ACD 49th Annual Scientific Meeting

Conference Review™

Making Education Easy

14-17th May 2016, Perth, Australia

In this review:

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RESEARCH REVIEW™
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Welcome

to our review of the Australasian College of Dermatologists (ACD) 49th Annual Scientific Meeting, held recently in Perth. The meeting was well attended and offered an excellent opportunity to update knowledge and renew acquaintances. The invited speakers were of a high standard and provoked thought, discussion and review. Dermatologists Anthony Yung (Waikato Hospital, NZ) and Kurt Gebauer (Perth, Australia) attended the meeting and found the following sessions to be particularly interesting. More information about the meeting can be found online at https://www.dermcoll.edu.au/wp-content/uploads/FAweb_SS0315_ASM2016_ProgBrochure.pdf and abstracts can be found online at http://onlinelibrary.wiley.com/enhanced/doi/10.1111/ajd.12480/.

I hope you find the Conference Review interesting and I look forward to your feedback.

Kind regards

Dr Chris Tofield,
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New advances in rosacea

Presenter: Dr S Cliff

Summary and comment (AY): Rosacea is a common condition with significant variation between the four clinical types: erythematotelangiectatic, papulopustular, phymatous and ocular. Canthelicidin LL-37 has been increasingly recognised as having a role in promoting angiogenesis – release of pro-inflammatory cytokines that mediate the development of rosacea. Toll like receptor 2 (TLR2) activation leads to an increase in Kallikrein-5 expression and the development of inflammation in the skin of patients with rosacea. Antibiotics reduce canthelicidin LL-37 expression and this explains their efficacy in reducing the inflammation seen in papulopustular rosacea. Retinoids block TLR2 expression.

Recent evidence suggests Demodex mites, which live in the hair follicles, impair epidermal barrier function and stimulate TLR2 expression. Thus, treatment of Demodex mites may have some pathogenic role in a proportion of patients with rosacea. Prior clinical observations show oral ivermectin can temporarily improve rosacea. More recent studies have demonstrated that topical 5% permethrin and 1% ivermectin creams have some efficacy in the treatment of papulopustular rosacea. Laser treatment (595nm pulse dye laser, 532nm KTP laser) and topical alpha 2 antagonists (e.g. brimonidine) have some role to play in the treatment of the changes seen in erythematotelangiectatic rosacea.

Effective treatment of rosacea often requires multimodality/multi-agent treatment.

ACD 49th Annual Scientific Meeting 2016. Opening plenary session 1. May 15

Independent commentary by Anthony Yung MBChB (Otago) FRACP

Dr Anthony Yung is a specialist dermatologist at Waikato Hospital and in private practice. He has completed specialist dermatology qualifications in New Zealand and United Kingdom. His interests include treatment of common skin disorders (such as eczema, psoriasis, acne), unusual and rare rashes, all types of skin cancers, paediatric dermatology, phototherapy, patch testing and dermatological surgery.

Independent commentary by Kurt Gebauer MBBS, FACD, FACP

Clinical Associate Professor Kurt Gebauer is formerly Head of Department of Dermatology at Fremantle Hospital and is a Senior Lecturer at the University of Western Australia. Additionally he is accredited to several Private Hospitals in Perth and is a member of numerous Medical Societies including the Australasian College of Dermatologists, American Academy of Dermatology, International Society of Dermatology, Sclerotherapy Society of Australia, Australian and New Zealand Society of Phlebology.

Metabolic syndrome in psoriasis

Presenter: Dr J Kaye

Summary and comment (AY): A significant proportion of patients with psoriasis have associated metabolic syndrome (obesity, hyperlipidaemia, hypertension, insulin resistance and/or diabetes mellitus) which in turn is associated with increased cardiovascular, cerebrovascular and microvascular/ macrovascular disease or complications. If untreated, there is increased premature morbidity and mortality. In patients with frank type 2 diabetes mellitus, previous trials aiming to tightly control glucose levels (HBA1c <6.5%) showed no overall improvement in outcome (mortality) but other studies did show it may delay the onset of microvascular disease (e.g. retinopathy).

Further follow-up data for the UKPDS trial demonstrated there is demonstrable improvement in risk reduction of death by about 15% at 12 years. This implies any intervention to modify glycaemic control, reduce weight, reduce lipids, and reduce hypertension requires longer than 10–15 years of sustained intervention before benefits are seen. 30–60 minutes of moderate exercise for 5–6 days per week reduces risk of cardiovascular death, cancer, and depression by approximately 30–40% but is associated with only approximately 10% weight reduction.

Calorie reduction often does not lead to sustained nor significant weight loss. The only diet demonstrated to reduce cardiovascular disease is the 'Mediterranean' diet. In patients with established type 2 diabetes mellitus, treatment with a statin-type drug reduces the number of first cardiovascular events by 40%.

Modification of lifestyle and pharmacotherapy do not necessarily result in the same degree of benefit to all patients.

The greatest potential benefit to patients with metabolic syndrome would occur if all patients were to go on a regular moderate exercise and fitness programme (rather than weight loss alone).

ACD 49th Annual Scientific Meeting 2016. Janssen-Cilag sponsored breakfast session. Past, present and future: the evolving dermatology treatment landscape. May 14

Treatment of female pattern hair loss with low dose minoxidil

Presenter: Professor R Sinclair

Summary and comment (AY): Treatment of female pattern alopecia has been challenging, with few effective options available. Combination low dose minoxidil (0.25mg daily) plus spironolactone (25mg daily) for 6–12 months has been shown to significantly improve hair growth, reduce shedding and improve hair density. Treatment was well tolerated with only a small proportion of patients having side effects severe enough to discontinue treatment. Average reduction in blood pressure was 5 mmHg for both systolic and diastolic blood pressure. Low dose minoxidil may be used in telogen effluvium and its use is being explored for other forms of non-scarring alopecia. Further research is examining its use in combination with other anti-androgens e.g. cyproterone acetate, flutamide, and bicalutamide.

ACD 49th Annual Scientific Meeting 2016. Alopecia symposium. May 17

The cutaneous microbiome: a marker of healthy skin an underestimated factor in skin disease

Presenter: Professor T Bieber

Summary and comment (AY): The microbiome (the sum total of all the microbes on the human body) is increasingly being recognised as an important aspect of the human body. The microbiome is likely to have significant roles in the normal function of the human body but is only now beginning to be studied.

The human microbiome consists of 10^{13} cells which equates to approximately 1.5kg of total body mass. The development of the skin microbiome probably starts *in utero*. Every step from *in utero*, to birth, to skin-skin contact, to suckling in the first year of life influences the development of the human microbiome. It was previously thought that the skin microbiome was limited to epithelial surfaces but it is now known that it extends down into the skin appendages and possibly even within the deep dermis. The human genome determines the expression of the innate immune system, which in turn has an important role in determining the make-up of the skin microbiome.

The skin microbiome is diverse, with differing composition of species and proportion of species of microbes – it varies from area to area on the body but surprisingly the composition is relatively stable over time for a given individual. There are significant inter-individual differences in the composition of the skin microbiome. Imbalance of the microbiome or "dysbiosis" is implicated in the development of different disease, e.g. in atopic dermatitis there is a reduction in diversity of skin microbiome and also an increase in *Staphylococcus aureus* which is associated with increased risk of sensitisation to allergens and severity of eczema.

Faecal transplantation for the treatment of *Clostridium difficile* toxin-induced diarrhoea is an example of manipulation of the microbiome to treat medical conditions. Modification of the skin microbiome may potentially lead to significant benefits in prevention and treatment of atopic dermatitis, and in reducing sensitisation of the immune system to allergens. Early studies suggest there is potential for microbiome manipulation to treat and prevent atopic dermatitis.

ACD 49th Annual Scientific Meeting 2016. La Roche Posay sponsored breakfast session. A further look into the skin microbiome and its role in cutaneous disease. May 16

Psoriasis symposium

Chair: Clinical Associate Professor K Gebauer

Summary and comment (KG): Celgene sponsored a challenging psoriasis symposium which was held on Saturday after the formal sessions. The session discussed difficult-to-treat areas of psoriasis and issues with the Psoriasis Area Severity Index (PASI), and the intent was to get interactive audience discussion. There was some significant discussion regarding challenging patterns of psoriasis, namely hands and feet, and scalp in particularly challenging patients.

At the conclusion of the symposium it was clear that the primary end-points had been satisfied. There was significant interaction amongst colleagues as to how they dealt with their own patients. The important issue for me was how many phototherapy sessions could be utilised before patients should be shifted for safety reasons etc. The answer to the last question was greater than 500.

ACD 49th Annual Scientific Meeting 2016. Celgene sponsored symposium: why management of psoriasis must extend beyond PASI scores. May 14

Patient care in psoriasis: is it time to raise the therapeutic bar?

Presenters: Professor M Hopwood & Dr B Nickoloff

Summary and comment (KG): The Lilly breakfast symposium had two keynote speakers. Brian Nickoloff, an expert in psoriasis and biologic therapy, gave a rundown of the present status of biologic targets for psoriasis. The highlight for me was the lecture given by Professor Malcolm Hopwood. He is the President of the Australian Psychiatrist's Union. His topic of discussion was depression, a very valid topic for all clinicians. It is particularly valid for psoriatic patients who suffer high rates of depression. It was a very practical, easy to understand lecture which gave some good clinical tips that were helpful to me in my approach to patients.

ACD 49th Annual Scientific Meeting 2016. Eli Lilly sponsored breakfast. Patient care in psoriasis: is it time to raise the therapeutic bar? May 17

Melanoma symposium

Chair: Dr E Tan

Summary & comment (KG): The melanoma symposium was a very up-to-date review of the most current state of play. Melanoma therapies change almost monthly depending on the latest review. Now that we have identified a number of sites in the melanoma genome that we can attack with therapies, there is a lot more to offer than systemic dacarbazine therapy. The specific genetic testing of melanoma cells and what it means was discussed. The newer drugs that are presently available and utilised in Australia for our patients were expounded on. There are a number of novel agents being developed. Presently we are moving to combination therapies of what we have already. Previously a response rate of close to zero was expected but patients can now, depending on the programme as well as their genetic profile, anticipate a 20–50% significant clinical response/remission.

ACD 49th Annual Scientific Meeting 2016. Melanoma symposium. May 15

Acne symposium: ask the expert

Chairs: Dr J See & Clinical Associate Professor K Gebauer

Summary & comment (KG): The All About Acne session was held on the Sunday morning. The keynote lecturer discussed chemical peels in his busy clinical practice. Various peel types as well as response rates were covered. A number of his patients were more heavily pigmented than the standard Englishman. His treatment algorithm and approach was outlined. Is this going to change my practice? Probably not, as I don't do a lot of cosmetic work, however it has given me some food for thought.

For the basic scientist we introduced Professor Maurice van Steensel who was originally a Professor in Holland and is now a Professor in Scotland as well as Singapore. He is a basic cell biologist who is doing investigatory work on acne vulgaris. Certainly his lecture (see below) exploded my concept of what acne was and how it worked. This was very much a moving feast with a number of preliminary reports on what they had found about the cause of acne. Professor van Steensel suggested that acne was not an overproduction of sebum occlusion leading to inflammatory mitigators as a result of obstruction of sebum outflow, rather a primary inflammatory process due to systemic inflammatory causes. It will be fascinating to hear how his work expands and where it leads to over the next 2–3 years.

ACD 49th Annual Scientific Meeting 2016. Acne symposium: ask the expert. May 15

What really causes acne – up to date pathogenesis

Presenter: Dr M van Steensel

Summary and comment (AY): The old paradigm of acne caused by follicular occlusion, *Propionibacterium acnes* colonisation, followed by *P. acnes*-induced inflammation causing inflammatory acne has long been accepted. Recent observations suggest the paradigm may no longer be valid. In some cultures, acne was hardly ever present up until the introduction of foods from a Western diet, suggesting diet may have a role in its development.

There is some evidence that foods that increase the release of insulin may have a role to play in the inflammatory phase seen in acne. Prior studies have shown that a very mild inflammatory response to clinically non-inflamed comedones has been mediated by CD4 positive T helper cells, suggesting *P. acnes* may not be the reason for inflammatory lesions in acne.

The development of acne in puberty and with polycystic ovary syndrome suggests androgens are involved in the pathogenesis of acne probably due to changes in sebaceous gland growth, differentiation and secretion of sebum. Histology of comedones shows dilatation of the hair follicle, leading to accumulation of keratin and lipid deposits within the follicle; there is relative atrophy of sebaceous glands compared to normal hair follicles.

Insights about physiological pathways gleaned from very rare genetic conditions (e.g. Apert syndrome, Frank-Ter Haar syndrome and Winchester syndrome) suggest that changes in sebaceous gland growth and differentiation are central to the development of comedones and relative atrophy of sebaceous glands in established non-inflamed comedones. *In vivo* experiments indicate the proteins FGFR2 (Apert syndrome), SH3PXD2B and MMP 14 (Frank-Ter Haar syndrome) and MMP2 (Winchester syndrome) can be manipulated in sebaceous gland models to recreate the histological changes of sebaceous glands seen in the normal skin, early and late non-inflamed comedones stages.

Future therapeutic modalities for acne are likely to target specific molecular pathways and/or proteins, and can be identified and tested in these models.

ACD 49th Annual Scientific Meeting 2016. Acne symposium: ask the expert. May 15