaluation of NP utilization in outpatient pediatric dermatology may be of benefit to providers of pediatric dermatology and dermatology alike, as they seek for novel ways to improve dermatology patients' access to care.

Category: pilot/exploratory experiments

Poster 15

CASE-BASED LEARNING AS A TEACHING MODALITY FOR DERMATOLOGY RESIDENTS AT THE UNIVERSITY OF BRITISH COLUMBIA (UBC)

Christie Elsdon¹, Mimi Tran MD, MBA^{1,2}, Angela Burleigh MD, PhD^{1,2}, Aaron Wong MD, FRCPC FAAD^{1,2}

¹Department of Dermatology and Skin Science, University of British Columbia

²Faculty of Medicine, University of British Columbia

Introduction: Case-based learning (CBL) is an interactive teaching modality used to examine and solve clinical problems. Studies on post-graduate medical education in the fields of obstetrics and gynecology, general surgery, and family medicine show that CBL-enhanced curricula leads to improved objective knowledge, increased self-reported confidence, better procedural skills, and improved knowledge retention. To date, no peer-reviewed publications have examined the use of CBL as a teaching modality in dermatology education. Our study describes the subjective experience of dermatology residents participating in a novel CBL program at UBC.

Methods and Results: A survey was used to collect feedback from UBC dermatology residents after the completion of four CBL sessions. We received 100% response rate from qualifying UBC residents in PGY 2 to 5. Overall, residents reported a high degree of satisfaction with CBL, with 100% agreeing or strongly agreeing that the sessions improved their understanding of the topic, helped relate theory to practice, and were effective for their level of training. The opportunity to discuss variations in practice patterns for investigations and treatment was cited by 10 respondents (66%) as the most valuable aspect of the cases. Thematic analysis of open-ended answers found that residents most liked the real-life focus and the interactive learning environment with staff members and other residents.

Conclusion: The implementation of a CBL-enhanced dermatology curriculum has been well-received by the residents of the program. The feedback gleaned from this study can be used to direct and optimize dermatology residency education at UBC and across the country.

Category: Early experiments with well-defined objectives/hypotheses

Poster 16

COMBINATION THERAPY USING INGENOL MEBUTATE AND METHYL AMINOLEVULINATE (MAL) PHOTODYNAMIC (PDT) THERAPY FOR THE TREATMENT OF ACTINIC KERATOSIS OF THE SCALP.

Jason K Rivers MD, FRCPC, FAAD^{1,2}, Bri Vestvik BSc, MSc¹, Misha Zarbafian MD²

¹Pacific Derm, Vancouver, BC, Canada

²Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada

Actinic keratosis (AK) is a pre-cancerous skin disease which commonly affects sun-exposed areas such as the scalp. Despite each AK having a low likelihood of malignant transformation to squamous cell carcinoma, the multiplicity of lesions can dramatically increase the likelihood for an individual patient. Current treatments include both lesion- and field-directed methods. Enhancing the effectiveness of topical AK therapies through an improvement in tolerability, convenience, and patient adherence, may be achievable through a combination of two concomitant AK treatments. There are few published studies that have reported on the combination of ingenol mebutate with another treatment modality. The primary objective of this study was to determine if the combination of ingenol mebutate with MAL-PDT was more effective than either treatment alone in the management of AK. Secondary objectives were to assess the safety and patient satisfaction of combined therapy. In this prospective, 12-week, split-scalp controlled trial, 20 patients had 3 distinct 25cm² treatment areas and a single 25cm² control area on the scalp. Each patient was designated the following treatments: (1) ingenol mebutate 0.015% daily for one week, (2) MAL-PDT, (3) 1-day of ingenol mebutate 0.15%, followed by MAL-PDT 4 days later, and (4) a control site. Each area of the scalp was marked with clear plastic and photographed at each visit. Lesions were counted by the same investigator at each visit and tissue reaction assessed. The methodology and preliminary data from this study will be the focus of this presentation.

Category: Early experiments with well-defined objectives/hypotheses

Poster 17

SUN PROTECTION PRACTICES AMONGST DERMATOLOGY PATIENTS

Rebeca Pinca¹, Nick Bansback², Sunil Kalia^{1,3,4}.

¹Department of Dermatology and Skin Science, University of British Columbia, Vancouver, Canada.

²School of Population and Public Health, University of British Columbia, Vancouver, Canada.

³Photomedicine Institute, Vancouver Coastal Health Research Institute, Vancouver, Canada.

⁴Departments of Cancer Control Research and Integrative Oncology, BC Cancer Agency, Vancouver, Canada.

Introduction: Skin cancer is the most common type of cancer and its incidence is increasing, despite it being one of the most preventable cancers. Ultraviolet radiation is a risk factor for skin cancer, and sun protection practices are encouraged by physicians and public health advocates, yet compliance rates tend to be low.

Objective: To describe the self-reported sun protection practices of dermatology patients.

Methods: We conducted a survey amongst 244 dermatology patients at an academic practice and collected data about their reported adherence to the following sun protection strategies: wearing a wide-brimmed hat, protective clothing, or sunglasses, seeking shade, and applying sunscreen. Participants were asked to indicate how often they adhere to each action "when they are out in the sun in the summer:" Never, Rarely, Often, or Always. They were also asked if they try to get a tan, and how much sunscreen they use per year.

Results: 39% of participants indicated that they "always" or "often" wear a wide-brimmed hat (N=96), 48% wear protective clothing (N=116), 82% wear sunglasses (N=201), 79% (N=193) seek shade, and 51% apply sunscreen (N=125). One-third (N=162) of participants try to tan when they are in the sun. Half of participants (N=72) report using less than two 100-mL bottles of sunscreen per year.

Conclusion: Further advocacy regarding the importance of sun protection is important. The amount of sunscreen participants reported applying per year is low.

Category: Early experiments with well-defined objectives/hypotheses