

Reports on Scientific Meeting

CU Dermatology Symposium and Social Hygiene Symposium 2010

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the immature skin makes them more vulnerable to external insult.

With the knowledge of the structure and physiology of childhood skin, customized childhood skin care strategies should be implemented as early in the neonatal period to protect the stratum corneum and hence the barrier function.

Skin care for baby

Speaker: Dr. Rikako Sasaki
Rikako Dermatological Clinic, Japan

The physiology of children's skin changes markedly from neonatal period to puberty and their structure also differs from adult skin. Hence, infants and children are particularly prone to a number of dermatological conditions like eczema and infection.

It has been shown that sebum secretion of the skin peaks at 4th week and falls subsequently until puberty. Hence, frequent washing and cleansing during early infancy will lead to dry skin and precipitate eczema.

Moreover, cutaneous infections are common in children. Disorders like impetigo and molluscum contagiosum rarely affect adult. This may be explained by the comparatively thinner skin in children. This fragility of the barrier function of

Learning points:

Early customized skin care strategies are essential to protect vulnerable skin in neonates.

Integrated approach to research on Chinese medicine and some examples

Speaker: Prof. Ping-chung Leung
Professor, Institute of Chinese Medicine, The Chinese University of Hong Kong, Hong Kong

Allergic disorder, viral infection, degenerative disorder, and cancer often pose a lot of clinical challenges in modern western medicine. Traditional Chinese Medicine may provide new alternatives to these patients. However, evidence on efficacy of Chinese medicine is limited.

Conducting researches in Chinese Medicine have technical difficulties. First, toxicity of the

herbal medicine is not always known. Also, the variation in the terminology of herbal medicine is confusing and makes standardization difficult. Furthermore, the chemistry of the active component in herbal medicine is unknown. And it is sometimes difficult to extract the biologically active component from a complex formula, which make subsequent re-formulations and drug development difficult.

Yet, traditional Chinese medicine had been shown to be effective in some clinical problems in preliminary studies. Astragalus and radix rehmaniae had been used in ulcer management and was found to enhance angiogenesis and promote granulation. PentaHerbs, which consists of Jin Yin Hua, Bo He, Dan Pi, Cang Zhu and Huane Bai, has also been used to treat atopic dermatitis among children. Finally, Bakuchiol and Macrocarpal C were shown to contain active antifungal chemical molecules which may be helpful in treating tinea pedis.

Hence, it is time for us to consider the development of TCM. Working out the active chemical compound from herbal medicine and modifying classic complicated formula into simpler reproducible formula will help facilitate further studies on TCM.

Learning points:

TCM intervention carries a great potential for future research. It is time for us to consider development of TCM, with reference to the modern drug development in western medicine.

Environmental factors and the skin

Speaker: Dr. Tin-sik Cheng

Medical and Health Officer, Social Hygiene Service, Hong Kong

A myriad of skin diseases associated or impacted by environmental changes were illustrated with three major topics discussed.

1. Updates on role of UVA in skin cancer

While UVA was believed to have more effectively induced melanoma than UVB in a land-mark animal study using Xiphophorus fish in 1993, subsequent animal studies in mammalian models failed to reciprocate the same results. The most recent study conducted by the group in MD Anderson Cancer Center in 2010 using the same hybrid of fish with a much-larger, statistically-adequate sample size revealed that UVB-irradiation yielded higher frequency of melanoma (44%) than UVA irradiation (13%), the latter of which was similar to baseline. These data were consistent with the current belief of early life exposure of UVB contributing to melanoma formation by direct DNA damage and formation of cyclobutane dimers and (6-4) photoproducts. Though there was no evidence of UVA causing melanoma thus far, the speaker reminded us that UVA was also a carcinogen linked to non-melanotic skin cancer through similar mechanisms as above. The dangers of using artificial sun-beds for tanning were illustrated in a meta-analysis of 19 studies which validated the association of sun-bed exposure with melanoma and non-melanotic skin cancer in Caucasians (especially worse when exposed at young age <35, relative risk 1.75). The International Agency for Research on Cancer Working Group had classified tanning beds as carcinogenic to humans in July 2009. Finally, the mechanism of how UVA synergized with air pollutants, polycyclic aromatic hydrocarbons (PAH), especially, benzoapyrene, through generation of reactive oxygen species, to chemo-photocarcinogenesis, was addressed. Topical exposure of PAH acted as photosensitizer for UVA, and produced increased incidence of

local skin and lung carcinomas in animal models.

2. Contact dermatitis and metal allergy

In the last decade, nickel was the commonest metal and allergen accounting for contact dermatitis in patients in North America. The trend of nickel allergy confirmed on patch test had increased from 10% to 19% over 10 years. Cell phone dermatitis, typically located to ears, pre-auricular areas and cheek, was thought to be due to contact allergy with external metal parts of cell phone. The European Nickel Directive, which currently restricted nickel release to $\leq 0.2 \mu\text{g}/\text{cm}^2/\text{week}$ in objects to be used for prolonged contact with skin, was effective in decreasing nickel sensitization and subsequent nickel allergy in young children <18 years old. The relationship of nickel allergy to failed metal joint prosthesis was not substantiated, however. The most common manifestation for metal-allergy patient to have received orthopedic implant was dermatitis. There was so far no concluding evidence for metal allergy contributing to in-stent restenosis for patients receiving percutaneous coronary intervention with stenting.

3. Tick-borne disease

The recent news of tick-bite reactions resulting in deaths in China due to human anaplasmosis was discussed. Also known as human granulocytic ehrlichiosis, it was caused by *Anaplasma phagocytophilum*, transmitted to humans through ticks. Patients would have symptoms of fever and influenza-like illness, gastrointestinal upsets and rash in forms of inflamed papule, nodule, or eschar with local complications. It was associated with leucopenia and thrombocytopenia and sometimes transaminitis. The disease was treatable as with other tick-borne disease with doxycycline. The well-fed tick on the skin could be sometimes be misdiagnosed as wart or neoplasm. It could transmit other infections such as Lyme disease, rickettsial infections and tularemia.

Learning points:

UVA is a carcinogen linked to non-melanotic skin cancer. Artificial sunbed use is associated with skin cancer. Cell phone dermatitis is due to contact allergy with external metal parts of cell phone. Tick bite reactions may result in human anaplasmosis which is treatable with doxycycline.

Skin Barrier in relationship to Neonatal Problems and Management

Speaker: Dr. Giam-yoke Chin

Consultant Dermatologist, National Skin Centre, Singapore

The epidermis serves to prevent penetration of exogenous substance and reduce trans-epidermal water loss. It is important to understand the nature of the neonate skin in order to tackle the skin problem properly. The skin of neonates is different from that of adults in a number of ways. Firstly, the degree of hydration of stratum corneum is less compared to adults. Secondly, the barrier function and the homeostasis control mechanism of infant skin are still under development in the first year of life.

The neonate skin also provides innate immunity. Defect in innate immune system would increase the susceptibility of skin to bacterial infections, namely *staphylococcus aureus*. It may also lead to reduced recruitment of innate immune cells such as natural killer cells.

Based on our understanding of the nature of infant skin, we can improve the termed infant skin care by: 1) bathing babies with mild, moisturizing, lipid-rich bathing products; 2) using superabsorbent diapers; 3) cleaning the umbilical cord and infected skin with chlorhexidine; 4) using emollients containing ceramide and glycerine.

The stratum corneum of premature babies has a less developed barrier function. Therefore, special attention has to be given to skin care. It is recommended that no bathing in the first 2 weeks. Cleaning should be done with warm water and aqueous chlorhexidine antiseptics. We should try to avoid using adhesive tapes due to the delicate nature of the premature infant skin. To reduce trans-epidermal water loss, it is advised to use occlusive emollients, isolettes and baby shields.

Learning points:

The nature of neonate skin is different from that of an adult. Special skin care has to be given to termed and pre-termed infants in order to suit their requirements.

Management of keloids and hypertrophic scars

Speaker: Dr. Peter Ku

Consultant, Department of Otorhinolaryngology, Head and Neck Surgery, The Chinese University of Hong Kong, Hong Kong

Keloids and hypertrophic scars are abnormal wound healing responses to trauma, inflammation, burns and surgery. Hypertrophic scars contain excessive scar tissue which is confined within the wound border, but keloids usually have scar tissue that extends beyond the margin of the wound. They usually cause symptoms such as pain and itch, as well as disfigurement and functional impairment.

The aims of treatment for keloids and hypertrophic scars are to reduce the symptoms of pain and pruritus, the volume of scar, the redness and dyspigmentation.

Intralesional injection of triamcinolone to keloids or hypertrophic scars can reduce symptoms, soften and flatten the lesions. The injection may

cause pain due to the building up of hydrostatic pressure inside the scar, but this can be reduced by mixing the steroid with local anaesthetics such as xylocaine. The treatment should continue monthly for 6 to 12 months.

Other treatment modalities such as elastic garments can be used for prevention and treatment of keloids and hypertrophic scars. Silicone gel sheets can promote wound healing and reduce symptoms. Intralesional interferon gamma and interferon alpha-2 beta can suppress collagen synthesis thus is useful in treating keloids.

If the keloids do not respond to medical treatment, then surgery can be considered to excise the keloids. Injection of steroid before and after the excision can reduce the risk of keloid formation after the surgery.

Other forms of treatment such as injection of mitomycin C, cryotherapy, dermabrasion and laser treatment e.g. CO₂ laser, Nd-YAG and pulse dye laser have been used with success

Prevention of scar formation is also important. Proper wound care such as avoiding wound infection, reducing mechanical irritation and reducing wound tension can all help to reduce the risk of keloids and hypertrophic scars formation.

Learning points:

There are a number of ways to treat keloids and hypertrophic scars, such as intralesional steroid injection, pressure garments, silicone gel sheets, cryotherapy, interferon, surgery and lasers. Combination of different therapies can increase the success rate of treating these lesions.

A survey of hand eczema using self-reporting questionnaire amongst nurses in a major regional hospital in Hong Kong

Speaker: Dr. David Luk

Consultant, Department of Paediatrics and Adolescent Medicine, United Christian Hospital, Hong Kong

Occupational contact dermatitis is a common skin problem among healthcare workers all over the world. Studies in western countries showed that 70% of nurses were reported to suffer from hand eczema. Hand eczema not only affects the working performance but also the psychosocial aspects of the medical staff.

In view of this, a survey amongst nurses on hand eczema had been conducted in the United Christian Hospital from June to July 2010. The data was collected by means of questionnaires. A total of 1240 questionnaires had been given out and 728 questionnaires returned. The reply rate was around 59.2%.

The prevalence of hand eczema in nurse was found to be 22.6%. Hand eczema most commonly occurs between 34 to 40 years old. Itchiness was the most commonly encountered symptom, which was followed by other symptoms such as dry skin, desquamation, scaling and oozing. The majority of nurses reported to have symptoms that lasted for 1 to 5 years. There was no association between the nursing specialty and the prevalence of hand eczema. The most common treatment given to nurses when they saw doctors was emollient, followed by topical steroid. The majority of nurses washed their hands more than 20 times a day.

This study identified some factors associated with higher risk of developing hand eczema which include personal history of atopy, family history of atopy, age older than 30 years old and the use of emollient after hand wash.

The use of gloves can protect our hands and reduce the risk of developing allergic contact

dermatitis. The speaker suggested wearing gloves for no longer than 10 minutes. This is because sweating under the gloves would cause irritation to skin. As compared with hand washing, alcohol hand rub was a less irritating way of disinfecting the hands.

Learning points:

Hand eczema is a common skin problem among healthcare workers in Hong Kong. Factors associated with increased risk of developing hand eczema include personal history of atopy, family history of atopy, age older than 30 years old and the use of emollient after hand wash. The use of gloves can protect our hands against hand eczema.

Recent advances in the laser treatment of pigmented lesions

Speaker: Dr. Moniz MC Wong

Dermatologist, Private Practice, Hong Kong

Pigmented lesions over skin, especially on the face, may cause great psychological stress. The use of laser treatment for pigmented lesions has become one of the most popular aesthetic procedures. Before any procedures, the most important step is to make a diagnosis of the pigmented lesions and identify the underlying aetiology.

With the development of lasers and other light-based devices over the recent years, many cosmetic hyperpigmentary disorders can now be safely and effectively treated. Selective photothermolysis is the main principle for treatment of pigmented lesions by lasers. Melanin, the chromophore in most pigmented lesions has a broad absorption spectrum (from 320 to 1000 nm), leading to different choices of laser with selective range of wavelengths. Longer wavelengths like red and infrared lasers

penetrate deeper and hence are used for dermal lesions; whereas shorter wavelengths like green light are used to treat epidermal lesions. The appropriate selection of devices for different lesions is vital to achieve satisfactory clinical outcome.

For Q switch (QS) laser, it is effective for freckles and lentigo especially for light skinned patients; however post inflammatory hyperpigmentation (PIH) can occur especially in Asian because it produces photomechanical injury. The risk of PIH is higher in patient with lentigo compared to freckles. Long-pulsed (LP) laser generate mainly photothermal effect, with lower risk of PIH than QS lasers especially for Asians. Possible adverse effects of laser therapy including burns, erythema, bruises, hyperpigmentation, hypopigmentation and scars may occur. However, most of the adverse effects are transient, with the last three side effects being more commonly seen in dark skin.

Learning points:

The use of laser treatment for pigmented lesions has become one of the most popular aesthetic procedures. Making a correct diagnosis of the pigmented lesions and identifying the underlying etiology are of paramount importance in the management of pigmentary disorders.

Recombinant desmoglein: How it advances our understanding in pemphigus

Speaker: Dr. Po-tak Chan
Acting Senior Medical and Health Officer, Social Hygiene Service, Centre for Health Protection, Department of Health, Hong Kong

The concept of pemphigus has evolved in stages, from clinical description of the disease, histopathological features to pathophysiology.

Since the autoimmune nature of the pemphigus was discovered, intense effort has been invested in unraveling its antigen. The discovery of desmoglein 1 and 3 as the antigens of pemphigus foliaceus and pemphigus vulgaris respectively, was a major breakthrough in pemphigus research.

The contribution of recombinant desmogleins is discussed in the following areas: proving anti-desmoglein antibody is pathogenic, defining the expression levels of desmogleins in stratified squamous epithelium, development of ELISA assay for anti-desmoglein 1 and 3 antibodies, epitope mapping of pemphigus antibody and adoptive transfer mice model for pemphigus vulgaris.

Learning points:

Recombinant desmoglein molecules can help in understanding the pathophysiology of pemphigus and management of patients with pemphigus.

Clinical management of genital wart: A brief review for clinicians

Speaker: Dr. Kuen-kong Lo
Specialist in Dermatology and Venereology, Hong Kong

Genital wart is currently considered to be one of most common sexually transmitted diseases in the developed world. It is characterized by genital growth that can take various clinical forms and the diagnosis most often relies on clinical features. It may appear as cauliflower-like genital growth, dome-shaped or flat-topped papules in the genital mucosa.

The natural course of genital wart is highly variable and depends on a lot of factors, though majority of cases of genital wart will remit over time. Good understanding of the disease and

its natural course are very useful to assist counseling and management of the condition.

There are numerous forms of treatment for the condition but there is no good evidence to show that any one is superior to the other. In general, treatment options can be divided into patient delivered (home treatment) and healthcare provider delivered (clinic treatment). There are only a few standard home treatments, namely podophyllotoxin topical preparation (cream or lotion) and imiquimod cream. Clinic treatment options include: cryotherapy, topical podophyllin resin application, topical trichloroacetic acid, destruction by electrocautery, scissoring, carbon dioxide laser, intralesional interferon and topical 5-fluorouracil preparation.

The principle for management of genital warts relies on 1) accurate clinical diagnosis and promulgation for safe sex, 2) cautious interpretation of laboratory test if available, 3) good counseling on the nature of the disease, 4) the active treatment should do no more harm than the disease itself, and 5) understanding the harm of genital wart – physical and psychological burden to patient.

Learning points:

Healthcare providers have to approach the disease not just from professional point of view, but also need to consider the overall health gain by the patient and the patient's point of view. The active treatment should do no more harm than the disease itself. Thorough counseling and communication are of utmost importance in the clinical management of genital wart.

Adolescent sexually transmitted diseases in a male social hygiene clinic

Speaker: Dr. Kim-fung Cheng

Medical and Health Officer, Social Hygiene Service, Centre of Health Protection, Department of Health, Hong Kong

Despite the recent drop of reported sexually transmitted infections (STI) in the Social Hygiene Service, the proportion of youngsters acquiring STI was on the increasing trend.

A cross sectional, clinic-based survey was conducted on the sexual behavior among attendants in Yaumatei male STI clinic. The survey was in the form of a face-to-face interview by a trained nurse with a structured questionnaire. The study was conducted between March and September 2010 for all the new attendants aged 21 years or below living in Hong Kong. One hundred seventy five STI patients were recruited.

The study revealed that up to 43% of the recruited STI patients delayed their consultation for more than one week after their first symptom, and many of them (50%) had never learnt about condom usage. This reflects the need for education on STI and practice of safe sex. Internet can be an important channel for adolescents for getting STI information. In the study, 65% of patients reported internet as their main channel for STI knowledge.

Learning points:

Many youngsters have misconception about sexually transmitted disease and did not practice sex safely. The local data may provide a solid foundation for implementing future health projects.